Westrex 2000 Series 35mm Projection and Sound Systems

Technical Manual

Section 1 Installation
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Westrex 2000 Series 35mm Projection and Sound Systems

Section 1

INSTALLATION INFORMATION

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1. GENERAL

- 1.01 Unpack the equipment and associated parts with care, checking that all parts shown on the stocklists and shipping sheets are included and there is no evidence of transportation damage or mishandling.
- 1.02 Clean off the protective grease from sprockets, rollers, gates etc. Solvent such as 'Inhibisol' or 'Isopropyl Alcohol' may be used with care. Avoid washing the lubricant from the bearings. It is important to note that some solvents leave behind a powder deposit which may cause trouble, such as Carbon-Tetrachloride and Inhibisol which also reacts unfavourably with some plastics.

2. PLANNING

- 2.01 Proceed to plan the equipment layout generally on the lines shown in drawings A & B preparing recesses for conduit and trunking in the floor or walls as indicated. The amplifier units should be fixed on the projection room walls, the back stage loudspeakers should provisionally be located behind the screen frame.
- 2.02 To avoid subsequent problems of interference from mains supply lines, mains transformers and arc lamp supplies, precautions must be taken at the outset to ensure that such sources of interference are kept to a minimum by twisting together and screening AC lines or rough unsmoothed DC supply lines to the arc lamps. Avoid placing arc rectifiers, transformers, fans and power units unnecessarily near to low level audio frequency lines and magnetic reproducers. In many instances the cost and need for special mumetal shielding can be avoided by good planning. Exhibitors should be advised that the employment of arc rectifiers or generators producing a rough DC arc supply and having strong external interference fields should be avoided.
- 2.03 The projector pedestals should be moved into approximately their correct positions, on centre lines approximately 4'6" apart, matching the centre lines of the projection ports. The distance the pedestal is placed from the front wall can be obtained from drawing C.

3. ORDER OF ASSEMBLY

3.01 To erect the projector assemblies without the need for any subsequent dismantling, assemble the major units with the bolts provided in the following order:

2024-K or S 2003-E 2023-B or 2029-A 2001-J/3 or L/3	Pedestals. Photographic Sound Track Reproduced Lower Film Magazine.
LSD-68876 2022-A or 2028-A	Projector Motor Mounting Bracket Upper Film Magazine

- 3.02 Vertically align the film sprockets of the 2001-J or L/3 and 2003-E units with the 42342 alignment gauge.
- 3.03 Interconnect the pedestals, reproducers, amplifer assemblies and loudspeakers in accordance with drawing D for a single track system.

4. SETTING UP THE PROJECTION EQUIPMENT

4.01 Place on the drive shaft of the 33242-A Motor the adjustable twin 'V' Belt pulley. With the motor on the motor bracket, place the two belts in situ by temporarily releasing the outrigger bearing support of the 2003 film sprocket shaft, fit the LSD 74024 Take Up Belt (for 18" Spool Box) or the LSD 51472 Belt (for 24" or larger Spool Box) to the small 'V' pulley to the rear of the 2003 Film Sprocket Shaft. Provisionally bolt the motor in situ but delay tightening the belts until the projector drive details have been fitted. Align the driving and driven pulleys and lock up with the Allen Screws.

It is important to see that the correct motor drive pulley has been selected, 42051 for a 50 Hz supply and 42052 for a 60 Hz supply.

Using the 2 Allen Cap Screws provided, fit the Lower Spool Box and associated distance plate or block to the under side of the 2003 Rep.Set. It may be convenient to support the Spool Box by means of the driving belt previously fitted while carrying out this action.

The driving belt tension should be adjusted after assembly is complete, by means of rotating the outrigger bearing bracket of the film sprocket shaft. Do not overtighten, it should be easy to twist the belt through 180°.

The Lower Spool Box may be of three types:

1) 2023 – B 18" Dia. or 2) 2029 – A 24" Dia. or 3) 2898 – A Lower Spool Arm Assembly

4.02 Assemble and align the toothed rubber projector drive details on the projector and 2003—E Reproducer. Rotate and rebolt the driven shaft outrigger bearing support in position, finalising the tension of the toothed rubber belt with the jockey pulley.

- 4.02 Ensure that the drive sprocket has 22 teeth and the projector driven sprocket 17 teeth and firmly lock the sprockets on their respective shafts. The relative rotational position of these sprockets on the shafts will, to a limited degree, enable the optimum film loop between the picture gate and sound scanning point to be achieved.
- 4.03 Tension the toothed belt to avoid any possibility of tooth jump but not so tight as to cause rumble. Tension the 'V' Belts by sliding the motor cradle to or from the driven pully to avoid slippage but not so tight as to cause unnecessary bearing wear. Bolt the motor firmly in position.
- 4.04 Connect the flexible conduit carrying two conductors from the underside of the 30535—J Switch to the drive motor. Connect the flexible conduit 74250 between the 31107—A Fuse box and the framing lamp cable entry on the front of the 2001—J or L/3 Projector. To ensure that the flexible metal tubing does not come away from the coupling it is recommended that the coupling be first screwed 'or soldered to both ends of the metal tubing, before the couplings are locked in situ with the nuts. If this order of assembly is followed, there will be no tendency for the conduit to unscrew itself. The conduit must be in a slight state of stress such that it is trying to tighten itself into the coupling rather than loosen itself.

The drive motor concentric mount clamps should be temporarily loosened whilst the motor is rotated to make the cable gland face downwards, putting the minimum strain on the flexible conduit.

In the case of the 2024—S Pedestal the flexible connections from the motor, projector, sound reproducer and Zippa change—over units are made to the respective terminal blocks via pre—drilled holes in the front face of the pedestal.

- 4.05 Connect the water cooling system to the inlet and outlet nozzles of the water jacket with suitable flexible hose and check that there is no leakage. (Applicable to 2001–L/3 only)
- 4.06 Mount the arc lamphouse on the pedestals and align the arc with the optical centre line of the projector. Follow the lamp manufacturers handbook instructions in assigning the relative positioning of the arc and film gate to obtain the optimum light coverage and intensity for all formats of film
- 4.07 Using the Allen Cap Screws provided mount the Upper Spool Box or Plate on to the Projector. This may be either:

) 2022-A Upper Spool Box 18" Dia. 2028-A Upper Spool Box 24" Dia.

or 2) 2028—A Upper Spool Box 24" Dia or 3) 2897—A Upper Spool Box Arm Assy.

If Zippa change-over units are being used these are located using the rear Allen Cap Screw. Refer to LSO 10094 in the drawings section of this book.

5. ADJUSTMENT OF THE PROJECTION EQUIPMENT

- 5.01 Lubricate the projector as follows:-
 - (a) Remove the filling cap from the intermittent and with the special pump type oiler provided, fill the intermittent housing with 2009-A oil up to the mark on the observation window taking meticulous care to ensure that no foreign bodies can enter the housing to damage the cross and pin movement. Replace the filling cap screw.
 - (b) Lubricate each pair of gears at the rear of the projector with a light smear of 32081-A Grease.
 - (c) Lubricate the projector vertical shaft and intermittent carriage slides with a smear of 32082-A Grease to ensure smooth framing control and freedom from fretting.

- (d) Apply a few drops of 2009-A Oil to each oil cup and any sintered or plain bearing surfaces and wipe away any surplus.
- (e) Should the angle of projection exceed 10^o negative it may be necessary to reduce the intermittent oil level to avoid seepage from the intermittent bearings.
- 5.02 Check that all power units, motors, etc, are connected for the voltage of the mains supply.

Check that all fuses are correct for the voltage of the mains supply. (See Section 13).

Check that the drive motor slow start resistor is not so great as to increase the start time to more than about 2 seconds. It is important to note that the drive motor is fitted with a starting winding which is cut out with a centrifugal switch at approximately 1,000 RPM. The rating of the starting winding is based on a short acceleration time, hence there is a risk of burning out the winding if the slow start resistor is set for such a value as to delay the opening of the centrifugal switch more than about 2 seconds. In the particular case of the 1/4 HP-33242-A Motor assembly the unit is being well under-run so that the factor of safety against damage to the starting winding is considerably improved enabling a 6 + 4 ohm, slow start resistance to be used on a 240V supply, or 2 ohm on a 115V supply.

5.03 Take-up is provided by an adjustable friction clutch, the setting of which should provide a film tension not exceeding 40 oz., at the commencement of the wind. To avoid breakage of film, the 26" diameter film spools should have an 8" diameter centre or 5" for a 17" diameter spool. The breaking strain of 35mm film is approximately 40 oz.

The clutch should be adjusted by the spring retaining nut. Do not attempt to use spools with 2" diameter centres, as the take-up speed will be too slow, and loops will form and damage the film.

- 5.04 Switch on the motor by the pedestal control box and observe that the drive motor is running anti-clockwise when viewed from the operators position and the take-up shaft is running clockwise. If this is not so make the necessary wiring correction as indicated on the motors.
- **5.05** Run the Projector without film for 30 minutes and ensure that the mechanism runs freely, without undue noise and is free from overheating.
- 5.06 Lower the intermittent assembly by means of the framing control to its lowest position. Temporarily remove the aperture plate from the 35mm gate assembly. Close the intermittent sprocket pad arm assembly into position, adjusting the shoes so that they just meet the intermittent sprocket when closed. Insert the lens into the lens sleeve with or without eccentric or concentric adapter and align it with the optical centre of the picture frame.

Lace, project and focus a picture with a 35mm standard target film on to an unmasked screen. Rotate the pedestal to centralise the picture and tilt the projector so that the lower edge of the picture is set at a level acceptable to the exhibitor and local authority. It is now general practice to use a common base line for all film formats raising and lowering the top mask to compensate. Mark on the screen with black adhesive tape the four corners of the 35mm picture.

5.07 Substitute a CinemaScope (Photo sound) target film for the standard film, and insert the assigned backing lens. Check that the vertical centre line of the standard & CinemaScope pictures are for all practical purposes the same. It is not uncommon to accept any small discrepancy in picture location, crop the projected picture so that the horizontal centre line appears to remain the same.

- 5.08 For CinemaScope presentation a 32050 anamorphic lens mount must be fitted and optically aligned with the CinemaScope backing lens. Insert the anamorphic lens which should be located as close as practicable to the backing lens or with the specified clearance indicated in the makers' instructions. Project the CinemaScope target film, focus with the backing lens only, then swing the anamorphic lens into line. Rotate and move the anamorphic lens as is required to obtain satisfactory definition over the whole of the picture area and to de-anamorphozise the film image. In the event that a prismatic anamorphic lens is to be used a 31943 mount may replace the 32050 mount. The 32050 mount caters for an 80mm diameter cylindrical anamorphic lens.
- 5.09 Proceed to finalise the size and shape of the aperture plates for which purpose the following tools are recommended:-

1 - 4" File

Second Cut

1 – 6" File

Warding Bastard Cut

1 - 14 cm File

Stubbs Needle No.2. Cut

2 - 14 cm File

Stubbs Needle Barrett No.4. Cut

2 - 14 cm File

Stubbs Needle Three Square No.2. Cut

1 - 77232 (Filing Jig)

1 - Straight Edge

1 - Scriber

It should be noted that with a magnification which may range from 200 to 600, .001" at the aperture plate, may be inches at the screen and particularly in the horizontal plane when anamorphic lenses are being used.

Before cutting the aperture plates, it must be remembered that the aperture plate is not in exactly the same plane as the film and will not, therefore be in focus when the picture image is at its sharpest. If however, the aperture plates are cut to focus sharply a few inches inside the 35mm film screen marking tapes, the aperture plate will focus softly to cover the film frame image when the picture is in optimum focus.

If the aperture plates are finally chamfered to present a sharp edge nearest to the film the projected edges will be better defined.

It is recommended that the top edge of the standard and CinemaScope aperture plates (bottom edge of picture) be first filed to line up with the lower edge, black masking tape referred to under 5.06, and the follow with the remaining sides. When cutting the CinemaScope aperture plate rack the lower edge of the picture to line up with that marked on the screen for the standard picture.

6. SETTING UP THE 2003-E PHOTOGRAPHIC SOUND TRACK REPRODUCER

- 6.01 Plug the 81292 exciter lamp bracket complete with KSE-6243 lamp into the left-hand compartment of the 2003-E Photo Reproducer Set.
- 6.02 See that the 2550-A Photo-voltaic Cell is fitted into the housing forming part of the 2027-B Collector lens assembly and if necessary binding the outer edges only of the cell with black adhesive plastic tape to prevent the egress of stray interference light.

- 6.03 Connect the 2550-A Cell terminals to the terminal block in the right hand compartment of the 2003-E Reproducer from whence LD-5511 screened cable is taken to the 5009 amplifier system. (Note the cable screen must be insulated from ground at the reproducer).
- 6.04 Check that the scanning drum runs smoothly and freely with no bearing noise or judder and no excessive end play. Make sure that the end surface of the scanning drum facing the operator is free of dirt, packing material, film emulsion or paint which might cause interference by reflection or random obstruction of the scanning light beam.
- 6.05 Check the damper system, that the movement of the arms is free and unrestricted except by the assigned limiting features forming part of the damper arm assembly itself. Remove the dashpot, thoroughly clean the inside and wipe the plunger. Fill the dashpot with F2 Silicone fluid and gradually and carefully replace the dashpot to avoid losing fluid. Lock in position.
- 6.06 Under running condition the 35mm film tension between the lower sprocket of the projector and the 2003 pull through/hold back sprocket should be approx. 300 grams, and the spring between the upper and lower damper arms is set to provide this tension. A marker plate is fitted to indicate when the tension is correct. If the indicator shows the spacing between rollers to be slightly out, careful rotational adjustment of the toothed rubber belt driven sprocket on the projector will make the necessary correction. The tension of the grounding spring should be such as to centralise the damper arm rollers about the scanning drum when running film.
- 6.07 Ensure that the scanning drum flywheel is firmly locked on its shaft.
- 6.08 Set the exciter lamp current by means of the adjustable resistor on the 33230-A Power Units (In the 2886-D) to approximately 3.0 amperes.
- 6.09 Ensure complete and even light scanning beam coverage of the 35mm film photo sound track area by adjusting the height and side to side location of the exciter lamp with the ring and knurled headed screw.
- 6.10 Before shipment the optical scanning lens system will have been set up for optimum azimuth and focus but it may be necessary to adjust the horizontal scanning of the film to avoid sprocket hole or frame noise pick up which can be corrected by loosening the screw retaining the upper damper arm roller shaft and screwing the shaft to move the flanged roller inwards or outwards, as required to obtain symmetrical scanning of the sound track. Should a large amount of adjustment be found necessary, it may mean some correction of azimuth and focus.

If the reproducer is one which does not incorporate the manual controls of azimuth and focus, a clamping spanner can be used to make field adjustment easier.

7. SETTING UP THE 5009-A SINGLE TRACK AMPLIFIER SYSTEM

- 7.01 It is assumed that with the aid of drawing D, the reproducers, amplifiers and loudspeakers have been correctly connected up.
- 7.02 In all probability the assembly will be shipped with its pluggable items removed and it is therefore necessary to ensure that printed circuit cards and transformers are in the correct sockets as indicated on drawing G. The 5009-A catering for photographic reproduction will have all but 2 sections filled. Two printed circuit cards 33224-A and two transformers 33214-A for magnetic reproduction will be omitted.
- 7.03 Three points in the system permit adjustments of gain. See drawing LSR.15720.
 - 1. In the pre-amplifier section, by individual machine balancing potentiometers.
 - 2. By the master fader. (Normally set at about Mark 6.)
 - 3. By trimpot in the 33223-A Power Amplifier.

To establish a provisional setting for (1) and (3) above proceed as follows:

Set the balancing potentiometers so that a standard constant level photographic 400 or 1000 Hz test film gives an output into the master fader of approx. –10db. (A convenient point for measurement is across the input terminals to the remote fader. – Load with 600 ohms and turn the fader control switch to "Remote").

With the master fader on Mark 6, set the output level by means of the 33223-A trimpot to the auditorium loudspeakers (8 ohms) for 1.5 watts using the same source of input.

Make a test reproduction of say the P35T8 (ASTR5) Photo test reel and finalise the pre-amplifier balancing control settings for a satisfactory listening level. In the event that balancing or level adjustment is not practicable within the control limits of the balancing potentiometers, adjust the gain of the 33223-A Main-amplifier with its trimpot. It should be expected that some finalising adjustment will be necessary as constant tone test films are not necessarily recorded to have identical output levels.

Later versions of the 5009—A Amplifier are equipped with 33591—A Photo Pre—Amplifier Cards with facilities for frequency characteristic adjustment. RV 1 (Treble) and RV 2 (Bass) are multi turn pre-set pots.

- RV 1 Controls Treble response over the range +12 db. to -16 db. at 10 Khz relative to 1 Khz. Zero mid point, total travel 25 turns. To increase Treble turn anticlockwise, to decrease turn clockwise.
- RV 2 Controls Bass response over the range + 4db. to 3 db. at 50 Hz. relative to 1 Khz. Other details as for RV 1.

As shipped the characteristic approximates to 'Academy' curve.

Viewed from the front RV 1. is in the upper position on the card.

7.04 Proceed to set the projection room monitoring level by first adjusting the monitor volume control to be mid position or just above and then raising or lowering the gain of the 33223-A Monitor amplifier by means of its trimpot. Any further control of gain made necessary by large differences in film recorded level should be easily covered by the monitor volume control itself.

8. SETTING UP THE 5010 - A or B and 5013 - A or B AUDITORIUM STAGE LOUDSPEAKER

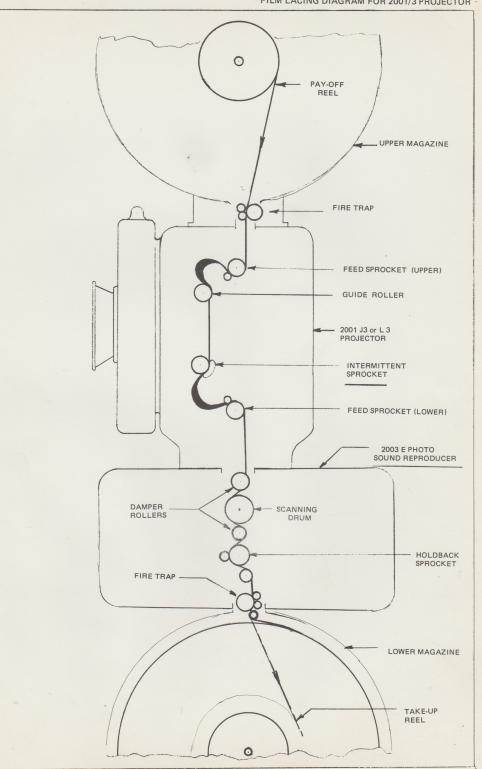
- 8.01 One Loudspeaker assembly only is generally required for a single channel system set centrally behind the screen, within the upper and lower edges of the picture.
- 8.02 For satisfactory distribution of sound, the HF horn only needs to be tilted or flared, and for this purpose a Dexion horn support kit is supplied.
- 8.03 The 12 ohm 31772-C, 675-Hz cross-over network is generally mounted on the rear section of the LF enclosure, and provisionally the HF attenuator should be set for the maximum loss of 4db. The final HF/LF balance must be determined by listening.
- 8.04 It is strongly recommended that the 5010-A loudspeaker system, where possible is used for backstage purposes, but the 5013-A can be used, if the available backstage area is insufficient to accommodate the 5010-A assembly.
- 8.04 If the shape of the auditorium requires a single channel system to use two 5010-A or 5013-A Loudspeaker assemblies, the inputs to the networks can be connected in parallel, with a noticeable increase in volume for the same amplifier output. It is essential to ensure that both loudspeaker assemblies are connected and operate in phase with each other.

9. 5022 A AND B DISC REPRODUCERS

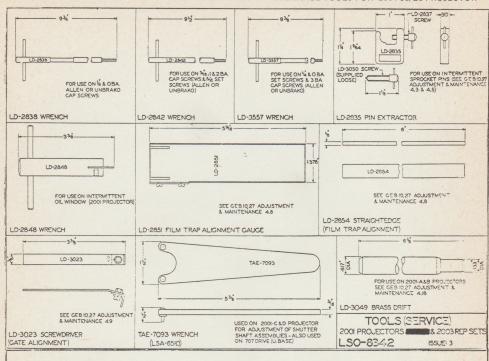
- 9.01 The 5022—A version incorporates a pre-amplifier and power unit. The output impedance is 600 ohms to match the AUX position on the 5009—A amplifier. The bass characteristic can be modified to suit local requirements by adjustment of RV 2. As shipped this control is set to mid position.
- 9.02 The 5022—B version has no pre-amplifier. The output impedance is 30 ohms. The unit is intended to be used in one projector situations where use is made of the otherwise redundant photo pre-amplifier channel of the 5009—A Amplifier. A 5008—A Control provides the necessary Film/Disc change-over facilities.

10. FINALISING TESTS

- 10.01 Run both projectors with any available odd reels of photographic tack film for at least half an hour to ensure that the mechanical details are turning freely.
- 10.02 Check the speed of both projectors under full load conditions with a tachometer applied to the 360 RPM driven sprocket shaft of the 2003-E reproducer. Adjustment can be made by temporarily removing the motor retaining clamps from the motor cradle, lifting the motor free, temporarily removing the ring nut on the 42051 or 42052 pulley and removing or adding discs between the 'V' flange details to effectively increase or decrease the diameter of the driving pulley. Make sure that the spacing between the 'V' flanges are similar and clamp up tightly. The spacing discs are laminated with very thin material to enable close control to be obtained. It may be necessary to re-check the speed of the machines after say two weeks operational service. Apart from achieving near correct speed the first essential is that both machines shall run at the same speed to avoid any obvious change of sound pitch at changeover.
- 10.03 With a power level indicator meter connected across the single track main amplifier output, check the photographic sound track response with an approved multi-frequency test film, that it conforms to the characteristic required by the particular auditorium and backstage loudspeaker system being used. The characteristic required is that which provides the most satisfying listening response from a SMPTE, P35-T3 test film or an equivalent known first class recorded film.
 - The final characteristic and set up condition for measurement should be recorded and attached to the inside of the main amplifier unit, for future reference.
- 10.04 Check with a picture target test film that there is no observable unsteadiness of the picture and that the overall focus is satisfactory. SMPTE R P 40 is a suitable film for this purpose.
- 10.05 Check to ensure there is no picture ghosting.
- 10.06 Check that a full reel of film can be catisfactorily and smoothly taken up.
- 10.07 Check to ensure that no further adjustment to the tilt or flare of the stage loudspeaker is necessary to achieve the best possible sound distribution.



SUGGESTED DEPOT MAINTENANCE TOOLS FOR 2001 J3/L3 PROJECTOR



11. INSTALLATION TOOLS

LSD. 55774 Set of Tools Including :

LSD, 64307 Wrench LSD, 69688 Wrench LSD. 63269 Wrench .05" A/F Wrench Allen 1/16" A/F Wrench Allen 5/64" A/F Wrench Allen 3/32" A/F Wrench Allen 5/32" A/F Wrench Allen 3/16" A/F Wrench Allen 2 7/32" A/F Wrench Allen 5/16" A/F Wrench Allen 1/8" A/F Wrench Allen LSD. 68290 Key Wrench LSD. 68291 Key Wrench 3/8" A/F Wrench Allen

12. RECOMMENDED LUBRICANTS

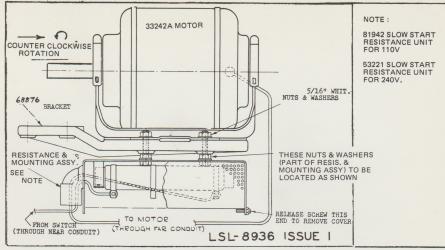
2009—A Oil 32081—A Ragosin Grease 32082—A Keenomax Grease

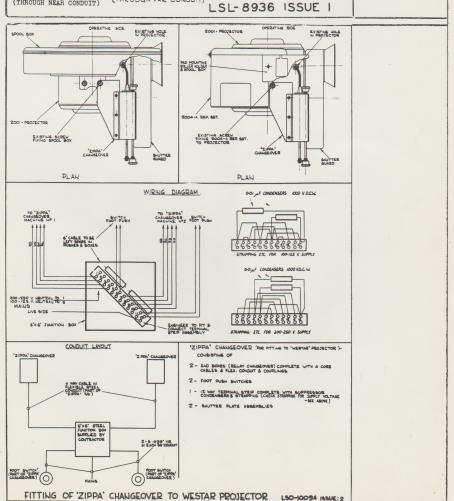
13. TABLE OF FUSE RATINGS

LSD. 52977	Fuse A/S	1 A. (2886 P.U. 240 V. Operation)
LSD. 53718	Fuse A/S	2 A. (2886 P.U. 110 V. Operation)
LD8135	Fuse A/S	250 ma (5009 Amplifier)
LSD. 52978	Fuse A/S	1.5 A. (5009 Amplifier)
LSD. 40896	Fuse Min.	2.5 A. (5009 Amplifier)
LSD. 40291	Fuse Min.	250 ma (5009 Amplifier)

14. SET OF EXPENDABLE SPARES

110V	240V			1	2
				Mach.	Mach.
X	X	KSE-6243	Ex Lp.	3	4
25.70	×	LD-5196	Neon Lamp 240V. (5009 Amp)	2	2
×		LD-7766	Neon Lamp 110V (5009 Amp)	2	2
×	×	LD-8836	Ind. Lamp 28V (5009 Amp)	4	4
	X	LSD. 52977	Fuse 1A A/S (2886 P.U.)	6	6
×		LSD. 53718	Fuse 2A A/S (2886 P.U.)	6	6
X	×	LD-8135	Fuse 250 mh A/S (5009 Amp)	3	3
×	×	LSD, 52978	Fuse 1.5A A/S (5009 Amp)	3	3
×	×	LSD. 40896	Fuse 2.5A MIN (5009 Amp)	3	3
×	×	LSD. 40291	Fuse 250 MA MIN (5009 Amp)	3	3
X	×	LSD. 55214	Toothed Belt	2	2
X	×	LSD. 74756	'V' Belt	2	4
		2550-A	Photo-voltaic cell	1	1
×	×	LD-9649	C/O Relay (5009 Amp)	1	1
×	×	LSD. 74024	Take-up Belt (For 18" Spool Box)	1	2
×	×	LD. 10993	Fuses 2A (Threading Lamp)	4	6
×	1	LD- 1986	Threading Lp.	2	4
	×	LD- 6063	Threading Lp.	2	4
		F2	Silicone Fluid	1 oz	2 ozs
		2009-A	Oil	1 qt	1 qt
-73		32081-A	Ragosin Grease	1 tube	1 tube
		32082-A	Keenomax Grease	1 tin	1 tin
The second second		LSD, 51472	Belt (For 24" or larger Spool Box)	1	2





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15. ESSENTIAL DRAWINGS FOR THE INSTALLATION OF A WESTREX 2000 PROJECTION & SOUND SYSTEM

LSR. 15712 Typical Projection room conduit layout

and contractors cabling information

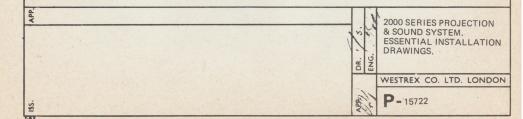
LSR. 15721 System Wiring Diagram

LSO. 15713 Projector overall dimensions and location

LSR. I5720 System Schematic (2 wire)

LSO. 15724 5010-A L.F. Loudspeaker Enclosure Assembly

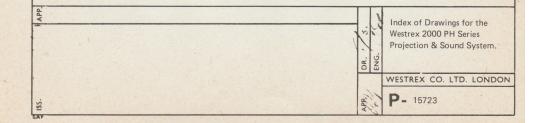
LSD. 84229 5009—A Amplifier System Assembly

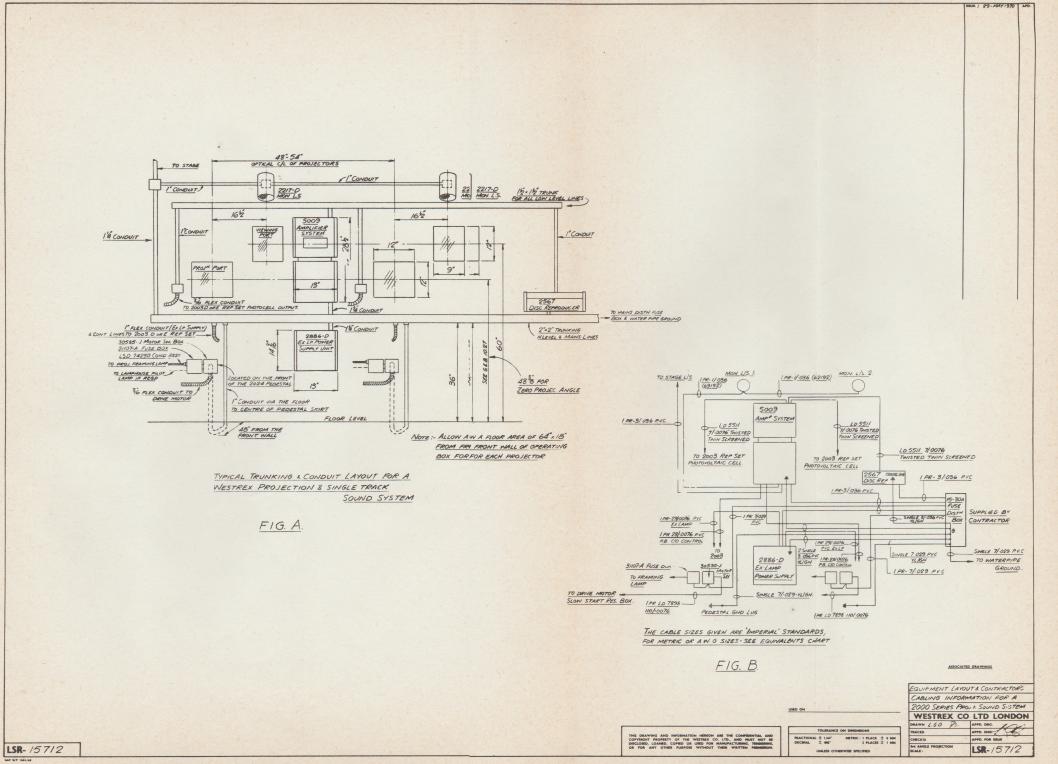


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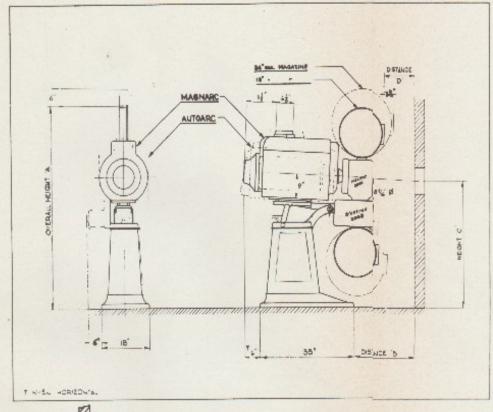
INDEX OF DRAWINGS FOR THE WESTREX 2000 PH SERIES PROJECTION & SOUND SYSTEM

2000PH System	Sch.	LSR 15720
5009-A Amplifier Assy.	Sch.	see the above
5009 " "	W.D.	LSO 14239
5009 " "	SL	P 14473
33223-A Power Amplifier	Sch.	LSO 14170
33223 " "	W.D.	LSO 14212
33223 " "	SL	P. 14575
84217 Bracket	SL	P. 14578
(Part of 33223-A)		
33226-A PCC	SL	P. 14596
(Part of 33223-A)-		
33224-B Pre-Amp (Photo)	Sch	LSL 14234
33224 " "	SL	P. 14587
33224 " "	Assv	LSD. 95410
33225—A Line Amp	Sch.	LSL14235
33225 " "	SL	P. 14593
33225 " "	Assy.	LSD 95411
33227—A Control Chassis	W.D.	LSR 14172
33227 " "	S.L.	P. 14599
95519 Mains Control Panel	S'L	P. 14623
(Part of 33245—A)	32	1, 14023
2886–D Ex.Lp. P.U.Assy,	Sch.	LSL 15400
2886 " " " "	W.D.	LSL 15399
2886 " " " "	SL.	P. 15396
33230-A Ex. Lp. P.U.	Sch.	LSL. 14176
33230 " " "	W.D.	LSD.14180
33230 " " "	SL.	P. 14608
31772—C Network	Sch.	LSA. 8605
5010-A, B, C or D	SL.	P. 14479
Stage L.S.System	OL.	1.14475
5013–A or B	SL.	P. 14497
Stage L.S. System	OL.	1.14407
2217-D Monitor Loudspeaker	SL.	P. 14711
2567-E, F, G or H. Disc. Rep.	Sch.	LSO 14250
2567–E, F, G or H " "	W.D.	LSO 14250
2567–E, F, G or H " "	SL.	P. 14539
32959—F Disc TT Unit	SL.	P. 14566
(Part of 2567)	SE.	F. 14500
32252—D Amplifier (Part of 2567)	Sch.	LSL 14248
32252 " " " 2567)	SL.	P. 14659
5007-A or B Drive Motor Assy,	W.D.	LSO, 14883
5007 — A or B	SL	P. 14458
3007 —A 01 B	SL	r. 14458









PROJECTION	DVERALL	DISTANCE	B 26	DISPANO	E'B'+24"	DISTANC	E "B' > 22
ALGLE	HEGH" 'K		DISTALTE		DETALLOS		
NA.	Life dia . m	,C,	'D'	.c	0	101	D.
+5*	75	5144	16 12	\$ 16	14/2	51	(2/2
+4*	74%	50%	16	501/2	14	50%	12
+30	74-84	50	513	50	13/2	49 %	III/a
+2*	741/2	491/2	15	4936	13	49 4	1
+10	74%	48%	1454	48%	1256	6534	10.6%
0*	74.54	48%	14%	48%	12.46	48%	101/4
- 0	74	47%	13%	47 %	1154	47%	9%
-2"	7874	47	1316	47%	11/6	47%	914
- 50	78/2	46%b	1239	46/4	10/8	46 %	8/2
-4°	731/4	45%	12	46	10	46 1/8	8
- 5"	75	4516	111/2	46 12	91/2	45%	7/2
- 6"	72%	44%	11	44%	9	45 /4	7
- 7*	72%	44	ICH2	44%	872	445%	6/2
- 80	72%	43%	10	43%	8	44%	6
- 90	72.6	427%	912	43%	7/2	43%	5/2
-10"	71%	42%	9	42%	7	43	5
-110	71%	41 %	8%	42%	4%	42.2	4%
-12"	71%	414	6	413/6	6	42	6
-13°	刀油	40Fb	7%	4.14	51/2	41/2	31/2
- 40	70%	40	7	40%	5	41	8
- 15"	70%	39%	650	40	45%	40 iz	256
- 16°	70%	38%	616	39%	4 1/0	4C	2 /6
- 179	6976	30/4	3%	3876	332		
-18"	6=1/2	37 %	514	3814	3/4		
- 193	4914	87	476	37%	27/6		
-20°	68%	36%	414	37 %	256		
-2.*	68%	347/6	4	36 %	2		100
- 22"	6816	3514	366		1		
- 25"	67%	3446	519			-	1
- 260	6739	P8 %	236				
	ATION OF B			REP SET	FORWARD)		
			E '8'-30				
- 25*	65.5%	3114	5 %	1			
- 26"	6514	501/4	3/2	1			
- 270	64%	2934	3	MIG	MENSION	S AREIN	40455
- 28°	64%	29	23/4	1	TO NEAR	EST 1/a	
-29"	63%	25 1/8	212				
- 50°	6314	271/4	21/2				
+ NORMAL		-		_	-	15179	

HE PHOTO CELL LEADS CONDUIT 2550-A PHOTO MENCATE SCREEN No mare Care M.K. CO. PUSH BUTTON NO CONDUIT - INC. 7/076 COMPUT-EXLE-THIN SCREENED AND CAD. LEADS 30535-J Morok Sw. 31107-A Fuse Box. IMP29/0076 HVC (OWNEDL 5009) LSD 8/942 SLOW MANIS CABLES START RES. BOX. WHENE FOR MIL LSD 74950 FRAMINE % CONDUIT MOTOR. YAR 28/0076 A.C. (Ex.LR. 2886-D) CAMP CONDUIT ASSY. WIRING FOR M. 2-Hamminhamminhammin

THE ABOVE DIMENSIONS APPLY :-WHEN A MES'AR 2024K PEDESTA. IS USED.

FIG C

INSTALLATION CHART

2000 SERIES PROJECTOR WITH MAGNAC OR AUTOARC, 18" OR 24" MAGAZINES

WESTERN ELECTRIC COMPANY LTD. LONDON DRN : EK. TROD .: CHED LIGHT PROJECTION

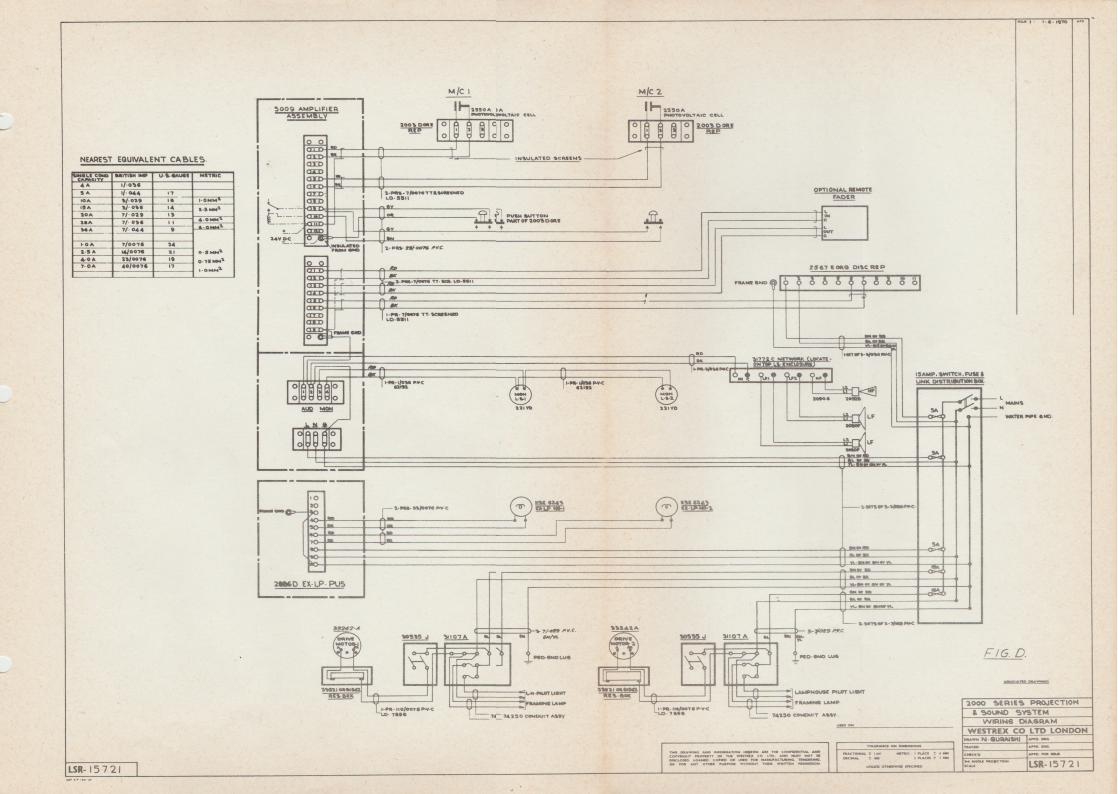
APPO DEFTO : 17 APPD ENGR - X4

LSO-15713 SCALE 1/18

LSO-15713

FLEXIBLE CONDUIT LAYOUT OF 2000 SERIES PROJECTOR VIEWED FROM NON OPERATING SIDE OF M/C.

INTERNAL JIRING OF 2003 D ORE REP SET.



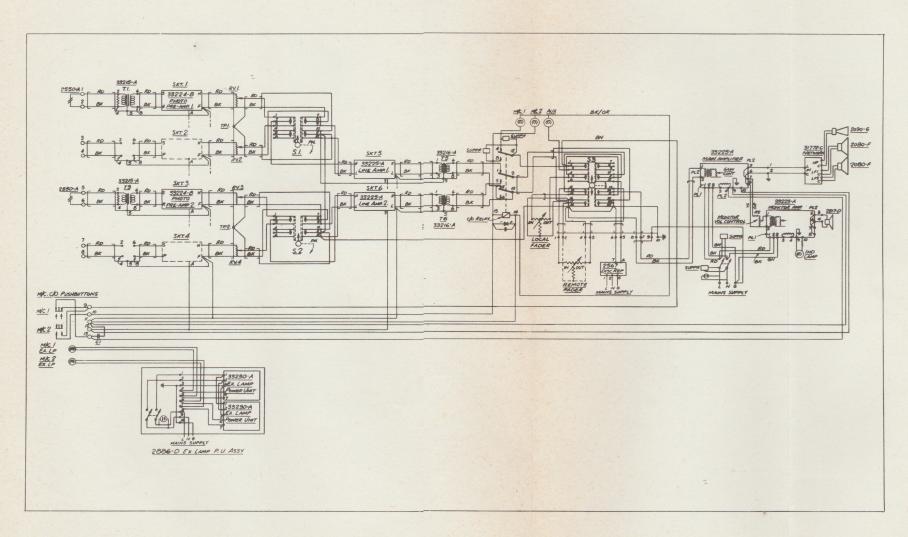


FIG. E.

ASSOCIATED DRAWINGS

ISSUE / 298/MAY /970 APD.

2000 SERIES PROJECTION &
SOUND SYSTEM (2 LINE)
SCHEMATIC
WESTREX CO LTD LONDON
BRANTO LCO / 3 APPO BBG.

DRAFFE CO LTD LONDON
DRAFFE CO LTD LONDON
TRACED APPD. BIG.
ORICKYD APPD. FOR BISE.

APPD. FOR BISE.

LSR-/5720

LSR-/5720

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LSR-15720

Westrex 2000 Series Projection and Sound Systems

(Single Track Photographic only)

MAINTENANCE INFORMATION (including Spare Parts Lists)

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Sub-Section

1.	General
2.	2001 Projector, including : Anamorphic Lens Mount
3.	2022/3 or 2028/9 Upper and Lower Film Magazines (for 17" & 22" diameter spools)
4.	2024 Pedestals
5.	2003 Photographic Sound Track Reproducer
6.	33242—A Drive Motor Assembly
7.	5009 Single Track Amplifier System
8.	Extension Fader Unit
9.	5010/13 Stage Loudspeaker Systems
0.	5022 Disc Reproduction Unit

1. GENERAL

1.01 The essence of good maintenance is that it should be preventive. A primary essential is regular cleaning, checking and inspection to ensure that screws remain tight, no undue wear becomes apparent, and that lubrication is regular and properly applied. From time to time it may be necessary to dismantle parts of the equipment. The following information gives guidance in such matters.

1.02 LUBRICATION

Lubricants—the following lubricants must be used.

2009-A Oil for the general lubrication of the mechanism (including the intermittent case) as specified below.

33290-A Oil for the intermittent case only. SAE 20/30, alternative to 2009 under certain operating conditions.

32081-A Grease for gears only. (Ragosine 500).

32082-A Anti-fretting Grease for certain shafts and sliding surfaces (Keenomax).

Do not oil or grease with the projector running.

Ball bearings are filled with grease before shipment and should require no additional lubrication. It is necessary to ensure that dirty oil does not enter the bearings but if this should happen, wash out the bearings with a solvent (NOT Carbon Tetrachloride) and repack with 'Spherol S' grease.

Oil impregnated bearings are used for the main film sprocket shafts and should only require occasional replenishment with 2009-A Oil.

Lubricants are selected for typical ambient temperature operating conditions.

1.03 INTERMITTENT

Maintain the oil level in the intermittent case assembly to the mark indicated in the window. Use the special pump type oiler (part of the Installation Kit) to avoid the injection into the intermittent of foreign bodies, which would damage the cross and pin movement.

1.04 GEARS

Lubricate each pair of gears in the rear of the projector with 32081-A Grease, as is seen to be necessary.

1.05 VERTICAL SHAFT

Lubricate the vertical shaft and intermittent slides with 32082-A Grease as required to ensure smooth framing control and freedom from fretting.

1.06 The following lubrication routine should be followed:—

EACH DAY

Check intermittent oil level and oil intermittent outrigger bearing. Check grease on vertical shaft and intermittent slides. Replenish if necessary.

TWICE A WEEK

Apply a few drops of 2009-A Oil to each oil cup and sintered bearing.

ONCE A WEEK

After cleaning apply a drop of 2009-A Oil to the fire shutter bearing, the framing and focusing assemblies, the gate hinges and the pad roller assemblies.

2. 2001 PROJECTOR

2.01 TO TIME THE SHUTTER

Remove the viewing window from the shutter guard. Turn the projector by hand until the intermittent has moved by 45° or two 35mm sprocket teeth from its stationary position. If the shutter is correctly timed, the notch in the shutter blade edge should now be exactly opposite the alignment mark on the guard. If it is not, adjust the shutter phasing control by the knob at the front of the projector.

If the shutter phasing control requires considerable adjustment bringing it near one end of its travel, re-centralise the control and proceed as follows. Loosen the clamping screws in the shutter boss, and rotate the shutter until the notch and the alignment mark are in register. Re-tighten the shutter boss screws, making sure that the shutter is as far away from the arc lamp as possible without fouling the guard. Check the shutter timing by running a film; it should be possible to eliminate any travel ghost by careful adjustment of the shutter phasing knob.

2.02 TO ADJUST THE FILM GATE SIDE GUIDES

The side guides for the film are factory-set to be very slightly wider than the top width limit of film (Ref.PH22.102). However, it may eventually be necessary to replace them due to wear. Care should be taken to ensure that the spacing is correct and that the guide edges are parallel to the normal motion of the film. The expandable guide roller above the gate shoes should be set so that the inside of the fixed flange is in precise alignment with the film guide in contact with the reference edge of the film.

2.03 TO ADJUST GATE FILM TENSION (FOR FLAT GATES)

Film tension can be adjusted by the knurled nuts which compress the coiled springs on the swinging part of the gate. The correct tension is that required to just stabilise the vertical movement of the projected picture. Gate tension is usually expressed as the pull required to move the film through the closed gate—a typical setting would require a pull of between 8 and 15 ozs. (226.4 to 425.25 grammes.)

2.04 TO ADJUST THE SHOE PRESSURE

The shoe pressure on both edges of the film should be similar. Two adjustable tensioning devices are provided to ensure that the pressure at the top and bottom of the shoes is the same. To ascertain whether adequate balance has been achieved, use a pressure type spring balance set in turn against the four extremities of the shoes. If the shoes are covered on the rubbing surfaces with marking ink, and a short length of film run through the gate, the pattern of the abrasive effect of the film on the ink will show if there are any points of excessive pressure.

2.05 FRAMING

A film frame line is observable by the framing light shining above and behind the gate.

2.06 TO REMOVE THE INTERMITTENT

The intermittent cross and pin assembly has been tested by many hours of continuous running before being installed in the projector, but in time increasing noise or unsteadiness of the picture may necessitate the removal of the assembly.

Remove the flywheel. Lower the intermittent carriage to within $\frac{1}{16}$ " of its lowest position. Remove the film gate and the intermittent film sprocket pad assembly. To avoid damage to the intermittent film sprocket teeth, the film sprocket should also be removed. Loosen the four screws holding the intermittent on the operational side of the projector. Turn the intermittent clockwise until the notches in the intermittent casing are in line with the heads of the loosened retaining screws, then gently withdraw the assembly.

Do not attempt internal repairs or adjustments to the intermittent.

2.07 TO REPLACE THE INTERMITTENT

Set the shutter timing adjustment in the rear of the projector to a mid-way position. Loosen the carriage stop screw. Lower the intermittent carriage to within $\frac{1}{16}$ of its lowest position. Remove the film gate and intermittent pad arm assembly. Remove the shutter guard window by pressing in and sliding upwards. Rotate the mechanism by hand until the notch in the shutter blade is in line with the fixed mark. Remove the intermittent flywheel and rotate the drive gear of the intermittent in a forward direction until the film sprocket has turned by exactly two sprocket teeth. The hole for the flywheel retaining screw will now be in a vertical position.

Insert the intermittent so that the 4 retaining screw heads pass through the notches. Turn the intermittent counter-clockwise so that its gear meshes with the driving gear on the vertical shaft. Continue turning the intermittent until these two gears press lightly together with no backlash. Gently tighten two diametrically opposite retaining screws. Push the carriage stop plate against the stop and tighten the retaining screw. Now loosen the two intermittent retaining screws previously tightened, and turn the intermittent clockwise to give $\frac{3}{64}$ clearance between stop plate and stop. Tighten in diametrical sequence all four retaining screws to hold the intermittent in this position. Replace the intermittent flywheel, making sure that its screw is tight. Remove the oiling screw on the front face of the intermittent casing and fill to the mark indicated on the window with approved oil. If it has been removed, replace the film sprocket, and fit the appropriate intermittent pad arm assembly.

2.08 91895 SINGLE LENS HOLDER

This lens holder is bored to 2.975" diameter, the centre of which is concentric with the picture area of a CinemaScope 4 track magnetic film. For all picture formats, adaptors are required as follows:—

Standard or CinemaScope photo track films.	77247	(.03" Eccentricity) Lens barrel dia. 2.785" (70mm)
Standard or CinemaScope photo track films.	77247 & 77419	(.03" Eccentricity) Lens barrel dia. 2.062" (52 mm)
CinemaScope 4 track.	77249	(Concentric) Lens barrel dia. 2.785" (70mm)
CinemaScope 4 track.	77249 & 77419	(Concentric) Lens barrel dia. 2.062" (52mm)
Front Support for extra	91897	
long lens.		Lens barrel dia. 2.785" (70mm)

2.09 PAD ROLLER ARM ADJUSTMENTS

The pad arm assemblies must be set up in the closed position by means of the screws provided, so that they just grip 2 thicknesses of film without any tendency to lift the rollers or pads. A larger gap is liable to cause film run-off and damage.

Because of the continuous opening and closing of the pad arm assemblies, a regular check should be made to ensure that there is no excess clearance or any slackening in the detent action which would require immediate attention. A pad arm supporting shaft location which results in the pads fully entering their detent position will ultimately result in variable pad/sprocket clearance and possible film damage.

2.10 INTERMITTENT SPROCKET SHOE ASSEMBLY

To adjust the shoe assembly loosen the set screw gripping the shaft and turn the shaft until the shoe just makes contact with the sprocket with little or no pressure. A fine adjustment can be made with the knurled nut, although the setting is not critical. If the shoes are set too close the picture may tend to jump on the passage of a film joint.

2.11 AUTO FIRE SHUTTER

The Auto Fire Shutter is normally set for correct operation before shipment. It should clear the light path when the projector is running and obstruct it as the machine slows down to a stationary state. This optimum condition is achieved by loosening the Allen screw holding the governor bob weight assembly on the vertical drive shaft so that it can be raised or lowered as required before re-tightening the Allen screw. Adjustment can also be effected by moving the shutter in relation to its counter weight, but care should be taken if adjustment is made to this relationship to ensure that the action is not adversely affected.

2.12 SHUTTER SHAFT

It is essential that the mesh between the vertical shaft steel gear and the shutter shaft plastic gear be set to the optimum position for minimum noise and wear. The shutter shaft is biased by a spring at the shutter end of the shaft, and the bearing at the opposite end is free to move horizontally in its housing. By this means, starting shock is absorbed, and noise generated by mechanical coupling with the intermittent unit becomes almost inaudible.

Should it become necessary to adjust the mesh between the gears, proceed as follows:—

- Loosen the two Allen screws holding the eccentric ring mount of the forward horizontal shaft bearing (next to the gear).
- 2. Rotate the eccentric to a position which gives play of $\frac{1}{16}''$ to $\frac{1}{6}''$ at the tip of the shutter blade.
- 3. Tighten the eccentric retaining screws and seal with wax.

2.13 VERTICAL SHAFT DRIVE ASSEMBLY

In the event that it is necessary to change any of the gears associated with the main drive or film sprockets, care must be taken to set the meshing of the gears with the correct amount of backlash movement. It should be possible to feel the backlash between each pair of gears, but no more. Grease the gears with 32081-A Ragosine 500, and the vertical shaft with 32082-A Keenomax. The latter is provided to prevent fretting (a dark brown stain) appearing from the ball bearings, shafts, etc., which results from vibration and indicates unnecessary wear. Keenomax should also be used on the intermittent frame slides. It will be observed that clearances are in places quite small when the intermittent is racked up and down. It is important that the screws provided for a particular use be replaced in the same position. Alignment of the vertical shaft bearings is achieved with appropriate shims placed between the bearing housing brackets and the machined surfaces of the inside of the projector main casting.

2.14 APERTURE PLATES

If, from time to time, it is necessary to modify the apertures, new plates 77498 with a key hole can be obtained which must be opened out in the manner described in the 'Installation Section'.

2.15 32050-A ANAMORPHIC LENS ATTACHMENTS

The 2001 type projector specified for CinemaScope projection will be equipped with a 32050 Mount as shown in LSO 9942 to which an adaptor will be fitted to match the particular type of anamorphic lens selected.

Adaptors available are:-

92077 for a P type Anamorphic Lens or Varamorph.

LSO 9749 Clamp assembly for 80mm diameter *Cylindrical* anamorphs, i.e. lenses including, Galileo, Zeiss or C3 Kiptar which do not screw into the backing lens.

LSO 9753 Support for anamorphic lenses which screws into the backing lens. Instruction for aligning the lens are given in the Installation Section.

Alignment tools 28374 & 91815 may be a worthwhile acquisition to a service depot.

2.16 PICTURE CHANGEOVER DEVICE

The 2001 type projector caters for the fitting of Zippa Changeover units in the manner shown on LSO 10094. The units are foot-switch operated from a 115 or 240 VAC supply and can, in an emergency, be manually closed or opened.

2.17 PROJECTOR MAINTENANCE TOOLS

Recommendation is made that tools generally as illustrated in drawing LSO 8342 should be available to a service depot.

3. 2022/3 or 2028/9 UPPER & LOWER FILM MAGAZINES

The 2022/3 type magazines cater for 17" spools and the 2028/9 type magazines cater for 22" spools. The shaft diameters are $\frac{5}{16}$ " but 68588 adaptors can be provided for $\frac{3}{8}$ " diameter shafts (Kalee spools).

It is only necessary to ensure that no undue wear is taking place in the bearings and on the shafts, and the holdback and take-up clutches operate smoothly to avoid snatch. Check that the take-up holdback tensions set by adjustment of the spring retaining nuts cannot exceed 40 ozs. (the breaking strain of the film) under any circumstances of operation. Of equal importance, ensure that the film tension is not less than about 10 ozs. to obtain a reasonably tight wind when the take-up spool is reaching maximum diameter. From time to time adjust the take-up drive belt tension by the jockey pulley to avoid slippage.

4. 2024-K & S PEDESTAL

Apart from wear and tear of motor switch which may ultimately require replacement, no particular sub-assembly should need special attention. It is important to ensure that, if fuses are removed for inspection, they are re-inserted in the same holders from which they were taken. Check the stability of the pedestal and if necessary adjust the levelling screws. Acoustic isolating pads for installation between the levelling screws and the floor are obtainable against an order.

5. 2003 PHOTOGRAPHIC SOUND TRACK REPRODUCER

The primary requirement with the 2003 Reproducer is to ensure that the scanning and damper arm details move smoothly and freely without interference or slackness, to maintain the lowest possible 'wow and flutter'. The scanning drum and shaft assembly must be treated with care to maintain its concentricity. Keep dirt out of the bearings and ensure that the flywheel is tight on its shaft. The photographic track response is affected very markedly by any dust or oil on the optical details, which result in 'woolly' sound. It is vital that oil is kept away from the lenses, and that the lenses are dusted occasionally with a small camel hair paint brush or transparency cleaning brush.

From time to time, check that the exciter lamp bulb is not unduly darkening, or the filament sagging, causing a loss of volume and a poorer signal to noise ratio. Lamps should be changed before they burn out. Do not forget to have a spare lamp and holder correctly set up in case of emergency.

The surface of the 2550-A Cell should be kept free of dust and oil, for which occasional inspection should be made.

Clean out the dashpot and replenish with F2 Fluid as is found to be necessary.

6. 33242-A DRIVE MOTOR ASSEMBLY

This motor is capable of operation from a 115V 60Hz or 240V 50Hz single phase supply and is fitted with a 42051 (50Hz) or 42052 (60Hz) Adjustable 'V' Belt Drive Pulley.

The 42051 and 2 pulley incorporates LD.10102 and LD.10103 'Laminum' Washers respectively each $\frac{1}{32}$ " thick but built up of .002" laminations. Laminations may be removed or added to adjust the projector speed. Both washers must consist of the same number of laminations, to ensure that the drive is equally shared between the two 'V' belts and the lock nut must be firmly tightened particularly if the machine will be expected to run in reverse.

To provide a measure of control of the starting time, a series resistance unit is supplied to fit on the underside of the LSD.68876 Motor Bracket. These units are coded 81942 for 115V operation and 53221 for 240V operation.

Check from time to time to see that there is no tendency to overheat, allowing for the fact that, by design, motors now run much hotter than a few years ago.

Adjust the belt tension to avoid slippage and wear, but not too tight to damage the motor and driving shaft bearings. If necessary clean the belts to remove any oil which may be the cause of slippage. Check and adjust the film speed. Ensure that both belts are sharing the load.

If at any time as a result of an emergency a replacement motor is to be fitted, the direction of rotation should be checked before mounting on the machine. The motor should run counter clockwise when viewed from the shaft end.

Any attempt to set the series resistance for an acceleration period of more than 2 seconds will probably result in the burning out of the starting winding and possibly damage to the internally mounted centrifugal switch.

Note: Later versions of the 2024 K Pedestal have the Motor Start Resistor fitted inside instead of on the Motor Bracket.

7. 5009-A SINGLE TRACK PHOTOGRAPHIC REPRODUCTION AMPLIFIER SYSTEM

The above system incorporates amplifiers having Silicon Transistors capable of satisfactory operation in ambient temperatures up to 55° C., and in consequence there is little likelihood of a breakdown in any part of the circuit.

To provide additional factors of safety, printed circuit cards and transformers are of the plug-in type for easy interchange. Complete amplifiers are interchangeable on plugs, and the power amplifiers are protected against accidental short circuit or open circuit of the output. A short circuit blows the fuse on the power amplifier printed circuit card. Partly due to the use of transistors, and partly due to the extended frequency response of the amplifier systems, the possibility of radio or mains-borne interference is somewhat greater than with an older type valve system. However, by careful design, optimum location of grounding points and the provision of a first class low impedance ground connection for the system, such problems will be avoided and no interference will adversely affect the outstanding signal to noise ratio obtainable.

The overall response of the amplifier system should be tested at regular intervals with appropriate test films. From these it should be seen that the characteristic for photographic track reproduction should be maintained in near agreement with the characteristics set up during commissioning. Generally the response curve will roll off at the higher frequencies for photographic reproduction to reduce noise from marked or damaged prints. The determining HF end point is controlled by the gap width of the photo-track optical system. A compromise must however be accepted between frequency response and acceptable signal to noise ratio, and experience indicates that this condition has been achieved with the Westrex 5009-A sound system.

8. 33027-A EXTENSION FADER (Optional)

This unit houses a volume control.

Maintenance should not be necessary apart from ensuring that the terminal screws, etc. remain tight. If a fanning strip has been used in wiring, it should be remembered that the strip can still be held firmly in position although one or more terminal screws remain inadequately tightened.

9. 5010/5013 STAGE LOUDSPEAKER SYSTEMS

These are high efficienty duplex loudspeaker systems employing separate HF and LF Units operating through a 31772—type 675 Hz cross over network. An adjustable attenuator is connected in the HF Loudspeaker line to obtain satisfactory balance and an emergency switch connects the system output to the LF Units only.

These loudspeaker systems require little maintenance, except to ensure that the screw terminals on the network and the bolts holding together the sections of the LF enclosure have not been loosened by vibration, and that dust is not obstructing the diaphragm movement, so causing sound distortion.

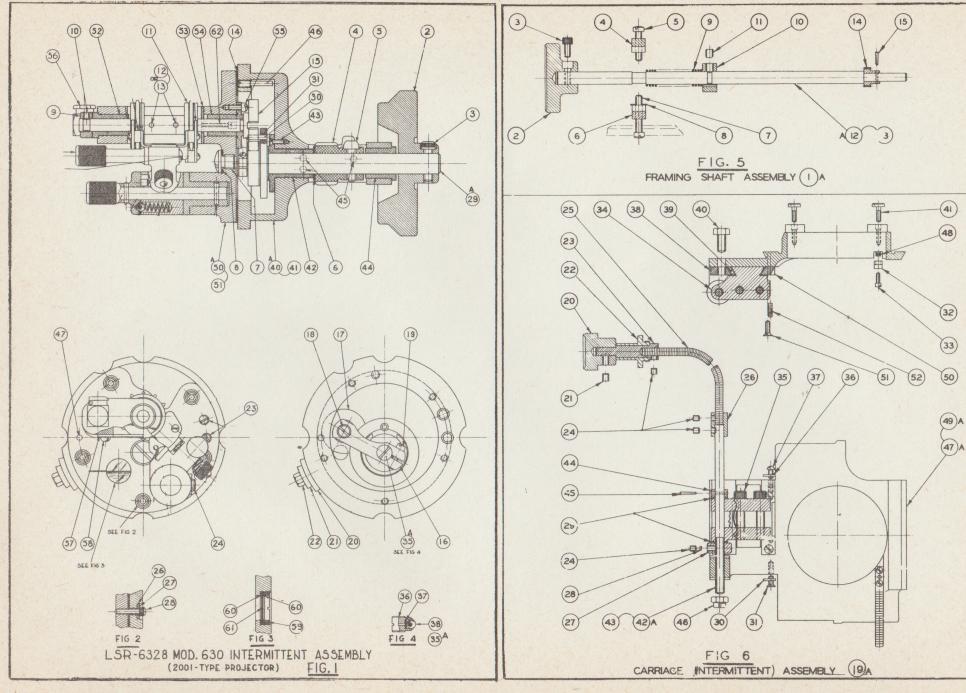
10. 2886-D EXCITER LAMP, POWER SUPPLY UNIT

This assembly incorporates two power units, one for each projector and each capable of supplying up to 8V 4ADC. The power units are individually fused but are connected to the mains by a common switch.

Apart from keeping the unit internally clean, little maintenance should be required except possibly to check, from time to time that the supply to lamps is balanced and at the value established at the time of commissioning the system.

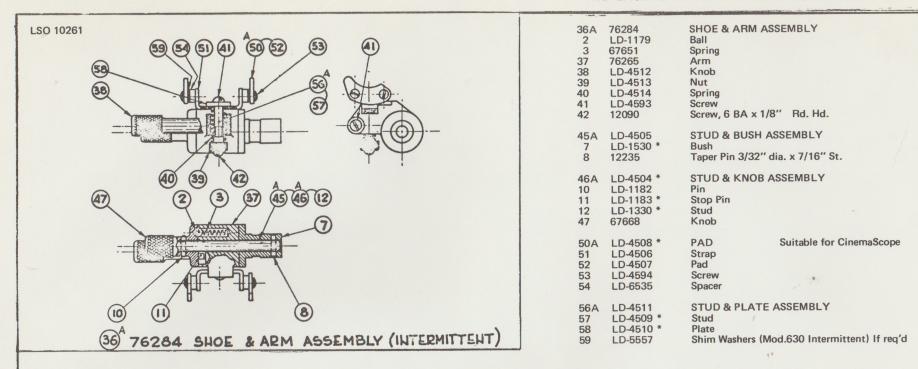
11. 5022-A & B DISC REPRODUCER

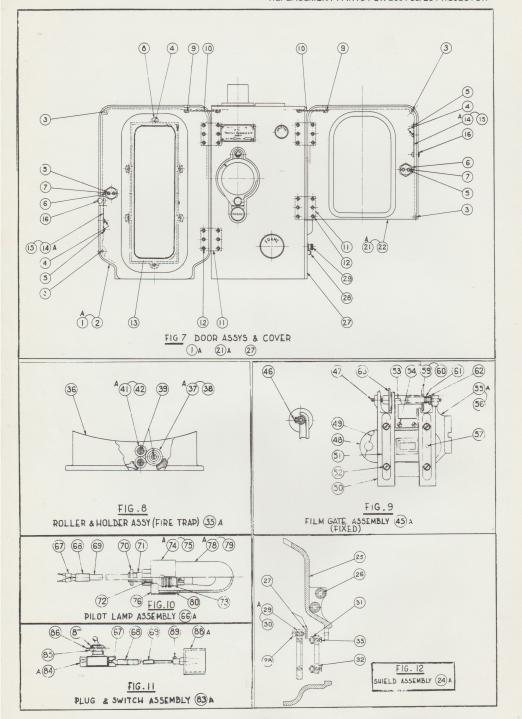
To maintain this unit, it is simply necessary to keep it clean, and from time to time check, and if necessary adjust, the frequency characteristics using a test disc. Examine the stylus wear with a magnifier, and if necessary replace. There is no virtue in allowing a worn stylus to damage expensive records.



SHEET 1 of 15

REF	CODE	ITEM	QTY	REF	CODE	ITEM	QTY
1A 2 3 4 5 6 7 8 9 10 11 12 14 15	LSR-6328 Mod. 630 73984 12195 90472 ID-2699 ID-1316 ID-1314 ID-1311 12209 42779 ID-1312 73983 84557 ID-1303 ID-1303	FIG. 1 (INCL. FIGS. 2, 3, 4) INTERMITTENT ASSEMBLY Flywheel Screw, 2 BA x 3/4" Allen Cap Gear Screw Washer Screw Washer Collar Set Screw. 6 BA x 1/8" Allen Fl. Pt. Sprocket CW Item 12 Taper Pin Gasket Cross Bracket	1 1 1 1 1 1 1 1 2 1 2 2 1 1 1 1 1 1 1 1	1A 2 3 4 5 6 7 8 9 10 11	90479 73998 12185 67865 12218 67864 12219 ID=2807 67863 ID=1361 12214	FIG. 5 SHAFT (FRAMING) ASSEMBLY Knob Screw, 2BA x 3/8" Allen Cap Clamp Screw, 2BA x 7/8" Fil. Hd. Clamp Screw, 2BA x 1-1/8" Fil. Hd. Washer Spring Collar Screw, OBA x 1/4" Allen Fl. Pt. Shaft Assembly Shaft	111111111111111111111111111111111111111
17 18 19 20 21 22 23 24 26 27 28 29 30 31	LD-1304 LD-1302 LD-1301 67837 LD-1305 12327 LD-1310 12214 LD-1307 LD-1308 12196 84558 67838 * LD-1317* LD-1327 67840 *	Spacer Screw Screw Plate Plate Plate Screw, 4BA x 1/2" Hex. Hd. Screw Set Screw, 0 BA x 1/4" Allen Fl. Pt. Washer (soft copper) Washer (steel) Screw, 4 BA x 1/2" Allen Cap Cam Assembly Pin Plug Bearing (Thrust) Assembly (Fig. 4) Bearing	111111111111111111111111111111111111111	13 14 15 19A 20 21 22 23 24 25 26	73999 ID-1362 12337 80915 74008 11196 ID-1390 67883 11597 74009 ID-1391 ID-4461	Gear Taper Pin, 3/32" x 3/8" lg. Std. FIG. 6 CARRIAGE (INTERMITTENT) ASSEMBLY Knob Screw, 2BA x 1/4" Allen Set Cup. Pt. Bush Shaft Screw, 2BA x 3/16" Allen Set Cup Pt. Shaft (Flexible) Coupling Couling Collar	111115111
40A 41 42 43 44 45 46 47	ID-1328 * ID-1179 * 73985 * 90471 * 73986 * 12027 ID-1318 * ID-1319 * ID-1273 * 73987 * 90470 * 73989 * ID-4454 73988 * *	Disc Ball Case Assembly Case Bush Screw, 6 BA x 1/4" Csk. Hd. Bush Plug Pin Pin Cover Assembly Cover Bush Plate Bush	1113131311	27889901233456678990441	ID-4462 ID-1363 ID-3196 10165 ID-1378 10800 74007 12338 ID-1375 10162 ID-1379 ID-1542 12358 ID-1309	Plug Washer Stop Screw, 4BA x 5/16" Csk. Hd. Rack Screw, 6BA x 5/16" Ch. Hd. Bracket Screw, 1/4" - 20 x 1-1/4" Allen Cap Stop Screw, 4BA x 1/4" Rd. Hd. Guide Plate Spring Screw, 1/4" - 20 x 1/2" 1g. Hex. Hd. Screw	22111212111124
50A 51 552 553 555 556 557 558 560 61 62	ID-1326 ID-1325 50278 12090 ID-1322 ID-1323 ID-1324 ID-4455	Screw Oiler Stripper Screw, 6 BA x 1/8" Rd. Hd. Nut Washer Window Screw	1 2 1 2 1 3	42A 43 44 45	67873 67874 * ID-1373 * 12336	Screw Assembly Screw Collar Taper Pin, 3/32" x 1/2" 1g. Std. Nut	1 1 1 1 1 1
				47A 48 49A 50 51 52	69252 LD=1388 LSO=6342 LD=3199 * 11708 LD=3200 *	Carriage Assembly Pin Carriage Assembly Guide Plate Screw, 3BA x 7/16" Csk Hd. Pin	1 1 1 2 2





REF	CODE	ITEM	QTY
1A 2 3 4 5 6 7 8 9 10 11 12 13	LSO-8199 LSX-8198 LD-1139 12182 10422 73929 10461 LD-1140 LD-1175 67690 67665 10426 80941	FIG. 7 DOOR ASSEMBLY (OPERATING SIDE) Door Stop Screw, 4BA x 3/16" Cn. Hd. Lockwasher, 4BA Shkprf. Intl. Knob Screw, 4BA x 5/16" Rd. Hd. Clamp Screw Link Hinge Screw, 2BA x 1/4" Rd. Hd. Window	1 1 2 8 4 1 2 6 1 1 2 6 1
14A 15 16	- 1 / / -	Door Spring & Knob Assembly Spring Knob	1 1 1
21A 22 11 12 3 6 7 5 4 10 9	ISO-6554 ISO-6553 67665 10426 ID-1139 73929 10461 10422 12182 67690 ID-1175	DOOR ASSEMBLY (NON-OPERATING SIDE) Door Hinge Screw, 2BA x 1/4" Rd. Hd. Stop Knob Screw, 4BA x 5/16" Rd. Hd. Lockwasher, 4BA Shkprf. Intl. Screw, 4BA x 3/16" Ch. Hd. Link Screw	1 2 6 2 1 2 4 2 1 1
14A 15 16	67990 67991 * LD-1541 *	Door Spring & Knob Assembly Spring Knob	1 1 1
27 28 29	81051 LD-2351 LD-1579	Cover Clamp Screw	1 2 2

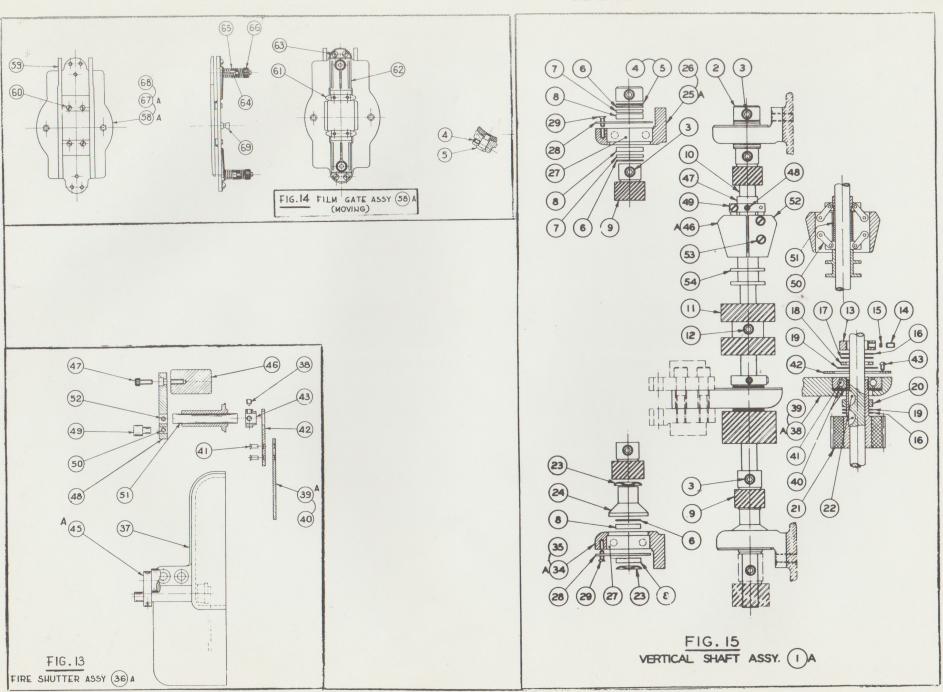
1	THE R. P. LEWIS CO., LANSING, MICH. 49-14009.			wide.
	24A 25 26 27 28	81961 91243 LD-1581 10136 10457	FIG. 12 SHIELD ASSEMBLY Shield Screw Washer, 4BA Screw, 4BA x 3/8" Ch. Hd.	1 1 2 6 3
	29A 30 31 32 33	51265 77207 LD-1580 51263 10360	Heat Shield Assembly Heat Shield (Rear) Spacer Heat Shield (Front) Screw, 4BA x 1/2" Csk, Hd.	1 1 4 1 4

REF	CODE	ITE:	QTY
35Å 36 37Å 38 39 41Å 42	74108 80909 69937 69936 ID-1400 69939 69938 ID-1400	FIG. 8 ROLLER & HOLDER ASSEMBLY (FIRE TRAP) Holder Roller (Large) Assembly Roller (Large) Screw Roller (Small) Assembly Roller (Small)	1 1 1 2 2 2 4

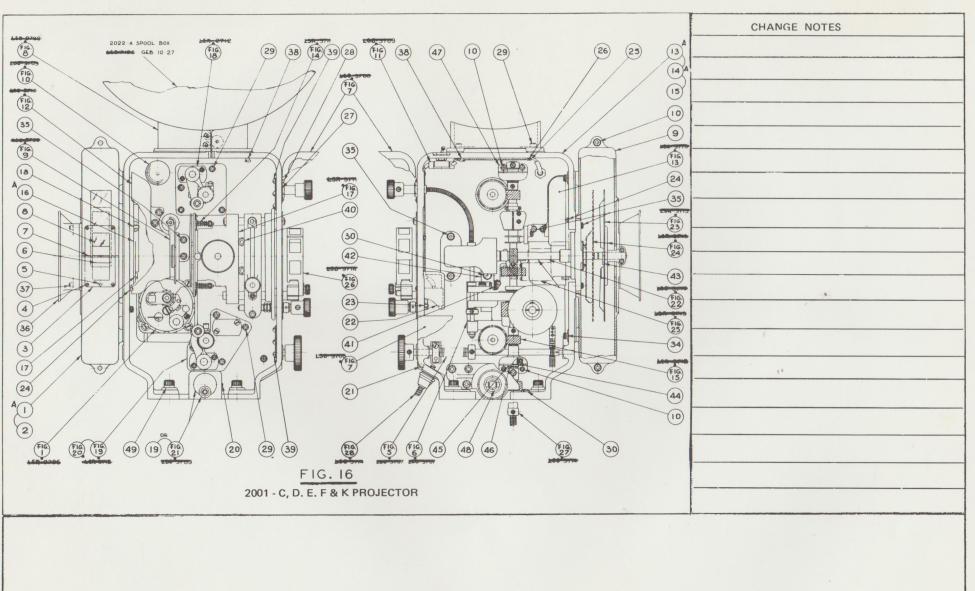
REF	CODE	ITEM	QTY
45A 46 47 48 49 50 51 52 53	90474 12216 ID-1352 ID-1349 77498 67852 67851 ID-1351 50374 10880	FIG. 9 FILM GATE ASSEMBLY (FIXED) Set Screw, 4BA x 1/4" Allen Fl. Pt. Pivot Retainer Aperture Plate Shoe Guide Screw Plate Screw, 6BA x 1/4" Csk. Hd.	1 2 2 1 1 2 2 4 1 2
55A 56 57	67854 90475 * LD-1355	Bracket & Stop Pin Assembly Bracket Pin	1 1 1
59A 60 61 62 63	67853 80911 LD-1354 LD-1353 80910	Guide Roller Assembly Roller Spring Nut Roller	1 1 1 1 1
66A 67 68 69 70 71 72 73	74860 65481 65483 LD-4499 LD-1918 LD-1919 LD-2522 LD-2413 LD-1921	FIG. 10 PILOT LAMP ASSEMBLY Sleeve Sleeve Cordage Nut Bush Bush Lampholder Holder Assembly	1 2 1 -1/2' 1 1 1 1
75 76 78A 79 80	ID-1917 * ID-1920 * ID-1922 67956 *	Holder Ring Glass Assembly Glass	1 1 1 1 1
83A 84A 85 86 87 66 88A	50437 60517 601107 1D-3813 61095 7 65481 8 65463 9 1D-4499 68382	Plug Assembly	1 1 1 1 1 2 1 -1/2' 1 1
89	10231	Screw, 6EA x 1/4" Rd. Hd. SHEET 5 of 15	4

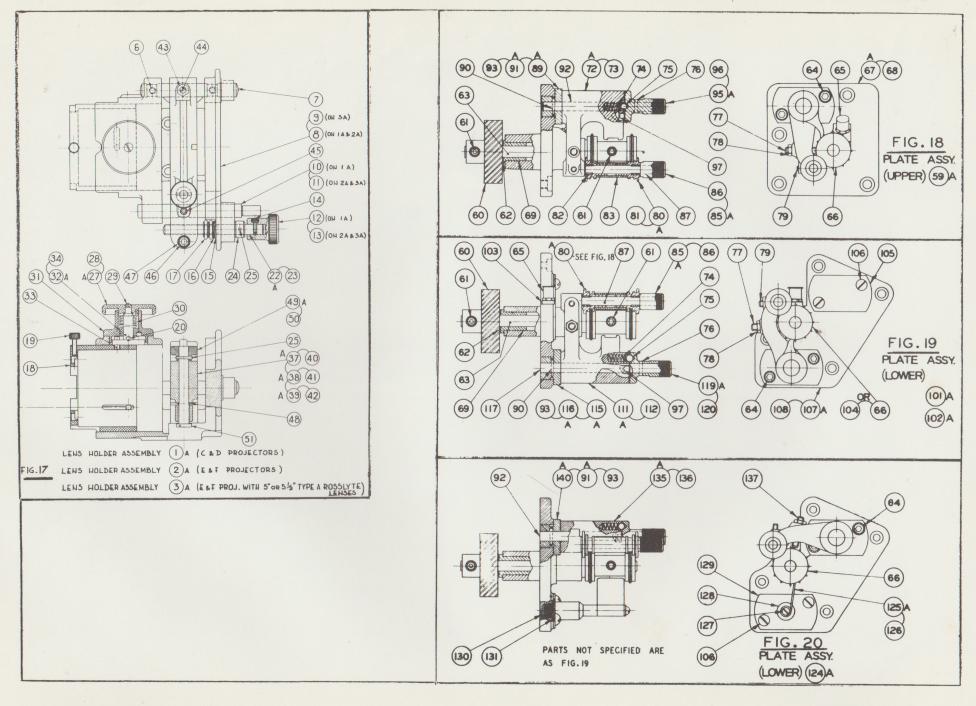
		FIG. 13				REF	CODE	ITEM	Q!
364 37 38 40 41 42 43 454 46 47 48 49 50 51 52	81963 80942 12237 76266 50281 * 12234 * 67997 * ID-1553 * 74112 ID-1555 12213 ID-1557 ID-1554 12190 ID-1556 12244	FIRE SHUTTER ASSEMBLY Bearing Set Screw, 4BA x 3/16" Allen 90° Cone Blade Assembly Blade Rivet, 1/8" x 1/4" Al. Csk. Arm Bush Arm & Shaft Assembly Block Screw, 4BA x 3/8" Allen Cap Arm Stud Set Screw, 4BA x 3/16" Allen Fl. Poshaft Set Screw, 4BA x 1/4" Allen 90° Cone	11	76779	Single Shutter	14 2 3 4 5 6 7 8 9 11 12 13 14 15 16 17 18 19 2 2 2 2 2 2 3 4 4 1 2 2 2 2 3 4 4 2 2 2 2 2 2 3 4 4 4 2 2 2 2	90515 67720 ID-2699 ID-5916 ID-1165 ID-1166 ID-1166 ID-1537 ID-1531 ID-1538 ID-1538 ID-1517 ID-1513 ID-1513 ID-1514 90513 ID-1540 ID-1644	VERTICAL SHAFT ASSEMBLY Collar Sorew Washer (Shim 0.005") Washer (Shim 0.010") Washer (Fibre) Washer Washer Gear Shaft Gear (Double Shutter Screw Nut Set Screw, 4PA x 1/8" Allen Cup Pt Plug Washer Springwasher	req
						25A 26 27 28 29	73946 67749 73899 ID-1213 ID-2154 10847	Bearing Bracket Assembly (Upper) Bracket Ball Bearing (1 Dot Fit) Plate Screw, 4BA x 1/4" Cak. Hd.	
						34A 35 27 28 29	67750 73902 LD-1213 LD-2154 10847	Bearing Bracket Assembly (Lower) Bracket Ball Bearing (1 Dot Fit) Plate Screw, 4BA x 1/4" Csk. Hd.	
8A 9 0	91267 <u>FIL</u> 51262 Pad	ew, 6BA x 1/8" Csk. Hd. 4				38A 39 40 41 42 13	67988 75071 LD-1518 LD-1536 LD-2332 10162	Bearing Assembly Bracket Washer (Seal) Ball Bearing (1 Dot Fit) Plate Screw, 4BA x 1/4" Rd. Hd.	
188	76296 12412 LD-4566 LD-4567 LD-4565 Nut	ew, 4BA x 1/8" Rd. Hd. 4 2 2 2 2 2 2 2 4 5 5 tud Assembly 1				46A 47 48 49 50 51 52 53	74106 67867 12236 67869 LD-1365 LD-1364 74001 67866	Governor Weight Assembly Holder (Upper) Set Screw, 4BA x 1/4" Allen Cup Pt. Screw (Pivot) Link Sleeve Weight Screw (Pivot) Holder (Lower)	

* NOTE - SINGLE SHUTTER VERTICAL SHAFT ASSY 51341 IDENTIAL EXCEPT FOR ITEM11



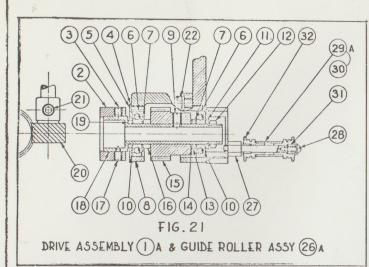
REF	CODE	ITEM	QTY
		FIG. 16 - KEY ASSEMBLY	
1A 2 3 4 5 6 7 8 9	90517 LSR-6388 67996 10231 LD-1552 67994 LD-1551 67995 LSR-6387 12230	Shutter Guard Assembly Shutter Guard (Fixed) Holder Screw, 6BA x 1/4" Rd. Hd. Pin Spring Pin Window Shutter Guard (Removable) Screw, 1/4" - 20 x 5/8" Allen Cap	1 1 1 1 1 1 2
13A FIG.8 FIG.10 FIG.11 14A 15 16A 17 18 19 20 21 22 23 24 25 26 27 28 29	LSO-8219 * 74108 74860 50437 LSXX-8159 * LSXX-8158 82344 12116 12158 50251 11400 11588 76369 10568 LD-1547 LD-2499 10162 50425 10072 11601 LD-1546 * LD-1550 * LD-1715 * LD-2469	Holder Assembly Pilot Lamp Assembly Pilog & Switch Assembly Main Frame Machining Main Frame Casting Shield Assembly Screw, 2BA x 1/4" Ch. Hd. Screw, 2BA x 5/8" Csk. Hd. Retainer Set Screw, 2BA x 3/8" Allen Cup Pt. Set Screw, 4BA x 1/4" Allen Cup Pt. Housing Screw, 4BA x 9/16" Rd. Hd. Screw Clamp Screw, 4BA x 1/4" Rd. Hd. Nameplate Screw, 6BA x 3/16" Rd. Hd. Screw, 2BA x 1/2" Allen Cap Pin (Dowel) Stop Pin (Dowel)	1111112111122441423122
34 35 36 37 29 38 39 40 41 42 30 10 43 44 45 46 47 48 49	LD-1175 10426 12465 LD-1389 67882	Screw, 1/4" - 20 x 3/4" Allen Cap Screw, 1/4" - 20 x 1/2" Allen Cap Hood Screw, 4BA x 1/2" Allen Cap Screw, 2BA x 1/2" Allen Cap Screw Screw, 2BA x 1/4" Rd. Hd. Screw, 1/4" - 20 x 7/16" Allen Cap - Large Head Spring Guide Plate Screw Screw, 1/4" - 20 x 5/8" Allen Cap Spring Washer Washer Springwasher Springwasher Springwasher Shim Shaft Screw, 3/8" - 16 x 1" Allen Cap for fixing Projector to 2002 Reproducer; for others see GEB	3 11 1 3 8 2 12 2 1 1 2 4 1 1 1 1 1 1 1 1 1 1 1 1





SHEET 10 of 15

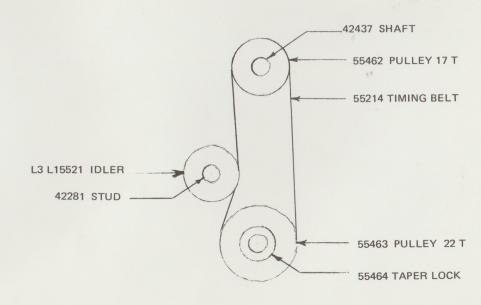
REF	CODE	ITEM	QTY	REF	CODE	ITEM	QTY	REF	CODE	ITEM QTY
1A 2A 3A	91247 91895	LENS HOLDER ASSEMBLY (C & D PROJ.) LENS HOLDER ASSEMBLY (J & L. PROJ.) LENS HOLDER ASSEMBLY (E & F. PROJ.)	1	67A 68 69	76200 81943 * LD-1441 *	Plate & Bush Assembly Plate Bush	1 1 2	85A 86 87	LD-1136 LD-1145 * LD-1162 *	Shaft & Knob Assembly 1 1 Shaft 1
3A 45678	91896 12421 LD-1383 12406 50220	FITTED WITH 5" OR 5-1/2" ROSSLYTE "A" LENSES) Set Screw, 2BA x 1/4" Allen Ov. Pt. Stud Set Screw, OBA x 1/2" Allen Cup Pt. Rod (Upper)	1 1 2 1	72A 73 74 75 76 77 78	76201 74103 67651 LD-1179 LD-1182 12232	Pad Roller Arm Assembly Arm Spring Ball Pin Set Screw, 2BA x 7/8" Allen Fl. Pt.	1 1 2 2 1 1	115A 90 116A 117 93	76214 12336 50234 * 50233 * 50229 *	Knob & Stud Assembly Taper Pin, 3/32" x 1/2" 1g. Std. St. Stud Assembly Stud Bracket
9 10 11	77250 77517 50221 51302 67879	Bracket (On 1A & 2A) Bracket (On 3A) Rod (Lower) (On 1A) Rod (Lower) (On 2A & 3A) Knob (Focus) (On 1A)	1 1 1 1 1 1	79 80A	10826 11400 LD-5562	Lockmut, 2BA Set Screw, 2BA x 3/8" Allen Cup Pt. Pad Roller Assembly	1 1 1	119A 120 97	50242 67669 * LD=1183 *	Knob Assembly Knob Pin
12 14 15 16	51380 12213 LD-1165	Screw, 4BA x 3/8" Allen Cap	1 1 1 1 1 1 1	81 82 83	73927 * LD-1200 * LD-1147 *	Roller Bush Tube	2 2 1	1244	91265	FIG. 20 PLATE ASSEMBLY (LOWER SPROCKET) 1
17 18 19	LD-2601 LD-1385 76198 LD-4401	washer (Spring) Nut Sleeve Screw	1	85A 86 87	LD-1136 LD-1145 * LD-1162 *	Shaft & Knob Assembly Knob Shaft	1 1 1	60 61 62 63	90516 12196 LD-4823 67992	Gear Screw, 4BA x 1/2" Allen Cap Shims Shaft As Req'd
20 21 22A 23	12244 12465 LD-1367 LD-1368 *	Set Screw, 4BA x 1/4" Allen 90° Cone Screw, 1/4" Whit x 7/16" Allen Cap Large Head (On 2A & 3A) Screw Assembly Screw	2 2 1 1	89A 90 91A 92 93	76203 12336 50231 * 50230 *	Knob & Stud Assembly Taper Pin, 3/32" x 1/2" lg. Std. St Stud Assembly Stud Bracket	1 1 1 1 1	103 65 66 106 64	LD-2348 LD-1186 77097 10426 12185	Collar Oil Cup Sprocket Screw, 2BA x 1/4" Rd. Ed. Screw, 2BA x 3/8" Allen Cap 2
23 24 25	LD-1369 * 10232 *	Collar Taper Pin, 7/64" x 5/8" lg. Std. St. Shaft & Knob Assembly	1	95A 96 97	50276 67984 * LD-1183 *	Knob Assembly Knob Pin	1 1 1	125A 126 127	50277 70238 62331	Stripper Assembly 1 Stripper 1 Screw 1
27A 28 29 30 31	74006 11345 LD-1376 67877	Knob Screw, 2BA x 3/8" Inst. Hd. Spring Sleeve	1 1 1 1			<u>FIG. 19</u> .	1	128 129 130 131	LD-4440 LD-4439 12215 10903	Stud Plate Screw, 1/4" - 20 x 1/2" Allen Cap Lockwasher, OBA Shkprf. Intl.
32A 33 34 37A 38A 38A 39A 40 41 42 43 44	67878 LD-1380 *	Shaft & Pin Assembly Pin Shaft Carrier Assembly (On IA) or - } Carrier Assembly (On IA) Carrier Assembly (On IA) Carrier Assembly (On IA) Carrier Assembly (On IA) Carrier (On IA)	1 1 1 1 1 1 1 1 1 1 2 2	101A 102A 60 61 62 63 103 65 66 104 105 106	91253 91960 90516 12196 LD-4823 67992 LD-2348 LD-1186 77097 77098 50249 10426 12185	PLATE ASSEMBLY (LOWER SPROCKET) PLATE ASSEMBLY (LOWER SPROCKET) Gear Screw, 4BA x 1/2" Allen Cap Shim Shaft Collar Oil Cup Sprocket (For 101A) Sprocket (For 102A) Plate Screw, 2BA x 1/4" Ad. Hd. Screw, 2BA x 3/8" Allen Cap	Req'd	107A 108 69 135A 136 74 75 76 137 78 79	96212 91240 # ID-1441 # 76231 74983 67651 ID-1179 ID-1182 12191 10826 11400	Plate & Bush Assembly Plate Bush Pad Roller Arm Assembly Arm Spring Ball Pin Set Screw, 2BA x 1st Allen Fl. Pt. Lockmut, 2BA Screw, 2dA x 3/8st Allen Cup Pt.
45 46 47 48	12214 12217 10026 LD-1386	Set Screw, OBA x 1/4" Allen Fl. Pt. Screw, OBA x 1" Allen Cap Lockwasher, OBA washer	1 1 1 1	107A 108 69	76212 91240 * LD-1441 *	Plate & Bush Assembly Plate Bush	1 1 2	80A 81 82 83	ID-5562 73927 * ID-1200 * ID-1147 *	Pad Roller Assembly 1 Roller 2 Bush 2 Tube 1
49A 50 25	67870 LD-1371 * 10232 67871 *	Knob Assembly Knob Taper Pin, 7/64" x 5/8" lg. Std. St. Screw	1 1 1 1	111A 112 74	76213 74105 67651	Pad Roller Arm Assembly Arm Spring	1 1 2	85 <u>A</u> 86 87	LD-1136 LD-1145 ** LD-1162 **	Shaft & Knob Assembly 1 1 Shaft 1 1
59▲ 60	91246 90516	PLATE ASSEMBLY (UPPER SPROCKET)	1 1	74 75 76 77 78 79	11400	Ball Pin Set Screw, 2BA x 7/8" Allen Fl. Pt. Lockmut, 2BA Set Screw, 2BA x 3/8" Allen Cup Pt.	1	90 91A 92 93	76232 12336 50231 * 50230 * 50229 *	
61 62 63 64 65 66	12196 LD-4823 67992 12185 LD-1186 77097	Screw, 4BA x 1/2" Allen Cap Shim Shaft Screw, 2BA x 3/8" Allen Cap Oil Cup Sprocket	2 leq'd 1 2 1	80A 81 82 83	LD-5562 73927 * LD-1200 * LD-1147 *	Pad Roller Arm Assymbly Roller Bush Tube	1 2 2 1	119A 120 97	50242 67669 ** LD-1183 **	Knob Assembly



NOTE :

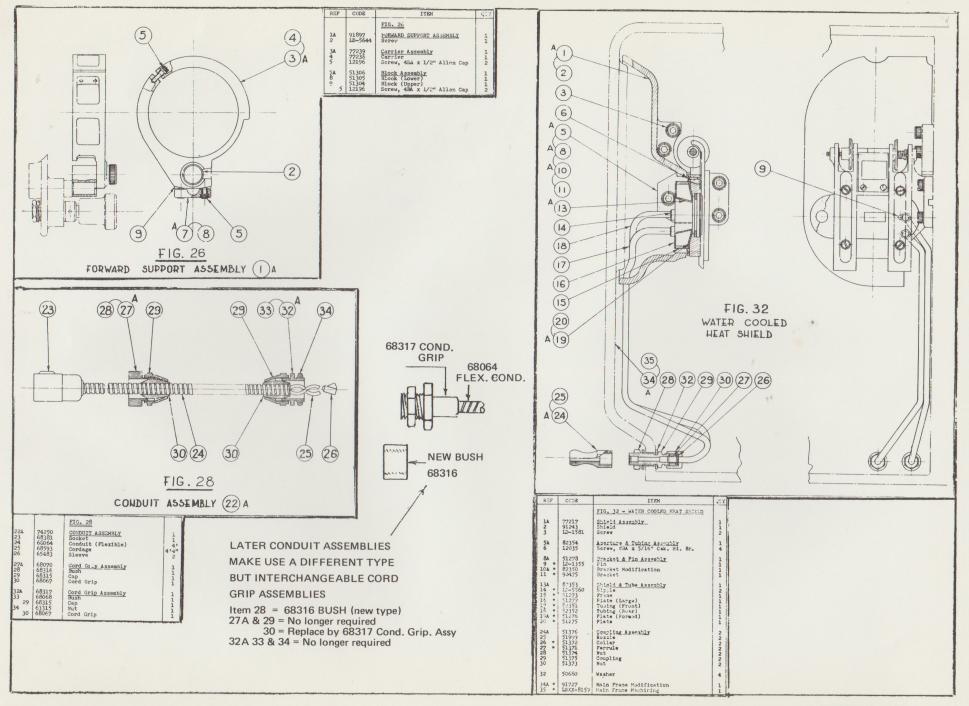
THE 91254 DRIVE ASSEMBLY HAS BEEN UPDATED TO ENABLE A SOLID SHAFT 42437 TO REPLACE DETAIL 2. 68007 COLLAR & DETAIL 18. 67884 SLEEVE.

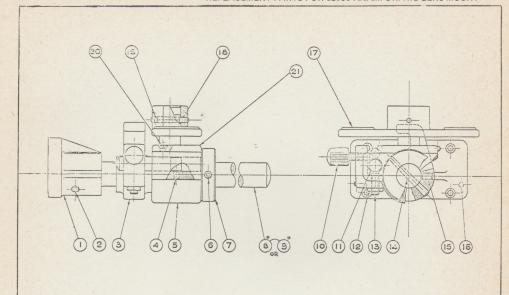
ALL 2001 J3 & L3 PROJECTOR HAVE BEEN SO MODIFIED FOR
THE FITTING OF A 55462 PULLEY REFER TO 2003 E REPLACEMENT
PARTS SHEET 3



DRIVE DETAILS 2003 E to 2001 J3 or L3

REF	CODE	ITEM	QTY			FIG. 23	
1A 234 56 78	91259 91242 50215 ID-1664 ID-1213	FIG. 22 SHUTTER SHAFT (SINGLE SHUTTER) Bearing Bracket Locknut Washer Bearing	1 1 2 2 1	54A 555 566 57 58 59 60 61 62	80938 80937 76280 10057 10422 11368 74098 10229 12211	SHUTTER BLADE (SINGLE) ASSEMBLY Blade (Shutter) Blade (Fan) Screw, 4BA x 3/16" Rd. Hd. Lockwasher, 4BA Shkprf. Intl. Lockmit, 4BA Hex. Hub Screw, 4BA x 1/4" Rd. Hd. Screw, 4BA x 5/8" Allen Cap	1 1 2 6 1 1 6 1 5 2
6	50222 11400	Collar Set Screw, 2BA x 3/8" Allen Cup Pt	1	REF	CODE	ITEM	QT
8 9 10 11 12 13 14 15 16 17 5 18 19	LD-4426 90472 LD-2699 LD-1529 11597 LD-1528 LD-1166 76247 74101 74099 LD-1213 LD-3087 10461	Spacer Gear Screw Collar Set Screw, 2BA x 3/16" Allen Cup F Spring Washer Shaft Bearing Bracket Assembly Bracket Ball Bearing Plate Screw, 4BA x 5/16" Rd, Hd.	1 1 1	1A 2 3 4 5 6 7 8 9 10 11 12 13 14 15	91264 91242 LD-1213 50222 11400 76247 50215 LD-1664 LD-4426 90472 LD-2699 LD-1529 11597 LD-1528	FIG. 25 SHUTTER SHAFT (DOUBLE SHUTTER) Bearing Bracket Ball Bearing Collar Set Screw, 2BA x 3/8" Allen Cup Pt. Shaft Lockmut Washer Spacer Gear Screw Collar Set Screw, 2BA x 3/16" Allen Cup Pt Spring	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
REF	CODE	ITEM QTY		15 16A	LD-1166 80961	Washer Bearing Bracket & Layshaft Assembly	, ,
65A 66667 688567 579 71A 6062 7261 5856657	80959 74204 12433 80962 10229 10422 76280 11368 80960 74098 12211 80963 10229 10422 76280 10057 11368	FIG. 24 SHUTTER BLADE, INNER (DOUBLE) Hub Screw, 4BA x 7/8" Allen Cap Blade (Shutter) Screw, 4BA x 1/4" Rd. Hd. Lockwasher, 4BA Shkprf. Intl. Blade (Fan) Screw, 4BA x 3/16" Rd. Hd. SCREW, 4BA x 5/8" Allen Cap Blade (Shutter) ASSEMBLY Hub Screw, 4BA x 5/8" Allen Cap Blade (Shutter) Screw, 4BA x 1/4" Rd. Hd. Lockwasher, 4BA Shkprf. Intl. Blade (Fan) Screw, 4BA x 3/16" Rd. Hd. Cockwasher, 4BA x 3/16" Rd. Hd. Cockwath, 4BA Hex. 6		3 17 18 19 20 21 223 24 25 26 10 27 28 29 30 31 228 23 32 33 34 35 36 37	LD-1213 12244 LD-12348 LD-1186 90533 LD-1538 LD-1635 LD-1620 11588 68025 90472 LD-2699 LD-1616 LD-1615 LD-1615 LD-1617 LD-1676 LD-1618 LD-2730 LD-1619 90532 90534 12215	Ball Bearing Set Screw, 4BA x 1/4" Allen 90° Con Collar Oilcup Gear Washer (Fibre) Washer Washer Collar Set Screw, 4BA x 1/4" Allen Cup Pt. Shaft Gear Screw Washer Washer Fibre) Washer Plate Screw, 6BA x 1/4" Rd. Hd. Ball Bearing Washer Collar Screw Spring Gear Bracket Screw, 1/4" - 20 x 1/2" Allen Cap	ne 3
				43A 44 45 46 47 48 49	74206 74205 LD-1518 LD-1536 LD-1666 LD-2694 10847	Bearing Bracket Assembly Bracket Washer (Seal) Ball Bearing Washer Plate Screw, 4BA x 1/4" Csk. Hd.	2



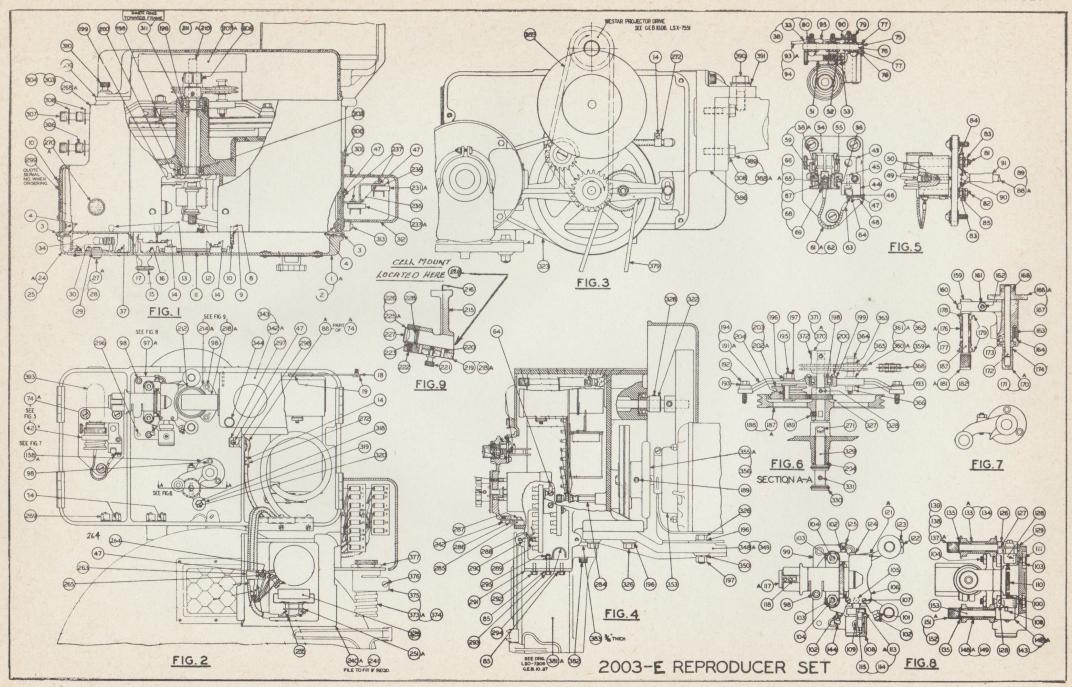


32050-A TO F MOUNTING ATTACHMENTS (ANAMORPH)

LSO-9942 |SSUE :1

REF CODE TIEM QTY	
1 91961 Support 2 11962 Set Screw, 1/4"-26 BSF x 1/4" Allen Cup Pt. 3 82521 Stop Arm 4 11196 Set Screw, 2BA x 1/4" Allen Cup Pt. 5 82519 Block 6 12481 Set Screw, 2BA x 1/2" Allen Cup Pt. 7 77830 Collar 8 77829 Shaft, Horizontal 10 51841 Screw 11 51842 Shaft 12 12491 Locknut, 1/4"-26 BSF Hex. St. Chrom. Pl. & Pol. 13 12385 Set Screw, 1/4"-26 BSF x 3/4" Allen Fl. Pt. 14 - Taper Pin, No.3 x 1-3/4" St. 15 12480 Set Screw, 1/4"-26 BSF x 3/8" Allen Cup Pt. 16 12457 Set Screw, 1/4"-26 BSF x 3/8" 16 12457 Set Screw, 2BA x 1/2" Allen Cup Pt. 17 82520 Bracket 18 - Taper Pin, No.3 x 1-1/4" St. 19 11400 Set Screw, 2BA x 3/8" Allen Cup Pt. 20 10797 Screw, 2BA x 3/8" Allen Cup Pt. 21 82522 Shaft, Vertical - 32050-A	32050A MOUNT IS APPLICABLE TO 2001 J/3 and L/3 PROJECTOR

Г	March State	ENTER CONTRACTOR AND THE REST	TES	Manager Company of the Company of th	REF	CODE	ITEM	QTY I	REF CODE	ITEM Q
		+ In the following Sto are additional to th they are listed and ordered. * I tems marked * are n			176 177 178 179	LD-1178 LD-1147 * LD-1200 * 73927 *	Pad Roller Tube Bush Roller	2 2	268 LSR-688	ON FRAME ASSEMBLY Item 10 4 4 7 8 85 8 198 199 1 200 206 265 66
RI	F CODE	able.		CODE ITEM QT	181 182 183	LD-1136 LD-1145 * LD-1162 *	Shaft & Knob Assembly Knob Shaft	1 1 1		" 198 1 " 199 1
F	1 81283 2 LSR-6423 3 67665 4 LD-1294	RIGHT DOOR ASSEMBLY (FIG.1) 1 1 1 1 1 1 1 1 1	88 688 89 619 90 716 91 654	304 Cord Assembly 1		LD-2562 81188 11920	PULLEY ASSEMBLY (FIG.6) Pulley 1/4" - 26 BSF x 5/16" Cup Pt.St.Set Screw	1	269 LD-1168 270 LD-1185 271 LD-1186 272 LD-1263	204 205 Catch Ventilator Oil Cup Clamp
1	8 LD-1748 1D-1749 10231 1 67691	4 4 4 4 5 5 5 6 6 7 7 7 7 7 7 7 7		Item 90 2 14 2	1195	81192 10311 + 10039 + 90793 68643	ARM ASSEMBLY (FIG.6) 1/4" - 20 Whit. x 1" Hex.Hd.St.Screw 1/4" whit. St. Washer Arm Stud	1 2 2 1 1		
	LD-1140 LD-1141 LD-1141 LD-1141 LD-1141 LD-1139	Strike 4BA x 1/4" Rd.Hd.St.Screw 6	101 LD-	3701 Stud 1 1 2 3 3 3 3 3 3 3 3 3	196 197 198 199 200	10285 11094 LD-1213 LD-2468 10098	5/16" whit. St. Washer 5/16" - 18 Whit.Hex.St.Nut Ball Bearing Plate 4BA x 3/8" Rd.Hd.St.Screw	1 1 1 3		
1	8 67690 9 LD-1175	Knob 48	105 686	1134	202 203 204	74755 74754 * LD-1138 *	Pulley Assembly Pulley Bushing	1 1	285 LD-2467 286 68755 287 10163	Strip Hinge 2BA x 1/2" Rd.Hd.St.Screw 1/16" Dia. x 5/8" St.Pin
2	74916	LEFT DOOR ASSEMBLY (FIG.1) Item 3 2 Item 4 6	107 1050 108 7486 109 1226 110 LD-	87 6BA x 1/2" Rd.Hd.St.Screw 2 1 1 1 1 1 1 1 1 1	207 208 210	81189 12195 74871	FLYWHEEL ASSEMBLY (FIG.1) 28A x 3/4" Soc.Hd.St.Cap Screw IMPEDANCE DRUM & SHAFT ASSEMBLY Shaft	1 1	287 10163 288 12259 289 LD-2558 290 10156 291 LD-2560 292 10028	Clamp 4BA x 5/8" Rd.Hd.St.Screw Plate (Conduit Coupling)
2	5 90528	" 13 1 " 14 2 " 17 2 Door	113 LD-1		211 212 214	68715 * 68714 * LD-2182	BRACKET (COLLECTOR LENS) ASSEMBLY	1	292 10028 293 12329 294 LD-2559 10023	2BA Hex.St.Nut
2 2 2 3	9 LD-2884	Lens Assembly - (Includes 28 & 29) 1 Lens Bush with Lens 4 1 Washer (Fibre) 2 Nut 1	117 2013	12362 Plunger	215 216	LD-1218 *	Bracket LD10029 Item 98	1 2 2 2	293 12329 12559 10023 1296 1D-2469 1D-2477 10304 1000 73936	Pin, Dowel Catch ABA x 5/16" Rd.Hd.St.Screw Nameplate (Quote Serial No.) Flate (Cover)
	30 LD-2883		121 748		218 219 220 221	LD-2180 74671 * LD-1129 LD-1128	Lens Holder — LD10027	7 3	000 73936 001 12269 002 LD-3626 003 LBXX-6407 004 LSXX-6406	2BA x 1/4" Inst.Hd.St.Screw Shim Main Frame Machining
		1 2 3 11	125 1232	43 Arm 127 Hex.Hd.St.Screw 1 27 4BA x 1/2" Hex.Hd.St.Screw 1 28 Screw (Spring Anchor) 1 20 4BA x 3/4" Hex.Hd.St.Screw 1	222 223 224 225 226	12186 LD-1126	2BA x ''4" Fl.Pt.St.Set Screw Plug CEAL / Cell Mount 42071 Lens Assembly	1	(Pa	MISCELLANGOUS ITEMS rt of 2003-A Reproducer Set)
4 4	81292 74934 LD-2527	SOCKET (EXC.LAMP) ASSEMBLY (FIG.5) 1 Bracket 1 Block 1	127 121	1131 Ball Bearing 2	227	LD-2179 LD-2178 * LD-2176 * LD-2177 *	Housing Lens Lens	1 1 3	306 12288 307 12289	19 196 198 3/8" Whit x 1-1/2" Soc.Hd.Cap Serew
4	10427 LD-2528	4BA x 3/8" Ch.Hd.Br.Screw 2 Contact 1	133 LD-1 13 LD-1 13 LD-1	2369 Roller (Upper Damper) Assembly 1 2368 * Roller 1 Bush 2	231	LD-2548 LD-2551	TERMINAL STRIP ASSEMBLY (FIG.1) TERMINAL STRIP ASSEMBLY (FIG.1)			3/8" - 16 Whit x 2-1/2" Soc.Hd.Cap Screw 3/8" Whit.St.Washer
444444445555555555555555555555555555555	10422 12108 12326 1D-2526 1D-2523	4BA Int.St.kk-washer 2 4BA x 5/16" Ch.Hd.Br.Screw 2 4BA x 1-1/4" Soc.Hd.St.Cap Screw 1 Spring 1 Knob 1	137 LD-2	2373 Shaft (Upper Damper) Assembly 1	235 236 237	LD-2544 LD-2545 10461	Bracket (Fig.1) Plate 4BA x 5/16" Rd.Hd.St.Screw	1 2 6 6	10018 1009 LSR-6415 100 68762 111 LD-2576 112 81294 113 LD-2552	Screw Spring (Loading) Cover
55555	ID-2526 ID-2523 ID-2524 ID-2524 ID-2525 80858 80857 67888	Spring	142 7484	94 * Shaft Lower Damper Arm Assembly (Includes 143-153) 1 1 tem 102 1 1 n 109 1	240 241	90802	(Fig.4) Item 47 64 COVER ASSEMBLY (FIGS. 2 & 4) Cover		618 68763 119 LD=2476 120 10602 121 LD=1559 122 LD=2434 74756	Stud, Hexagon Roller 2Ba x 5/16" Rd.Hd.St.Screw Lamo
55	80859 LD-1408 *	Body Assembly 1	143 8129 144 LD-3	58 Arm 128 2 35% Screw 1	242	10426 +	2BA x 1/4" Rd.Hd.St.Screw		122 LD-2434 74756 125 68249	Collar Belts (Matched Pair) Condenser
6		Cord & Plunger Assembly - (Includes 62-69) Wire, Red	148 LD-2	2371 Koller (Lower Damper) Assembly 1 1 1 135* 2 1	244	31370-B	ABA T 5/8" Cek Hd St Sorey	3		Screw
666666666666	65481 66232 74042 LD-1413 * LD-1406 *	Sleave 2 Tag 1 Flunger Assembly -(Includes 66-69) 1 Bush 1 Spring 1	151 LD-2	2365 Shaft (Lower Damper) Assembly 1			Item 160	1 3	327 68810 12247 329 74874 330 74962 331 12196	Gear (Take-up Palley Drive) 2BA x 7/16" Cup Pt.St.Set Screw Shaft (Main Drive) Sprocket 4BA x 1/2" Soc.Hd.St.Cap Screw
66		Plunger 1 Screw 1 BASE ASSEMBLY (FIG.5) 1	158 7486 159 7486	68 Arm (Pad Roller) Item 98 3	251	55207	Switch (PB) Assembly	1 1		22
		Item 33 1	160 1119 161 1082 162 1223 163 6769 164 LD-1	26 2BA Hex.St.Lk-nut	A STATE OF THE STA			1 2 2		Item 335 11 336
7778	LD-2531 LD-2530 LD-2529 10011	Washer 6	166 7393 167 6774	38 Stud & Flange Assembly (Includes 167-174) 1 1 1				1 1		Item 335 " 336
777778888888888888888888888888888888888	LD-2533 LD-2534 10116 10030 20108	Contact Pin 1 Contact Pin 1 2BA Hex,Fr,Lk-mut 4 2BA St.Washer 4 2BA Int.St.Lk-washer 2	170 LD-1	1180 Pin (Taper) 1 1181 * Stud & Knob Assembly 1	263	LD=739	Item 38	1 2 2	342 69692 343 81282 344 LD-2553	Cover Assembly Cover Sarew
			173 LD-1	1183 * Stop Pin 1182 * Pin 1	264	10767	4EA x 1/2" Rd.Hd.St.Screw 4EA Hex.St.Nut Item 47	1 1		



	#	ASSOCIATED EQUIPMENT (Not part of 2003-E Reproducer Set)		NOTES: WITH PARTICULAR REFERENCE TO 2001 J3, 2001 L3
REF	CODE	ITEM	QTY	2003 E and 2024 K
348 349 350	68876 90778 10898	MOTOR BRACKET ASSEMBLY Item 196 " 197 " 326 Bracket 5/16" St.Lk-washer	1 4 4 4 1	FORMS PART OF 2003 E REP. SET
353	30922-В	MOTOR	1	SUPERSEDED BY 33242A DUAL VOLTAGE MOTOR
				SUPERSEDED BY 42051 ADJUSTABLE PULLEY 50HZ OR " 42052 " 60HZ
				SUPERSEDED BY LS 9313 TOOTHED RUBBER BELT DRIVE PARTS INCL: LSD. 55214 Belt LSD. 55464 Taper Lock Bush LSD. 55463 Pulley 22 T LSD. 42281 Stud LSL. 15521 IDLER ROLLER %" White nut %" White Washer
			1 3 2 2 2 2	SUPERSEDED BY LSD 55462 Sprocket 17 T PART OF 2001 J3 or L 3 " 42437 Shaft SUPERSEDED BY LSL 15589 Conduit Assy. PART OF 2003 E INCL. 3' - LSD 71335, 1" Flex Cond. 2 - 73959 Couplings
379 381 382	74024 2023-B 12375	Belt (Take-up) Spool Box (Lower) Assembly (GEB 10.27) 5/16" - 18 Whit. x 1-1/4" Soc.Hd.St Cap Screw	1	72024 FOR 18" SPOOL BOX - 51472 FOR 24" SPOOL BOX - 42535 FOR 2898—A SPOOL PLATE
383	LD-1960	Plate 3/16" thick	2	NOT REQUIRED WITH 2024 K PEDESTAL
388 389 390	68454 12291 12292	Bag of Bolts, containing - Item 308 3/8" - 16 Whit. x 1-3/8" Hex.Hd.St. Screw 1/2" - 12 Whit. x 1-1/2" Hex.Hd.St. Screw	3 3 2	
391	11922 KSE-6243	1/2" Whit.St.Washer Exciter Lamp	2	PHOTO-VOLTAIC CELL REQ'D 2550 A

2022A MAGAZINE

NOTES

- 1. In the following Stocklist items marked * are not separately replaceable.
- 2. For Spool Adapters, see LSO-7799 (10.07)

REF	CODE	ITEM	QTY
1 2	90536 LD-1979	Case Assembly Transfer	1
34 5	LSR-6419 LD-1691 * LD-1692 *	Arm Assembly Bearing Bearing	1 1 1
6 7 8 9 10 11 12 13	74340 90538 LD-1680 74128 * LD-1679 * LD-1681 LD-1678 12237	Door Assembly Door Cup Nameplate Stud Spring Boss BA x 3/16" Allen 90° Cone Pt:Set Screw	1 1 1 1 1 1 1 1
14 15 16 17 18	74207 74211 12244 68029 LD-1631	Shaft Assembly (See Note 2) Shaft 4BA x 1/4* Allen 90° Cone Pt.Set Screw Collar Pin	1 1 1 1 1
19 20 21 22 23 24 25 26 27 28 29 30 31	68026 80964 80965 10606 LD-1630 74287 74209 10850 10758 12040 68028 LD-1627 LD-1625	Pin Bracket Bracket ZBA x 5/16" Csk.Hd.St.Screw Washer Plate Plate Plate 8BA x 1/4" Rd.Hd.St.Screw 8BA Hex.St.Nut 8BA Int.Shkprf.St.Lk.Washer Glass Spring Collar	1 1 19 19 19 1 1 8 8 8 2 2 2
32 33 34	LD-1624 74213 12196	Nut Assembly Nut 4BA x 1/2" Allen.St.Cap Screw	1 1 1
35678901123456	68027 LD-1186 73929 12249 10422 74210 LD-1623 LD-1628 12198 10108 10023 70845	Spring Oil Cup Knob BBA x 3/16 Fil.Hd.St.Screw BBA Int.Shkprf.St.Lk.Washer Protector Letch Plate 2BA x 3/8 Fil.Hd.St.Screw 2BA Int.Shkprf.St.Lk.Washer 2BA Hex.St.Nut Washer (not part of SpoolBox) as requ	1 1 1 2 2 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2

2023 B MAGAZINE

NOTE

- In the following Stocklist items marked * are not separately replaceable.
- 2. Item 28, 74216 Pulley Assembly, including 74222 Pulley and LD-1636 Pins, is used on 2023-A Spool Box for 2002-type Rep.Set. The 75600 Pulley Assembly, including 75601 Pulley and LD-3615 Pins, is used on 2023-B Spool Box for 2003-type Rep.Set, and will ultimately be shipped on F0's calling for 74216, thus converting existing 2023-A Spool Box to B type universally.
- 3. For Spool Adapters, see LSO-7799 (10.07)

REF	CODE	ITE	QTY
1 2	LSO-6422 LD-1980	Case Assembly Transfer	1
3	LSR-6421	Arm	1
4 5 6 7 8 9 10 11	74339 90537 LD-1680 74128 * LD-1679 * LD-1681 LD-1678 12237	Door Assembly Door Cup Nameplate Stud Spring Boss 4BA x 3/16" Allen 90° Cone Pt.St.Set	1 1 1 1 1 1 1 1
12 13 14 15 16	74215 74221 68029 LD-1631 12244	Shaft Assembly (See Note 3) Shaft Coller Pin 4BA x 1/4" Allen 90° Cone Pt.St.Set Screw	1 1 1 1 1
17 18 19 20 21 22 23 24 25 26 27	68026 80964 80965 LD-1630 10606 74287 68028 12040 10758 10850 74209	Pin Bracket Bracket Wanher 2BA x 5/16" Csk.Hd.St.Screw Plate Glass 8BA Int.Shkprf.St.Lk.Washer 8BA Mex.St.Nut 8BA x 1/4" Rd.Hd.St.Screw Plate	1 1 23 19 1 1 8 8 8
28	74216 or 75600 LD186 74222 or *	Pulley Assembly (See Note 2) # # # # # Oil Cup	1 2 1
30 31 52	75601 * LD-2348	Pulley (See Note 2) " " " Collar Pin (See Note 2) " " "	1 3

REF	CODE	ITEM	QTY
33	74218	Bush	ī
33 34	12246	1/4"-26 TP1 x 3/8" (BSF) Allen 90°	
		Cone Pt.St.Set Screw	1
35	74219	Disc	1
36 37 38 39	12247 68031	2BA x 5/16" Allen Cup Pt.St.Set Screw	1 1 2 1
78	74220	Disc	1
70	LD-1625	Collar	2
40	68138	Spring	1
41	LD-1624	Nut Assembly	1
42	74213	Wut	1
43	12196	4BA x 1/2" Allen St.Cap Screw	1
44	74217	Holder Assembly	1
45	90539	Holder	ī
46	74017	Roller	1 38
47	74016	Roller	3
48	LD-1400	Screw	8
49	11012	3BA x 5/16" Csk.Hd.St.Screw	4
	73929	Knob	i
51	12249	4BA x 3/16" Fil.Hd.St.Screw	2
52	10422	4BA Int.Shkprf.St.Lk.Washer	2
53	74210	Protector	1
56	LD-1623 LD-1628	Latch Plate	1
50 51 52 53 54 55 56 57 58	12198	2BA x 3/8" Fil.Hd.St.Screw	2 1 1 2 2 2 2
57	10108 1	2BA Int.Shkprf.St.Lk.Wasner	2
58	10023	2BA Hex.St.Nut	2

	ASS	OCIAI	ED	EOUTP	TENT	
(<u>H</u>	lot	part	of	Spool	Box)	
			-			_

59	70845 74024	Washer	8.8	required
60	74024	Belt		11

LSO-7208

ISSUE. 3

SHEET 1 of 2

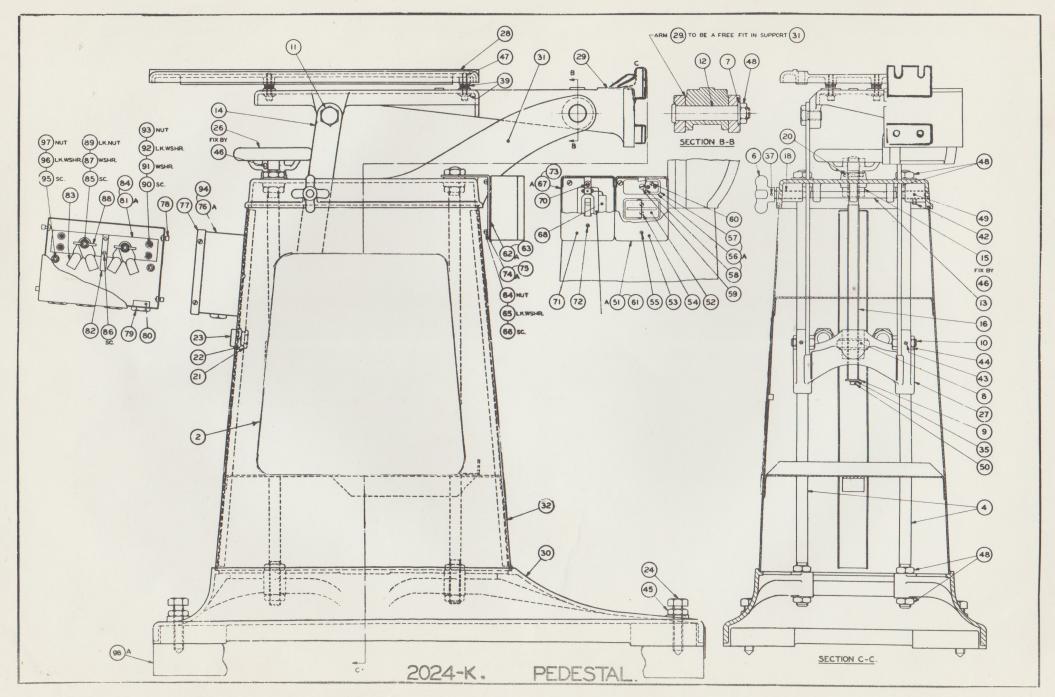
REF	CODE	ITEM	QTY	
123456780011234567890122345678901234567	ID-6195 ID-6194 10011 74210 ID-1628 12511 12296 10126 12051 ID-6190 ID-6193 ID-6192 ID-6274 ID-6275 ID-6271 ID-6270 ID	Spring Latch Screw, 6BA x 5/16" Rd. Hd. Protector Plate, Spacing Screw, 3/16"-24 Whit. x 3/8" Rd. Hd. Nut, 3/16"-24 Whit. Hex. Lockmut, 6BA Hex. Screw, 6BA x 3/16" Rd. Hd. Spring Window Frame, Outer Frame, Outer Frame, Inner Window Spring Plate Disk Spring Collar Nut Washer, Friction Bush, Long Bush, Short Oilcup Screw, 3/16"-24 Whit. x 1/2" Rd. Hd. Washer, 3/16" Whit. Bracket, Outer Bracket, Inner Pin, Hinge Screw, 3/16"-32 x 1/2" Csk. Hd. Spool Box Screw, 3/16"-24 Whit. x 3/4" Csk. Hd. Screw, 3/16"-24 Whit. x 3/4" Rd. Hd. Knob Screw, 4BA x 3/16" Rd. Hd. Frame	112125244211112111111111111111111101631211	
40A 41 42 43 44 45 46	1D-6276 92276 92277 1D-1679 1D-1678 12237	Door Assembly Door Detail Stud Boss Set Screw, 4BA x 3/16" Allen 90° Cone Pt. Spring	1 1 1 1	
47 9	LD-1680 74128 12051 LD-5376 50942	Cup Nameplate Screw, 6BA x 3/16" Rd. Hd. Collar Assembly Collar	1 1 1 4 1 1 1 1	
51 52 54A 55 56	11400 76823 76822 LD-6267	Set Screw, 2BA x 3/8" Allen Cup Pt. Shaft Assembly Shaft Pin	1 1 1 1	
58A 59 60	51059 51058 12346	Nut Assembly, Clamping Nut Screw, 3BA x 1/2" Allen Cap	1 1 1	

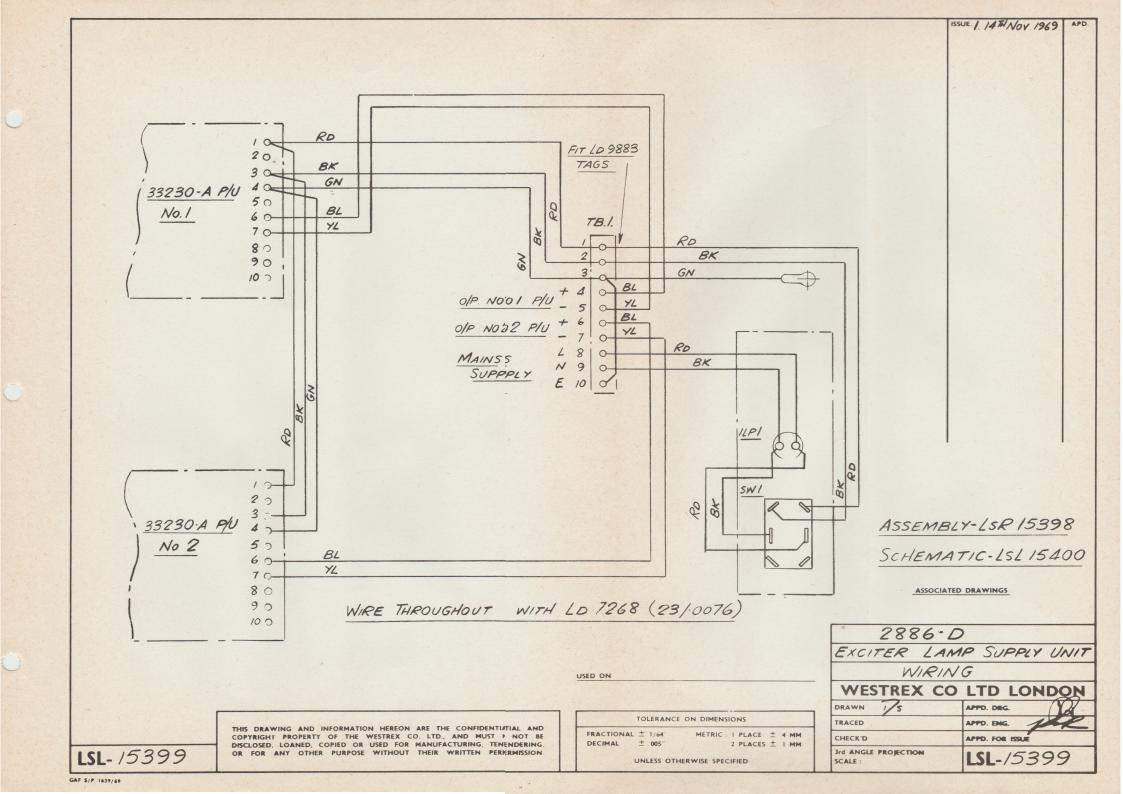
REPLACEMENT PARTS FOR 2029 A LOWER MAGAZINE

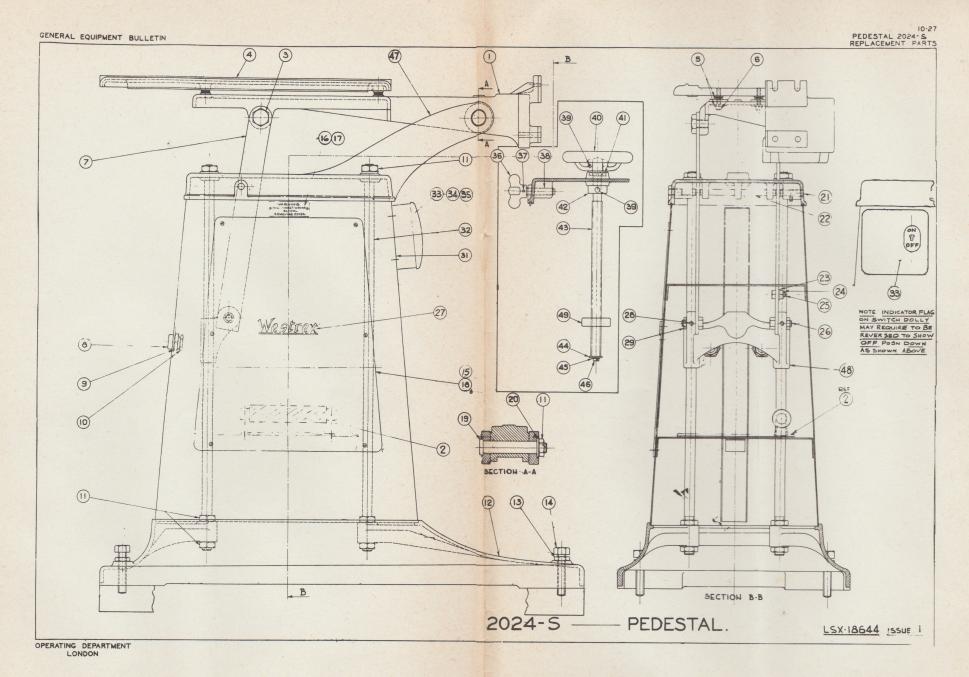
REF	CODE	ITEM	QTY	REF	CODE	ITEM	QTY
REF 123456789011234567 8901123456789012345 1112345678901123456789012333333333333333333333333333333333333	CODE LD-6192 LD-6191 LD-6193 LD-6190 10126 12051 10380 73929 74218 68031 74220 51048 51047 LD-6189 74219 11196 12227 LD-1186 LD-6196 82597 92221 11900 12509 10426 12512 12511 LD-1628 74210 10011 LD-6195 LD-6194 12296 LD-5376 50942 11400 77179 75600 775601 * LD-2348 LD-3667 76825 76824 * LD-3667	Frame - Inmer Frame - Outer Window Spring Lockmut, 6BA Hex. Screw, 6BA x 3/16" Rd. Hd. Screw, 4BA x 3/16" Rd. Hd. Knob Bush Washer Disc, Pressure Spring Nut Collar Disc Friction Set Screw, 2BA x 1/4" Allen Cup Pt. Set Screw, 1/4" - 20 Whit. x 1/4" Allen Cup Pt. Oil Cup Pin, Hinge Bracket, Outer Washer, 3/16" Whit. Screw, 3/16" - 24 Whit. x 1/2" Rd. Hd. Screw, 3/16" - 24 Whit. x 3/4" Csk. Screw, 3/16" - 24 Whit. x 3/4" Rd. Hd. Screw, 3/16" - 24 Whit. x 3/4" Rd. Hd. Screw, 3/16" - 24 Whit. x 3/8" Rd. Hd. Screw, 3/16" - 24 Whit. x 3/8" Rd. Hd. Screw, 6BA x 5/16" Rd. Hd. Spring Latch Nut, 3/16" - 24 Whit. Hex. Collar Assembly Collar Set Screw, 2BA x 3/8" Allen Cup Pt. Pulley Assembly Pulley Assembly Pulley Assembly Pulley Assembly Pulley Assembly Shaft Pin Oil Cup	11124421111111111 111145	REF 48A 49 50 52A 534 556 57A 58 60A 662 634 6566 67 68	51059 51058 12346 78187 92222 LD-1400 51285 51286 51283 51284 92224 92223 74128 12051 LD-1679 12237 LD-1681 LD-1678 92232	Nut Assembly, Clamping Nut Screw, 3BA x 1/2" Allen Cap Holder Assembly Holder Screw Roller Assembly (Small) Roller Roller Assembly (Large) Roller Door Assembly Door Nameplate Screw, 6BA x 3/16" Rd. Hd. Stud Set Screw, 4BA x 3/16" Allen 90° Cone Pt. Spring Cup Boss Frame (When used on Simplex 5 Point Pedestal, file away to 82361)	111111111111111111111111111111111111111

REF	CODE	ITEM	QTY	REF	CODE	ITEM	QTY	The state of the s
	23/19		1 1	ASSOC	CIATED EQUIP	MENT (NOT PART OF 2024 PEDESTAL ASSEM	BLY)	
4	8 4221 68772	Cover Bolt, Stay 2024 K	4	51 52 53 54 55 56 57 58	31107-A 74247 74449 10473 12254 62934 62569 63570	Fuse Box Assembly Fuseholder Lid Screw, 4BA x 1/2" Rd. Hd. St. ND Screw, 4BA x 3/8" Inst. Hd. St. ND Terminal Strip Assembly Terminal Strip Assembly	1 1 2 2 1 1 1	
6 7 8 9 10 11 12 13 14 15 16	68776 68777 68778 68779 68780 68781 68782 68782 68784 68792 68793	Knob, Lockscrew Washer Nut, Lifting Screw Washer Screw, Adjusting Screw, Lock Pin Rod, Clamping Arm, Support Pedestal Collar, Thrust Screw, Carriage Lifting	1 1 1 2 2 1 1 2 1 1 2 1 1	59 661 62 63 64 65 66 67 68 69 71	11634 10035 80983 74731 74738 10023 10108 10163 30535-J 68249 69808 10165 74428	Cover Screw, 2BA x 1" Inst. Hd. St. Screw, 4BA x 7/16" Rd. Hd. St. ND Box Assembly Plate Assembly Plate Nut, 2BA Hex. St. ND Lockwasher, 2BA Int. Shkprf. St. Screw, 2BA x 1/2" Rd. Hd. St. Switch Assembly Condenser (0.1 µF) Switch Assembly Screw, 4BA x 5/16" Csk. Hd. St. ND Lid Assembly Screw, 0.138" - 32 ASME* \$ 3/8"	1121122211121	
18	68795	Screw, Lock	1441	73	81056	Oval Flat Hd. St.	2	
20 21 22 23 24	69190 69191 69192 68507 69194	Ball, Steel 9/32" dia "Hoffmann" Bush Lock Nut Bush Screw	2 2 2 4	74 75 64 65 76	74603 74672 10023 10108 10163 LS0-6456	Bracket Assembly Bracket Nut, 2BA Hex. St. ND Lockwasher, 2BA Int. Shkprf. St. Screw, 2BA x 1/2" Rd. Hd. St. Arc Lamp Terminal Box Assembly	1 2 2 2 1 1	
26 27 28 29 30 31 32	81.290 LS0-6424 LSX-6425 LSX 8555 LSX-6427 LSX-6428 LD 10271	Wheel, Carriage Lifting Lifting Bracket Carriage Arm L3X8555 Base Support Cover (2024 K)		77 78 79 80 81 82 83 84 85	74257 63458 68122 68123 80985 68107 68108 74258 LD-1687	Lid Screw Bush Tube End Terminal Strip Assembly Plate Cable Lug Terminal Strip Screw	144411412	
35 37 42 43	10060 10233 11543 11783	Lockwasher, 1/4" whit. Std. St. Taper Pin, 7/64" x 7/8" lg. St. Oiled Set Screw, 1/4" - 20 Whit. x 3/8" Cup Pt. Cup Pt. Set Screw, 1/4" - 20 Whit. x 3/8"	1 3 1 3 20 3 2	86 87 88 89 91 92 93 94 95 96 97 98	10791 10791 12752 12253 11544 10136 10422 10036 90572 10849 10903 10027 91169 91170	Screw, 2BA x 3/4" Ch. Hd. St. ND Washer, 3/8" Whit. Br. Wing Nut, 3/8" - 16 Whit. Br. Locknut, 3/8" - 16 Whit. Hex. Br. Screw, 4BA x 5/8" Csk. Hd. St. Washer, 4BA Std. St. ND Lockwasher, 4BA Int. Shkprf. St. Nut, 4BA Hex. St. Box Assembly Screw, OBA x 3/4" Rd. Hd. St. Lockwasher, OBA Int. Shkprf. St. Nut, OBA Hex. St. ND Platform - 2" Higher " - 4" " " - 6" "	22224441222	
44 45 46	12324 12344 12348	Set Screw, 1/4" - 20 Whit. x 1/2" Cup Pt. Lockmut, 1/2" - 12 Whit. Hex. St. ND Lockmut, 5/8" - 11 Whit. Hex. St. ND Screw, 5/16" - 18 Whit. x 5/8" St. Cap	2 2 4 2					
47	12349	Screw, 5/16" - 18 Whit. x 1-1/2" St. Cap	4					
48 49	12350 12352	Locknut, 3/4" - 10 Whit. Hex. St. ND Set Screw, 1/2" - 16 BSF x 1-3/4"						63 14 15 15 15 15 15 15 15 15 15 15 15 15 15
50	12353	Screw, 1/4" - 20 Whit. x 5/8" Ch. Hd. St.	1				1/4	

REPLACEMENT PARTS FOR 2024 K PEDESTAL







STOCK LIST -P.18643

186.1 AUG.21976

2024 - 5	PEDESTAL
FIELD REPL	ACEMENT PARTS
WESTREX COMP	ALY LTE LONDON
DR'H BY	ADD'D DRFT'S
TR'C'D BY	APP'D ENG'R
CH'KD BY	APP'D FOR ISSUE!
SCALE . 1 2	-1 SX-1864

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She was	Item No.	Drg. No.	Description,
1	1	LSX 8555	Arm (Pedestal)
1	2	LSL 18623	Resistance Assembly (P 18622)
1	3	LSD 68781	Screw, Lock.
1	4	LSD 96294	Platform
20	5		5/16" Whit. Std. Plain Washer.
4	6		5/16" Whit. x 1½" Lg. Skt. Hd. Cap Screw.
		TOD 60704	
2	7	LSD 68784	Arm (Support)
2	8	LSD 68507	Bush
2	9	LSD 69192	Locknut
2	10	LSD 69191	Bush
13	11		7" x 10 Whit. Hex. Hd. Locknut.
1	12	LSX 6427	Base
4	13		5" x 11 Whit. Hex. Hd. Locknut.
4	14	LSD 69194	Screw
1	15	LSD 84221	Cover
1	16	LSD 43148	Label
5	17		8BA x 5" Lg. Rnd. Hd. Screw Brt. Chr. I
6	18		4BA x 2" Lg. Inst. Hd. Screw Brt. Chr. F
1	19	LSD 68782	Pin
1	20	LSD 68777	Washer
1	21		½" BSF x 1¾" Lg. Skt. Hd. Set Screw.
1	22	LSD 68783	Rod
		00100	
1	23		5/16" Lockwasher.
1	24		5/16" BSF Hex. Lockmut.
1	25		5/16" BSF x 5" Lg. Hex. Hd. Bolt.
2	26	LSD 68780	Screw, Adjusting.
1	27	LSD 41986	Nameplate.
2	28		4" Whit. x 1 Lg. Skt. Hd. Set Screw Cup Point.
2	29		½" Whit. Hex. Locknut.
2			7" whit. Hex. Lockhut.
3 1	30		
1	31	LD 10271	Cover.
4	32	LSD 52108	Bolt, Stay.
1	33	LD 10993	Switch/Fuse Box.
2	34		2BA x 3" Lg. Ch. Hd. Screw St. Cad. Pl
2	35		2BA sTd. Full Hex. Nut. St. Cad. Pl
1	36	LSD 68776	Knob, Lockscrew.
1		טווסט ענגע	
	37	100 (0005	7/64" x 8" Lg. Taper Pin.
1	38	LSD 68795	Screw, Lock.
2	39		5/16" Whit. x 2" Lg. Skt. Hd. Cap Screw.
1	40	LSD 81290	Wheel, Hand.
11	41	LSD 69190	Ball Bearing.
1	42	LSD 68792	Collar, Thrust.
1	43	LSD 68793	Screw, Carriage Lifting.
1	44	LSD 68779	Washer.
1	45		1 Lockwasher.
1	46		4" Whit. x 5" Lg. CH. HD Screw St. Cad. Pl.
1	47	LSX 6428	Support.
1	48	LSO 6424	Bracket, Lifting.
1	49	LSD 68778	
		202 30110	Assembly LSX 18644
Fair 1, 1997			
PERM 1			2024-S
A			Pedestal Assy.
Total Control			Y.
			2 9
			Stocklist
			WESTREX CO. LTD. LONDO
			a P- 18643



