Film-Tech

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These manuals are designed to facilitate the exchange of information related to cinema projection and film handling, with no warranties nor obligations from the authors, for qualified field service engineers.

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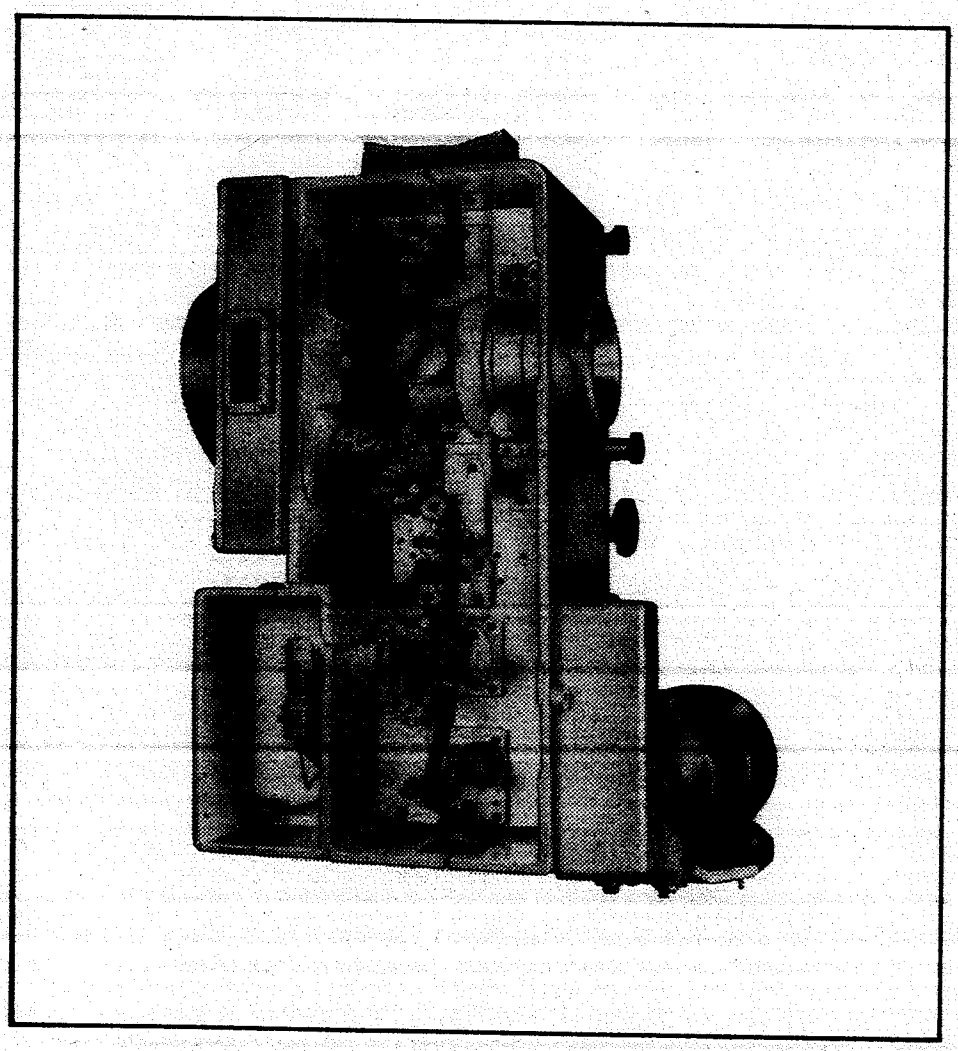


35 mm unit-built projector
Model MSP.

Lubrication And Maintenance

Lubricating The Projector Mechanism:

Once A Month :

A little bit of gear-lubricant on all gear contacts.

Caution :

DO NOT oil ball bearings. They are grease sealed for the life of the bearing. **DO NOT** oil the Mechanism while it is in operation. **DO NOT** use Benzine or other harsh solutions on the shaft and gears, to prevent the same from entering into the ball bearings.

Oiling The Intermittent Movement :

Oiling is done through the oil cup on the intermittent arm, from the operating side. Fill with any certified projector oil upto the oil level of the window. **DO NOT** fill over this oil level–surplus oil will overflow through the vent holes and possibly be forced out of the oil cup.

Check the oil gauge window ever so often (with the Mechanism stopped) to be sure that the intermittent movement has sufficient oil. Once a month, add a few drops of oil to the starwheel outer bushing.

To Drain The Intermittent Movement Of Oil :

Remove the bottom 'Oil Drain' screw with Steel washer and 'O' ring and drain out the oil. Place a clean cloth beneath this screw hole to absorb the oil and prevent it from running down into the Sound Reproducer. Replace the oil drain screw, making sure that the steel, washer and 'O' ring are placed in order on the screw. Fill the intermittent assembly upto the oil level with fresh projector oil.

Caution :

Do not add oil to the intermittent while the Projector is in operation. The intermittent cam acts as a splash distributor, constantly supplying fresh oil to the cam starwheel and bushing. Therefore, there may be no indication of an oil level showing on the window while the Projector is in operation.

Maintenance :

Other than keeping the intermittent movement properly supplied with oil and the Projector Mechanism clean, the maintenance of your Projector Mechanism should be a bare minimum.

It is a good mechanical practice to periodically check your equipment to be sure that the holding screws, fastening screws, nuts, collars etc., are tight and have not worked themselves loose. This is particularly applicable to parts installed in the field, such as drive coupling, adapter parts and mounting screws.

Keep the lateral guide rollers and fire trap rollers clean, free of dirt accumulation and film shaving to ensure that they are rotating properly.

The upper and lower pad rollers in their open position provide for automatically setting the film loop above and below the film gate. The lower pad roller also provides a means of measuring the correct distance of the film frame between the picture aperture and the sound aperture, thus ensuring exact synchronization of sound and projection.

Although there are no tension springs seen on the pad roller arms, each arm has a scientifically designed built-in device providing just the proper amount of pressure for optimum performance.

The upper and lower pad rollers should be adjusted so that there is a clearance of two thicknesses of film between the pad roller and the sprocket. The proper clearance is obtained by adjusting the stop screw (SC–87) and nut (NU–8) on the pad roller arms. (Fig.8)

Installing The Lens : (Lens Mount Assembly HI–A–60 Fig.6)

The lens mount is designed to take the modern four inch diameter lens and, with the proper adapters, will permit the use of all types of lenses.(no changes in the shutters are necessary).

In placing the lens in the lens mount, care should be taken that the front of the lens is towards the screen, otherwise the quality of the picture will not be satisfactory.

The lens mount, as shipped from the factory, is set in its correct center position in relation to the picture aperture. If a small correction of picture centering with respect to the screen is necessary, loosen the small retaining nut (NU–79) at the top of the lensclamp casting and then turn the large bushing knurled knob (BU–795) in clockwise or counter-clockwise direction, until exact centering of the picture is obtained. Retighten the nut securely. In many instances this centering feature will make it unnecessary to shift the pedestal to attain picture centering.

The lens focusing knob should be turned so that the lens mount clamp is in the center of its full length of travel. Insert the lens into the lens mount and clamp the lens lightly in place with the lens clamp screw. (SC–1229) If the focus is not good when the picture is projected, the lens may be shifted forward or backward until a fair focus is obtained. The lens clamp should then be tightened and the final accurate focusing be made with the lens focus knob (KN–45) which extends outside, at the front of the Mechanism.

A lens focusing ring and stop stud are also provided to allow the lens to be removed and re-installed without the necessity of re-focusing. For extra long lenses and heavy anamorphic attachments, there are special front lens support assemblies available.

Timing And Resetting The Shutters :

General :

Each Projector Mechanism has been set-up and run-in at the factory and, therefore, the shutters should be 'in time'. If shutters require retiming, make sure before changing any setting that the shutter cannot be corrected by turning the adjustment knob (KN–43) at the front of the Mechanism. (Fig.3)

To Check The Timing Of The Shutters :

Remove the spot sight glass (GL–18) in the fixed shutter guard by pressing lightly inward and upward. (Fig.9)

Note :

The indicator bar in the shutter guard across the opening is used for timing the shutters. Turn the Mechanism until the slot in the intermittent flywheel is parallel with the shutter shaft at the same time the intermittent sprocket is in motion. The slot in the intermittent flywheel hub is parallel with the shutter shaft twice in each revolution: once when the cam and starwheel are locked and again when the sprocket is in motion.

The latter is the correct position for checking the adjustment and corresponds to a two- tooth advance of the intermittent sprocket. In this position the notch on the shutter blade (single shutter) should line up exactly with the indicator bar across the spot sight frame.

To Re-set Shutter :

Set the shutter adjusting knob (KN-43) in its mid- position. Remove the rear shutter guard by taking out the four holding screws (2 at the rear and 2 on the gear side).

Caution :

Make certain that the intermittent sprocket is advanced two teeth from its stationary position and remains there or that the slot in the intermittent flywheel hub is parallel with the shutter shaft as outlined in a previous paragraph. Loosen the shutter hub clamp screws and rotate the shutter on the shaft until the notch lines up as required. Holding the intermittent flywheel while rotating the shutters will prevent shafts from turning. Tighten the shutter hub clamp screw securely. Re-install the shutter guard. Check notch alignment and replace the spot sight glass. The shutter should now be properly set and the shutter adjusting knob should not be turned unless absolutely necessary.

Threading The Projector :

Open the gate, the upper and lower pad roller arms and the intermittent sprocket pad. Switch on the framing lamp by operating the switch on the front of the Projector Mechanism. Thread the film through the roller holder on the top of the Projector, under the upper sprocket and over the upper pad roller, through the gate, under the intermittent sprocket, under the lower pad roller and over the lower film sprocket, to the Sound Reproducer.

Place the film in the gate such that it is engaged with the intermittent sprocket and inframe at the framing aperture above the picture aperture. Close the intermittent pad assembly and the film gate. Engage the film with the upper sprocket and close the upper pad roller arm. (The upper loop is correct as the pad roller in its open position acts as an automatic loop- setter). Engage the film with the lower sprocket using the pad roller in its open position as a loop setter. Close the lower pad roller arm.

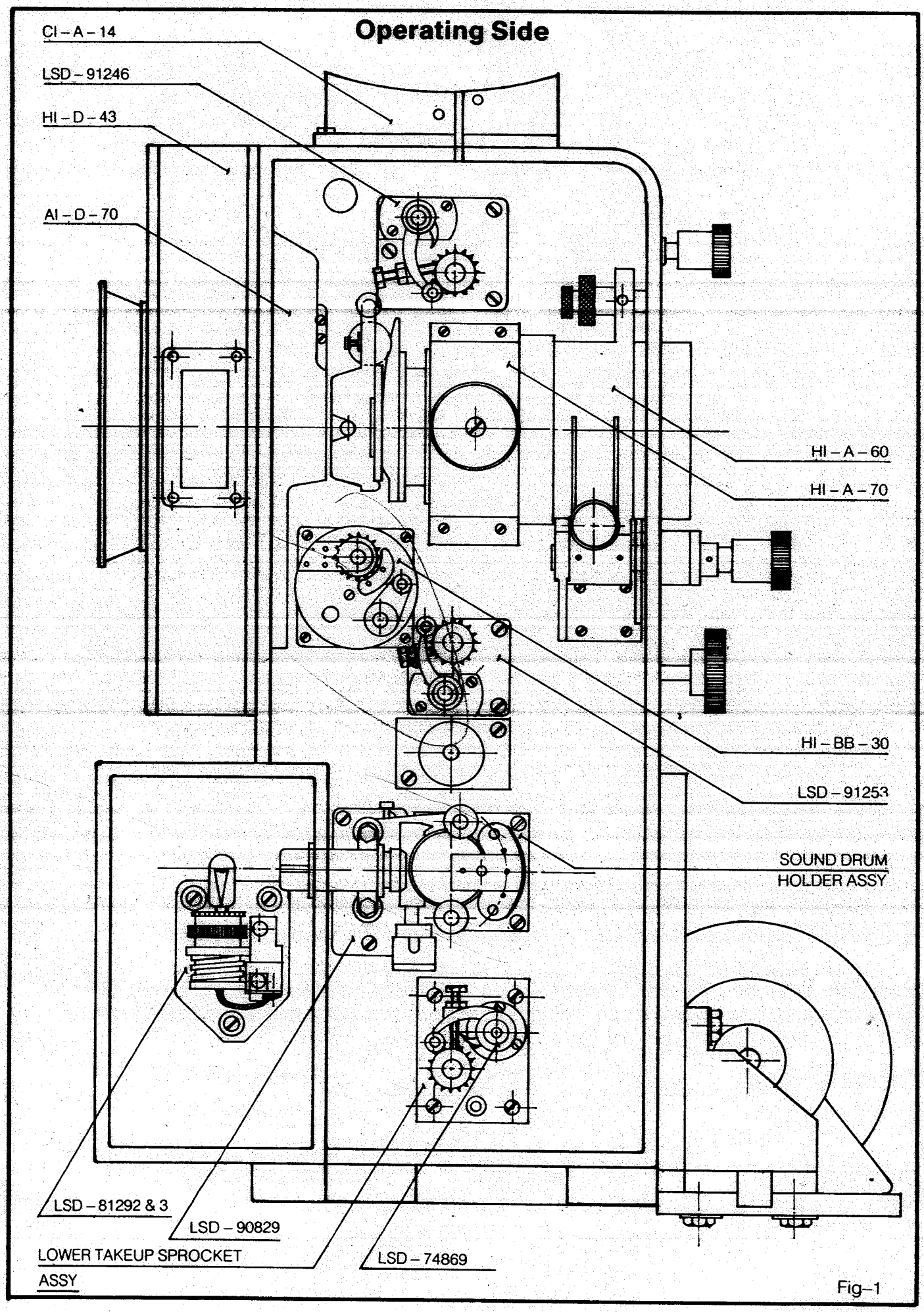
Caution:

When checking the downward movement of the film (frame) do not switch the Projector on and off. It is suggested to run the Mechanism, manually, by turning the shutter shaft knob provided for this purpose at the front of the Mechanism or alternatively by using the motor flywheel.

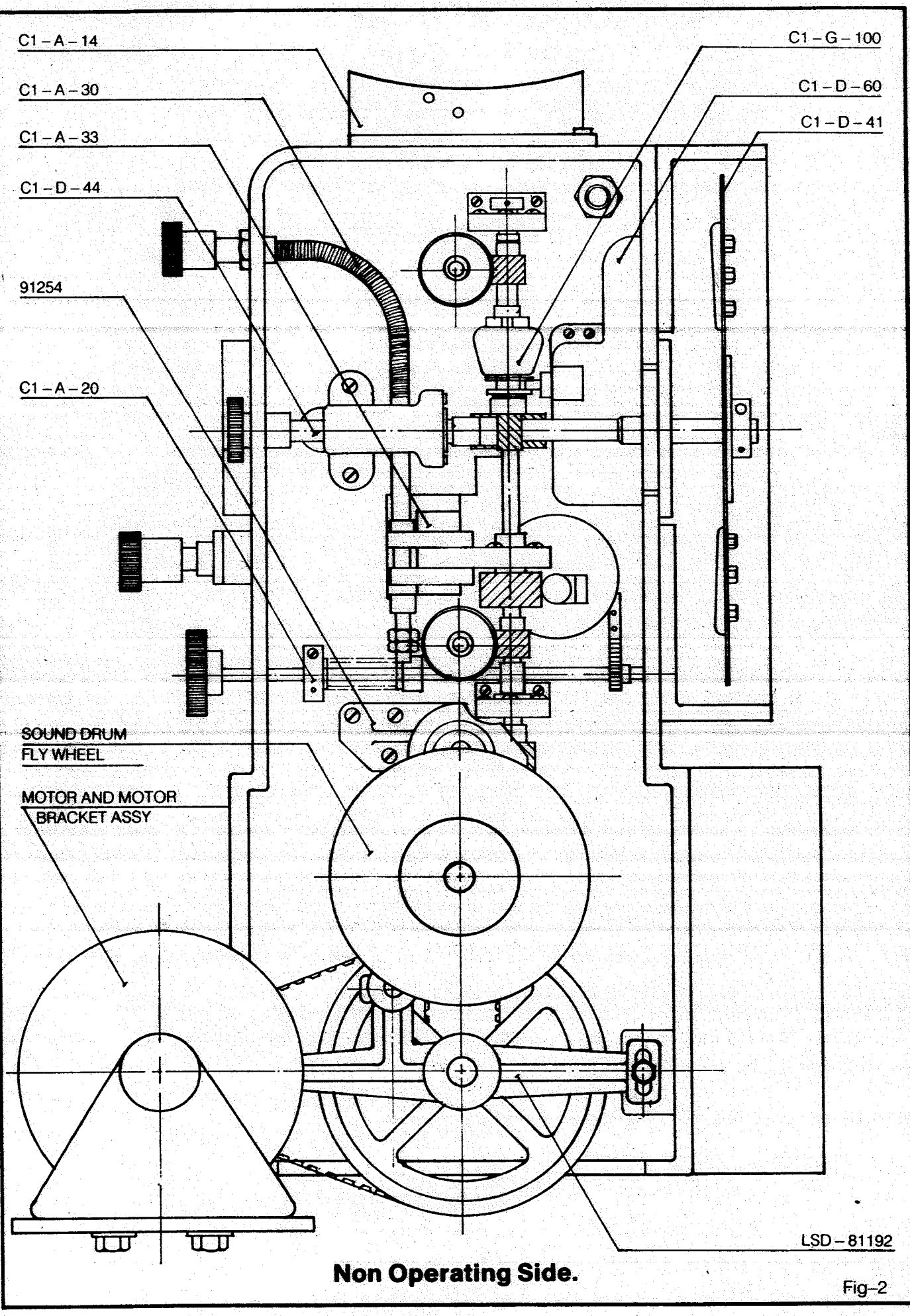
With the film correctly threaded through the Sound Reproducer to the Lower Magazine, the Projector is now ready to operate.

Framing:

The framing of the picture on the screen may be changed by turning the framing knob (KN-2) provided at the front of the Mechanism. The degree of clamping of the framing shaft may be changed by tightening or loosening the framing shaft clamp screw.

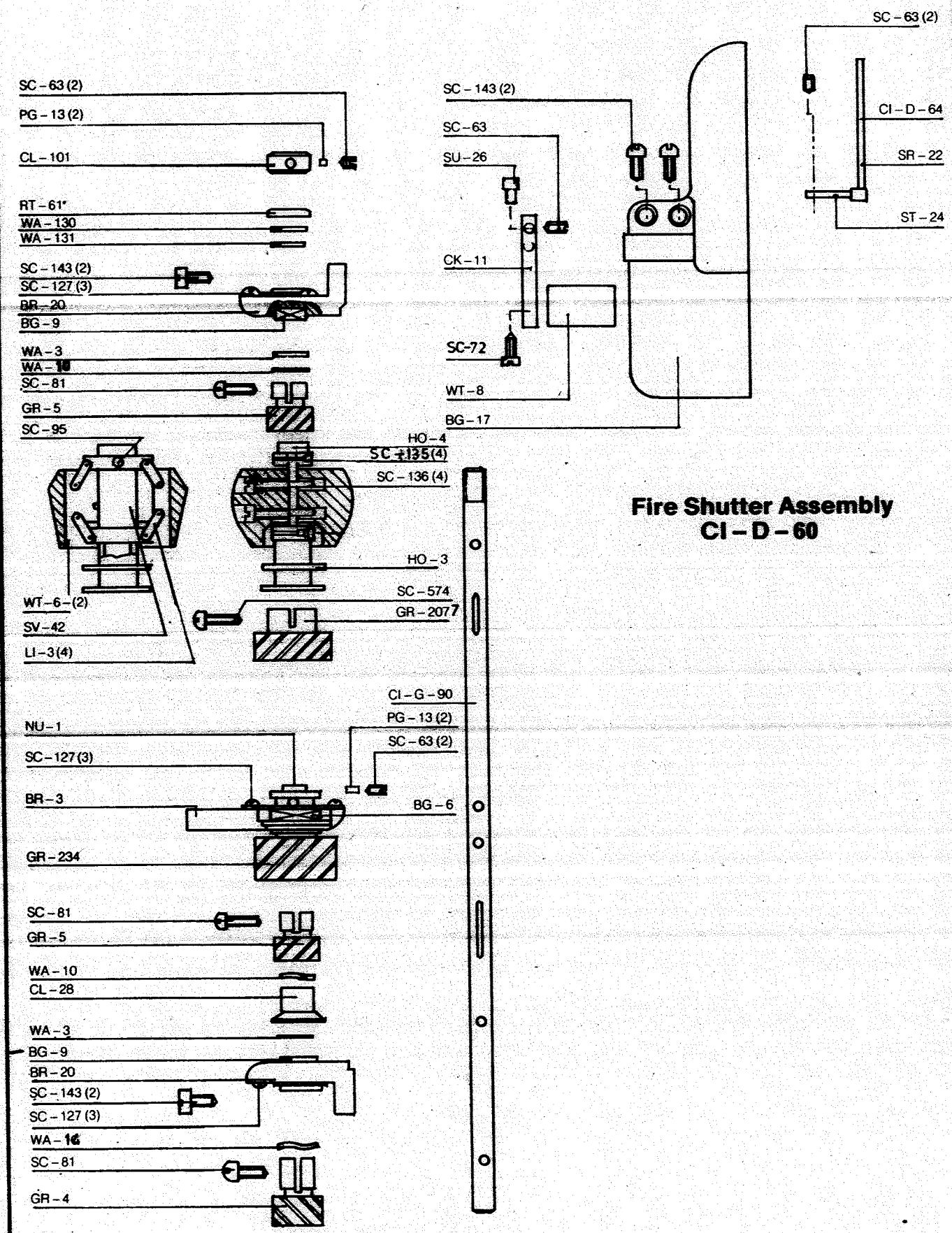

Operating Side
CI – A – 14
LSD – 91246
HI – D – 43
AI – D – 70
HI – A – 60
HI – A – 70
HI – BB – 30
LSD – 91253
SOUND DRUM
HOLDER ASSY
LSD – 81292 & 3
LSD – 90829
LOWER TAKEUP SPROCKET
ASSY
LSD – 74869

Fig–1



Non Operating Side.

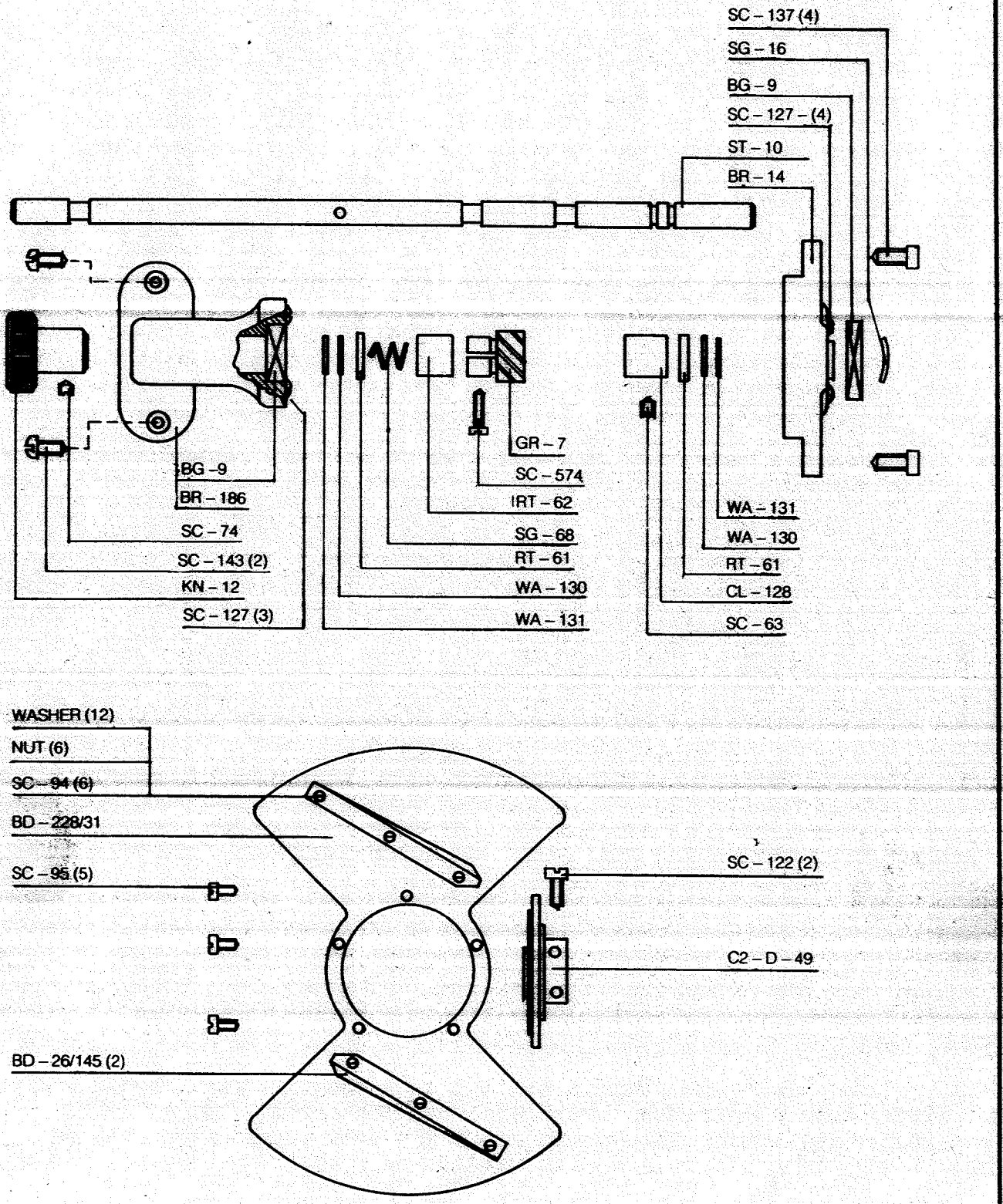
Fig–2



Fire Shutter Assembly
CI – D – 60

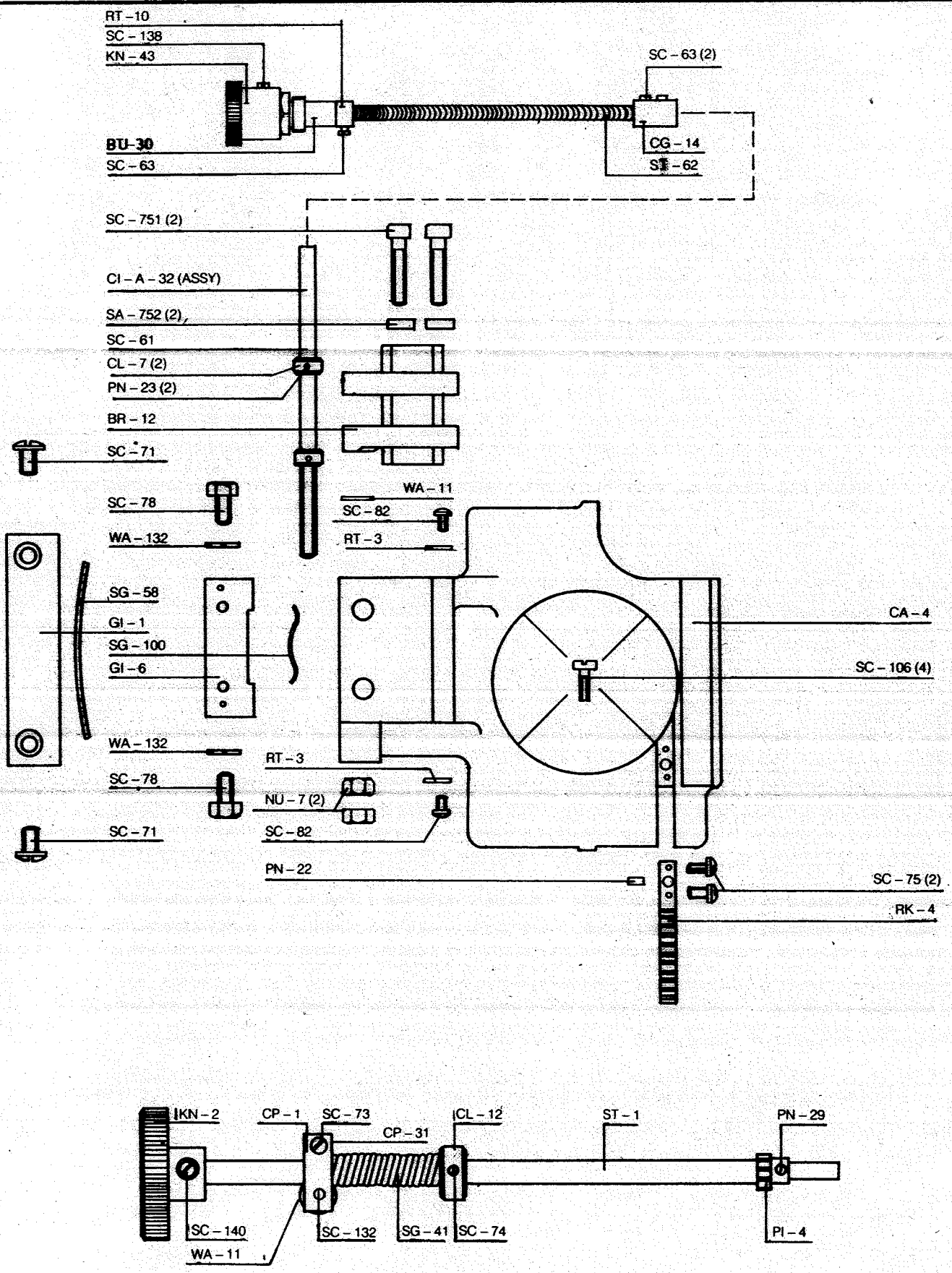
Vertical Shaft Assembly
CI – G – 100

Fig–3



Shutter Shaft Assembly
CI – D – 44

Fig–4

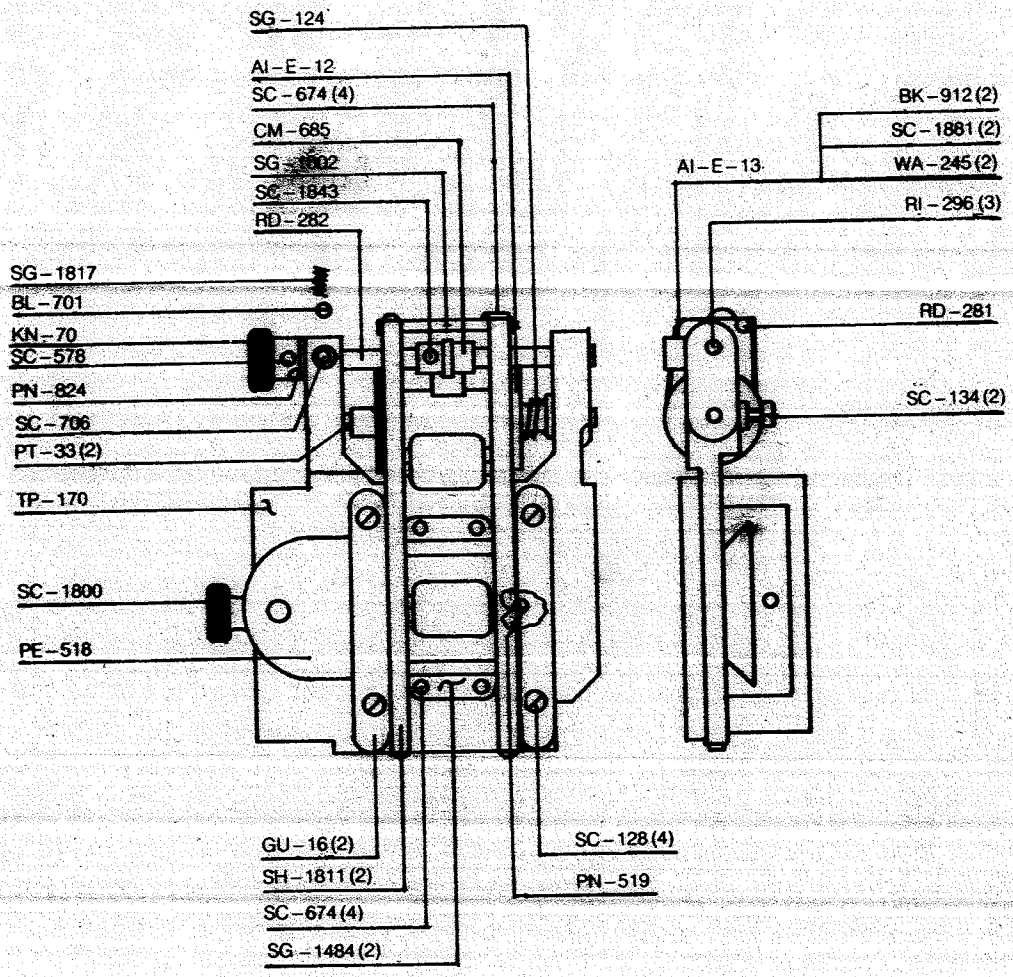


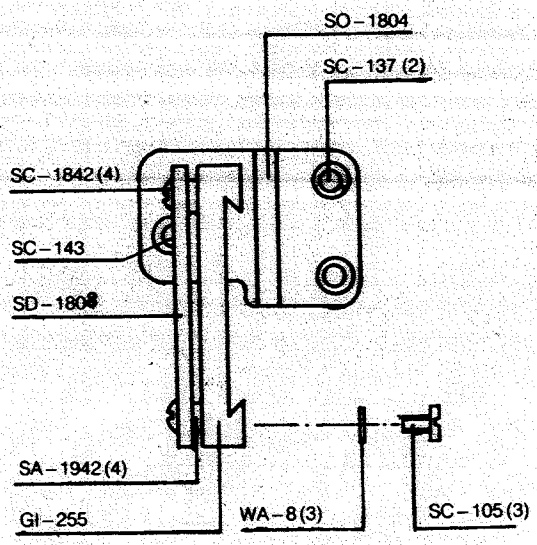
Intt. Carriage & Framing Shaft Assembly

CI – A – 30 & CI – A – 20

Fig–5

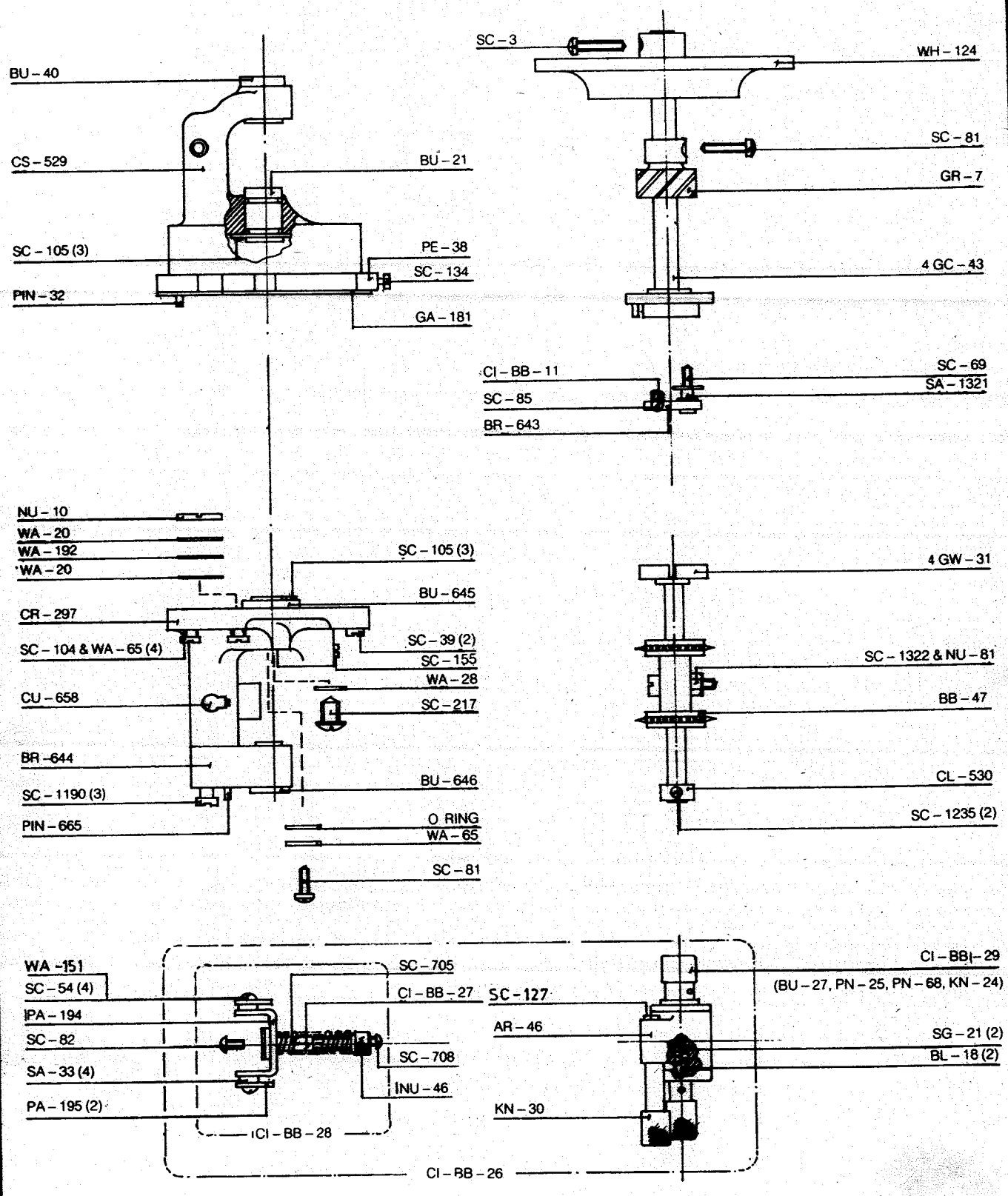
Film Trap Assembly
AI – E – 10





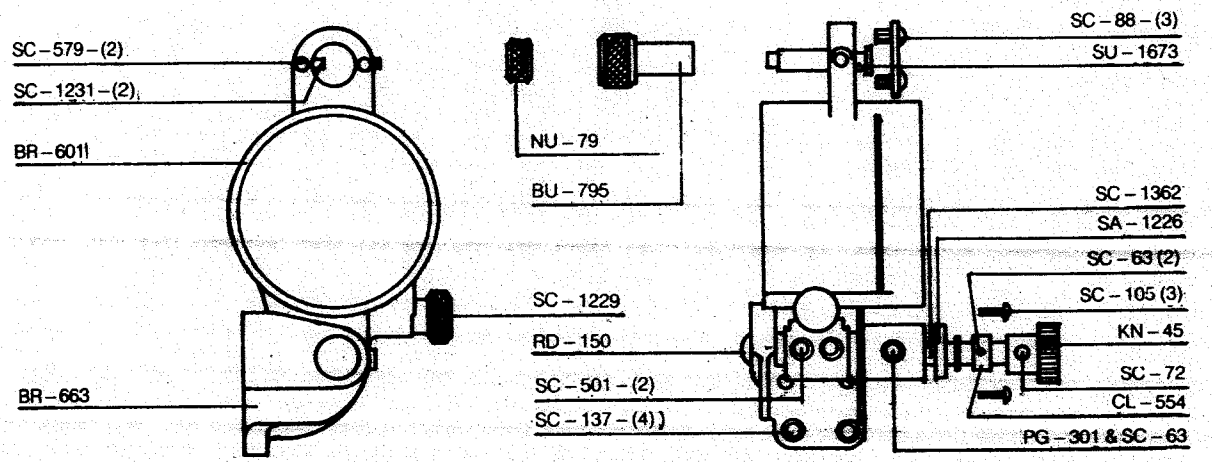
Film Trap Support Assembly
AI – E – 70

Fig–6

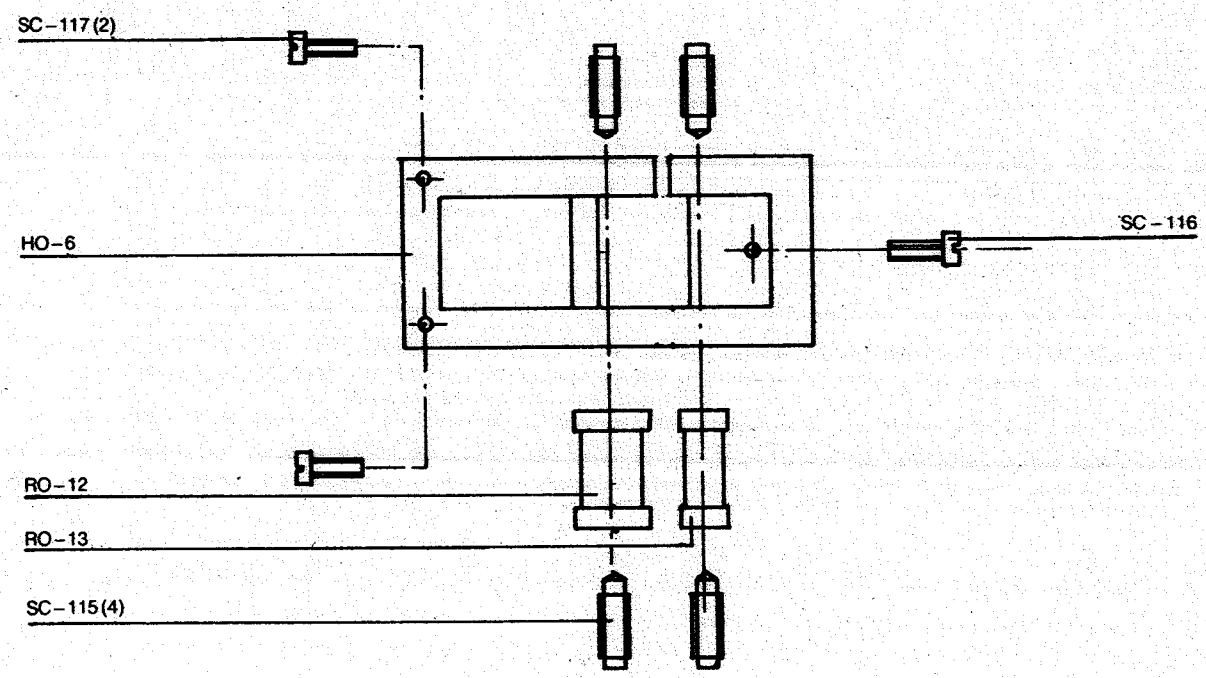


Intt. Movement Assembly
HI – BB – 30

Fig–7

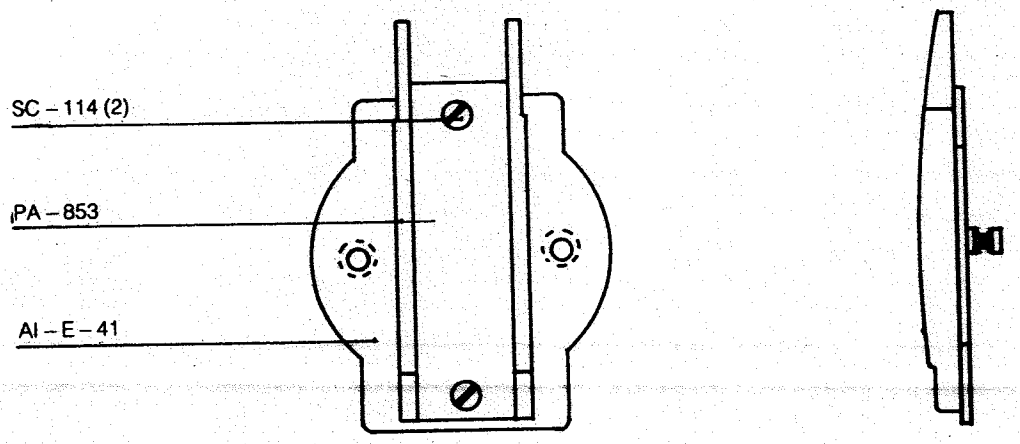


Lens Mount Assembly
HI – A – 60

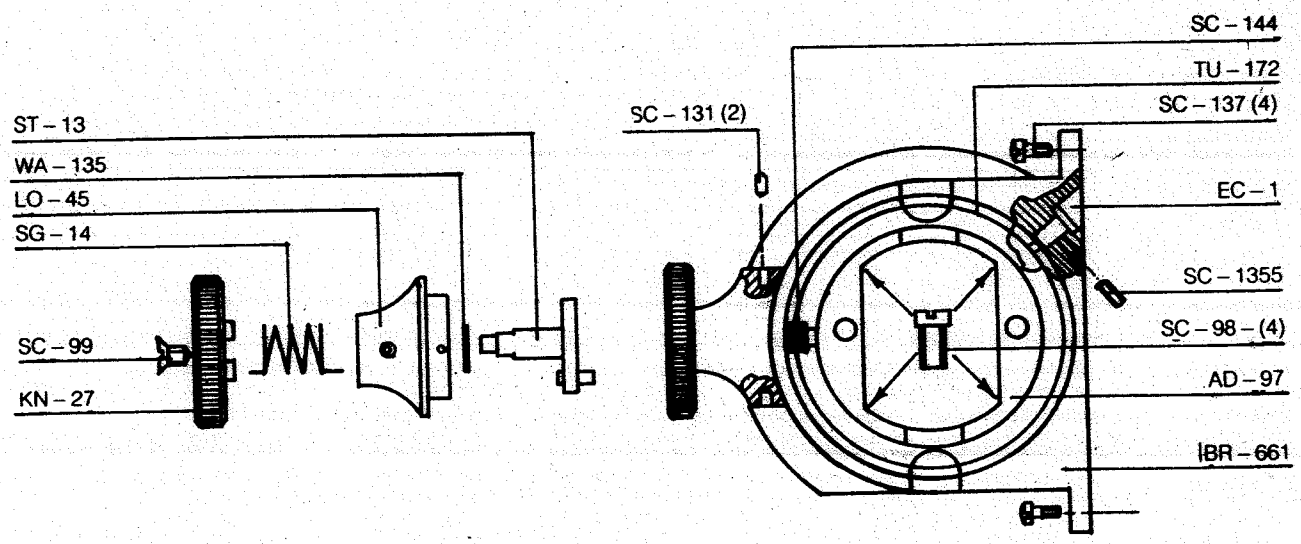


Upper Magazine Holder Assembly
CI – A – 14

Fig–8

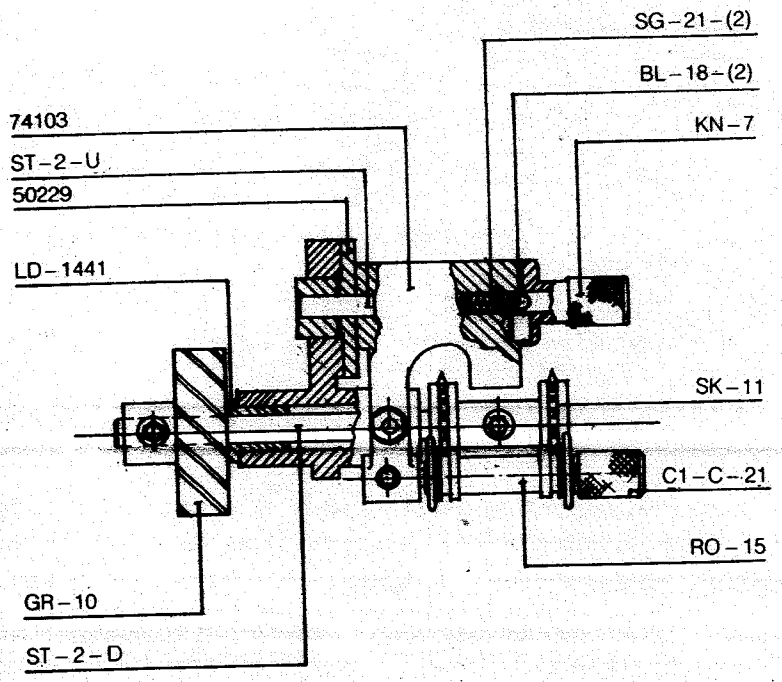


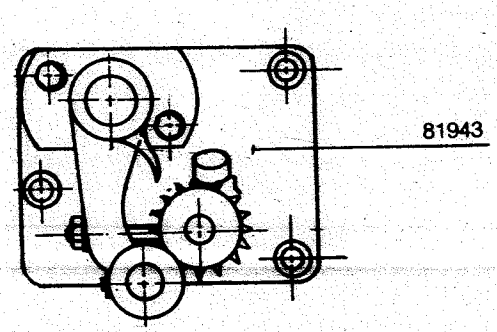
Film Gate Assembly
AI – E – 40



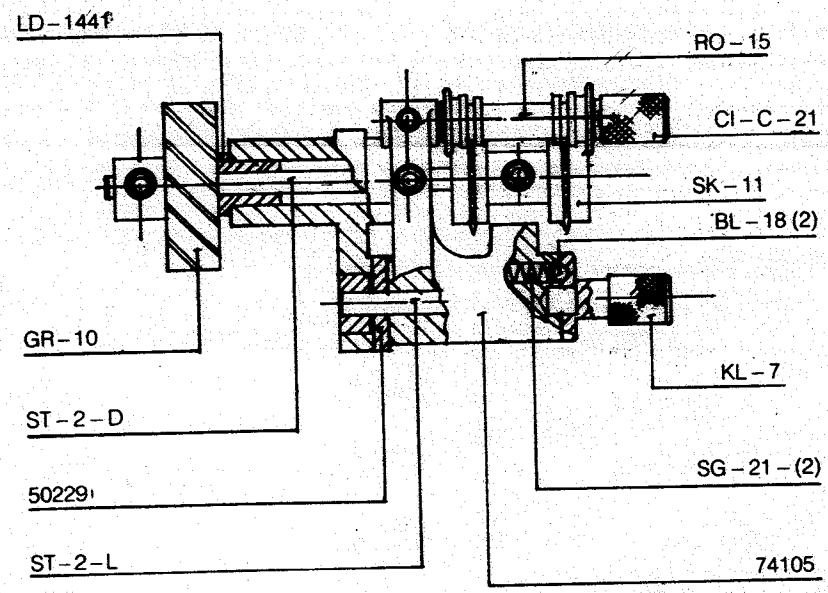
Film Gate Support Tube Bracket Assembly
HI – A – 70

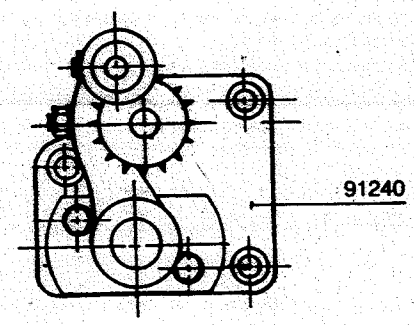
Fig–9





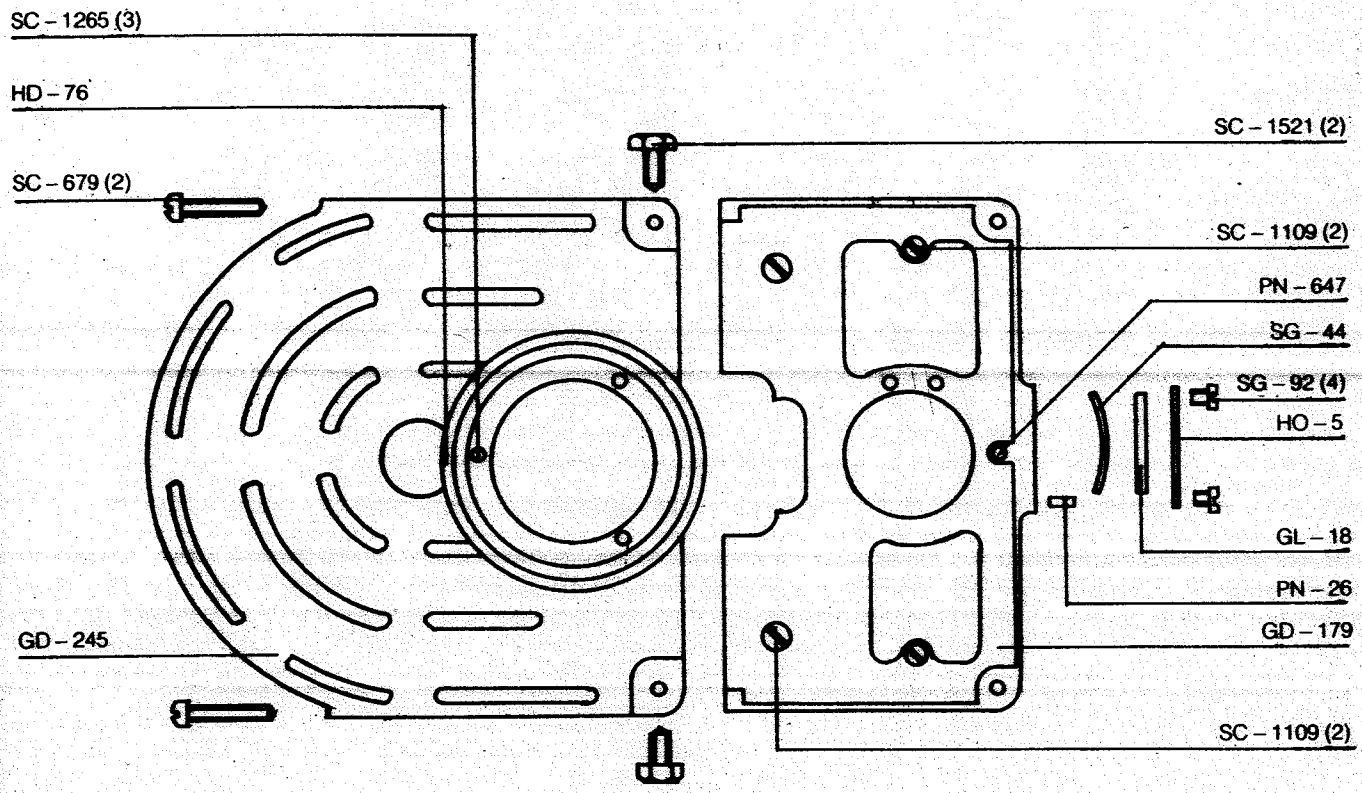
Upper Sprocket pad Arm Assembly
LSD – 91246



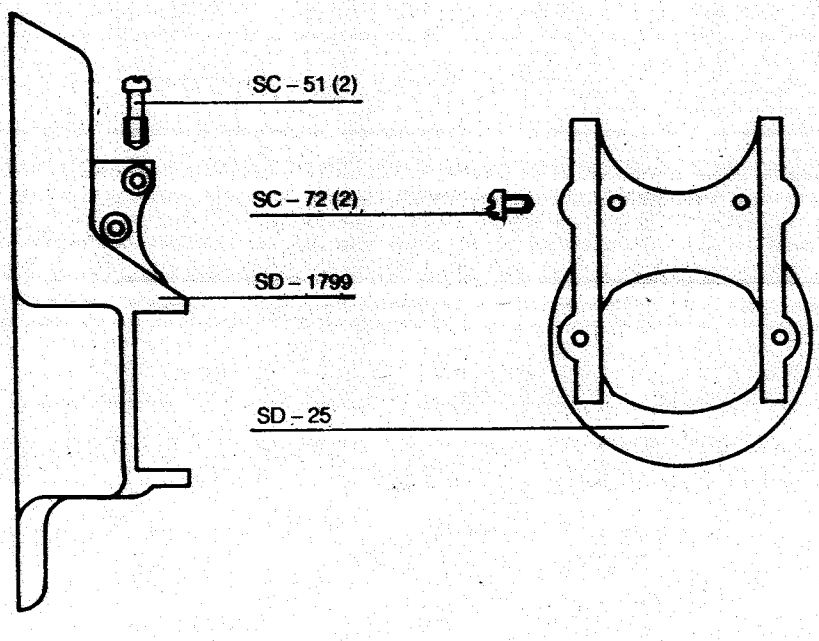


Lower Sprocket Pad Arm Assembly
LSD – 91254

Fig–10

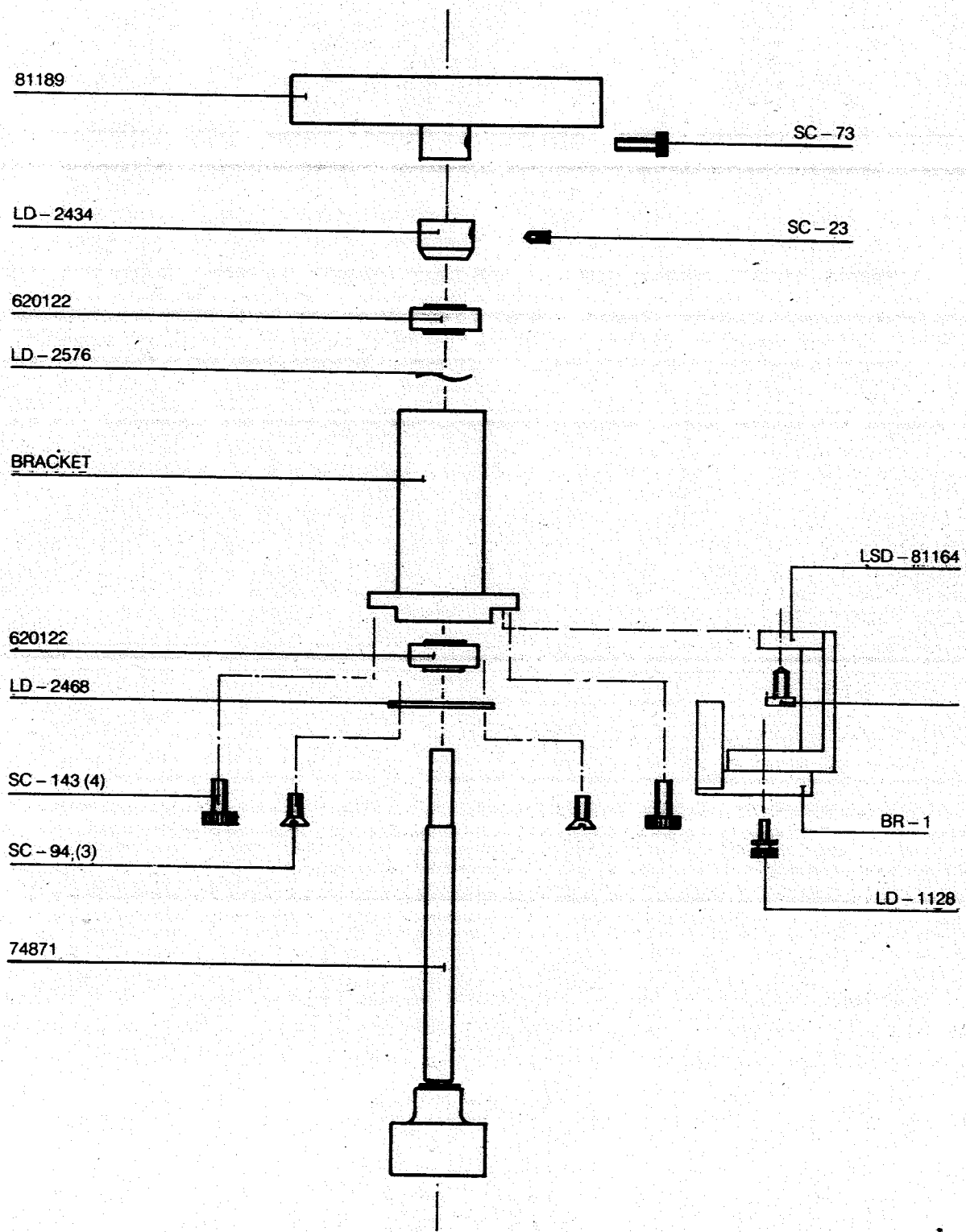


Shutter Guard Assembly
HI – D – 43



Gate Cover
AI – D – 70

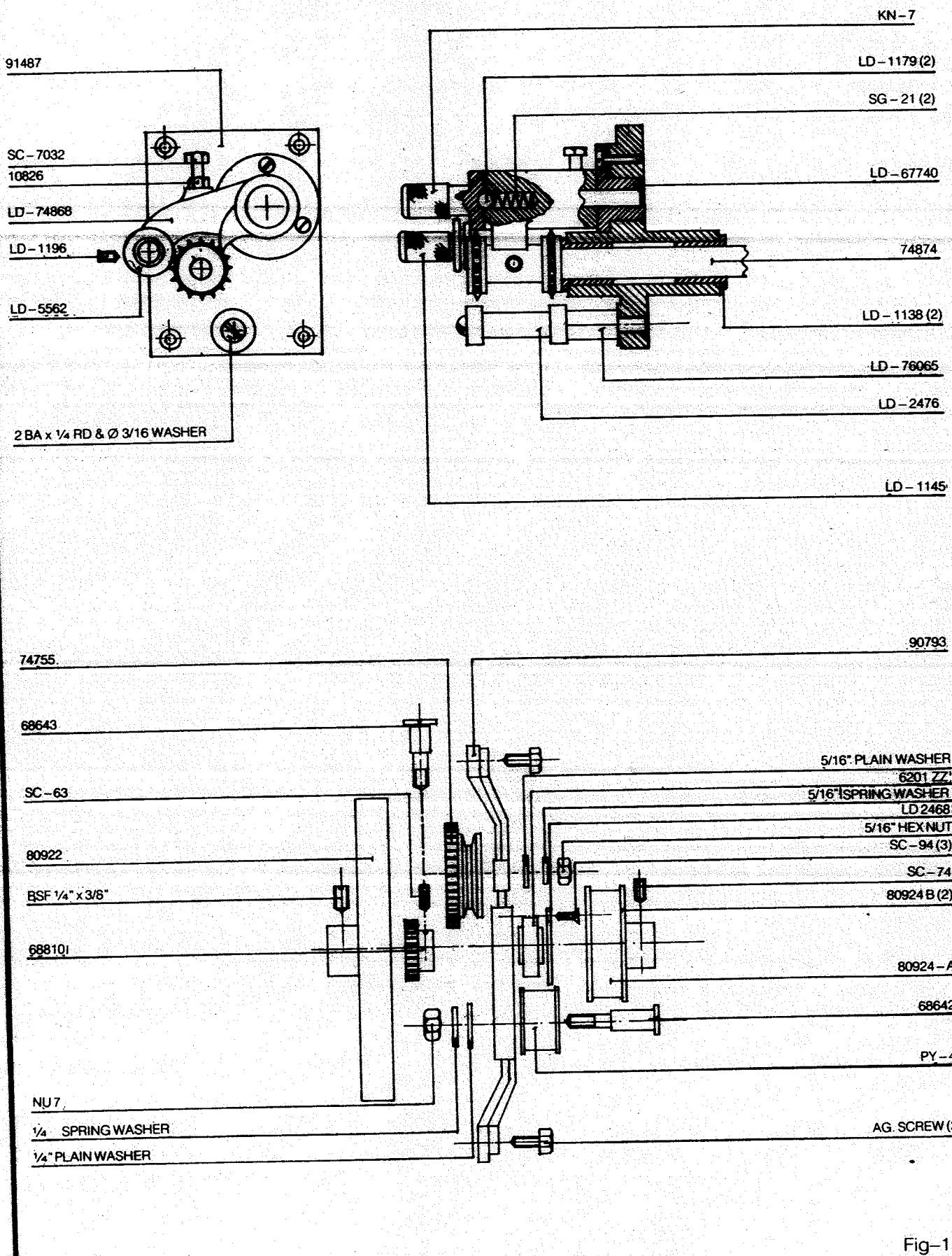
Fig–11



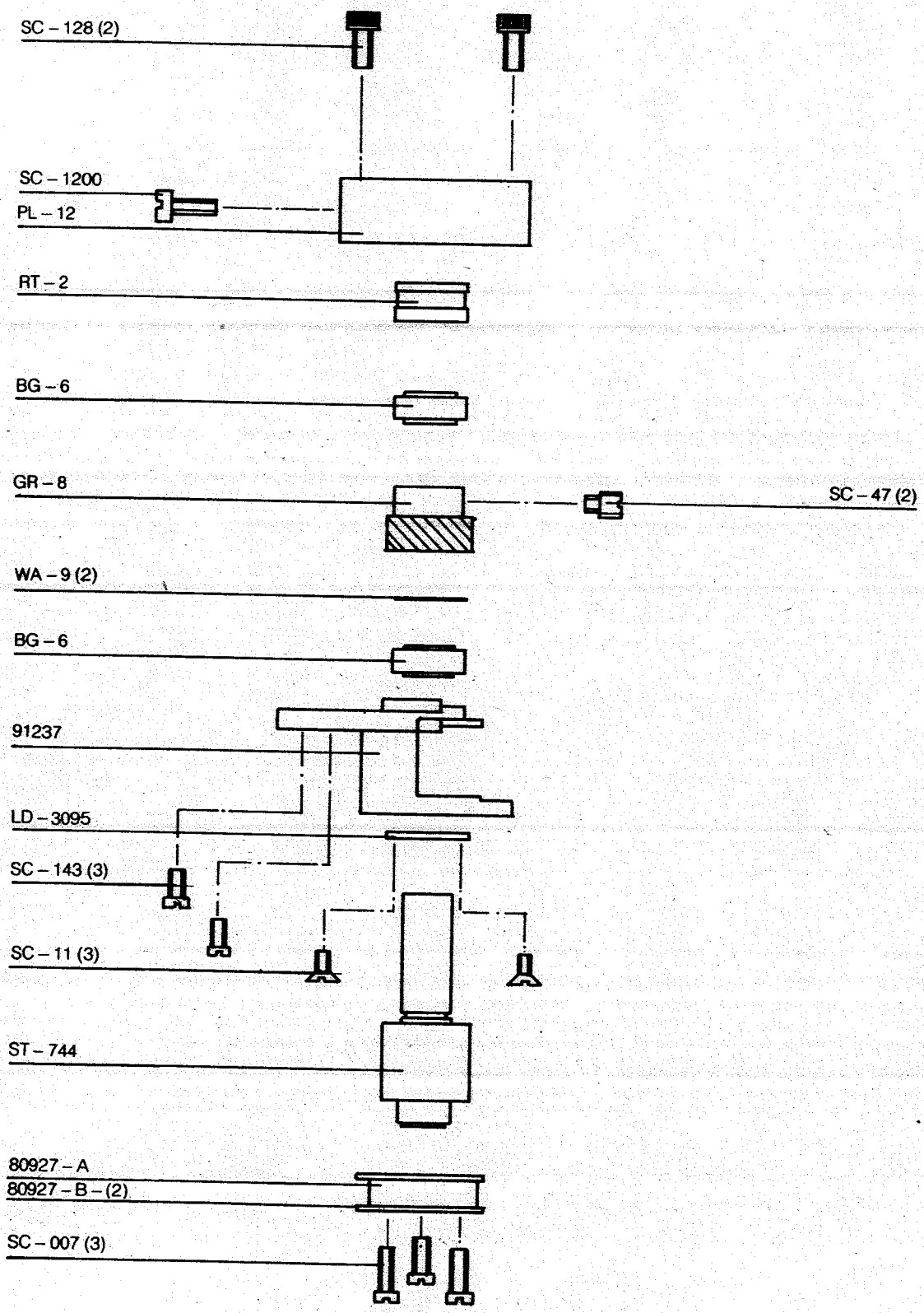
Sound Drum Holder Assembly

Fig–12

Lower Takeup Sprocket Shaft And Pad Arm Assembly



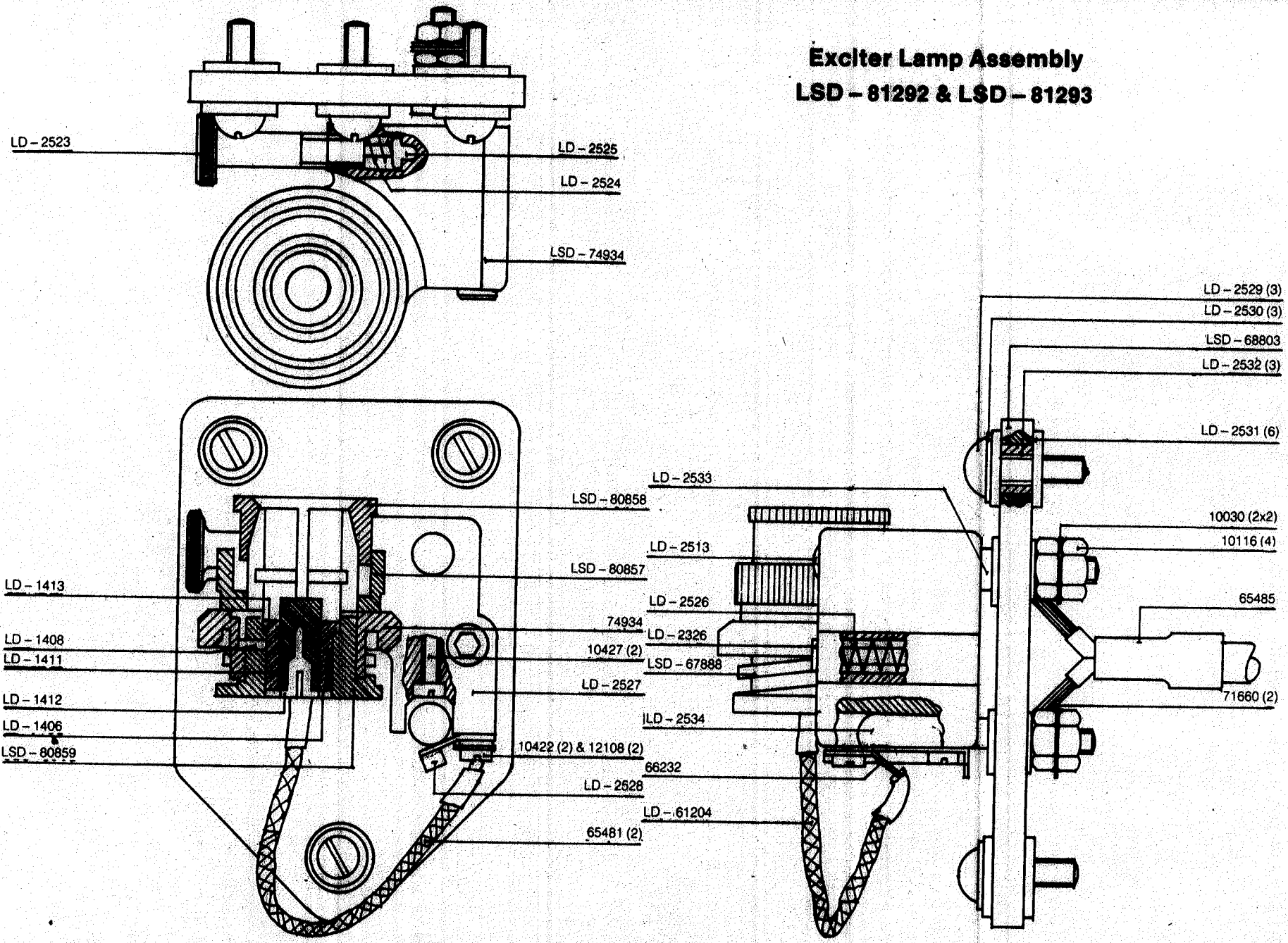
Fig–13



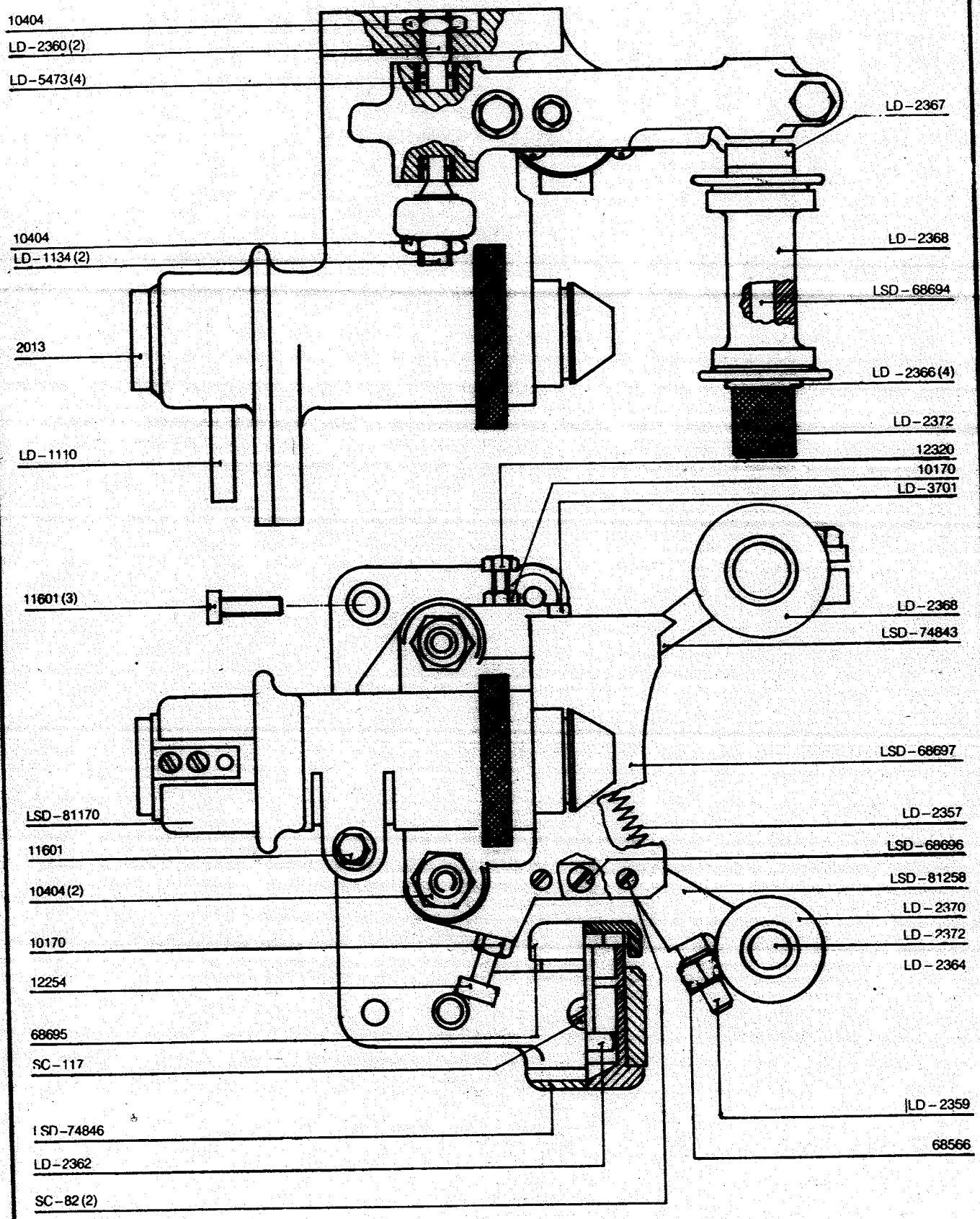
Main Drive Assembly
91254

Fig–14

Exciter Lamp Assembly
LSD – 81292 & LSD – 81293

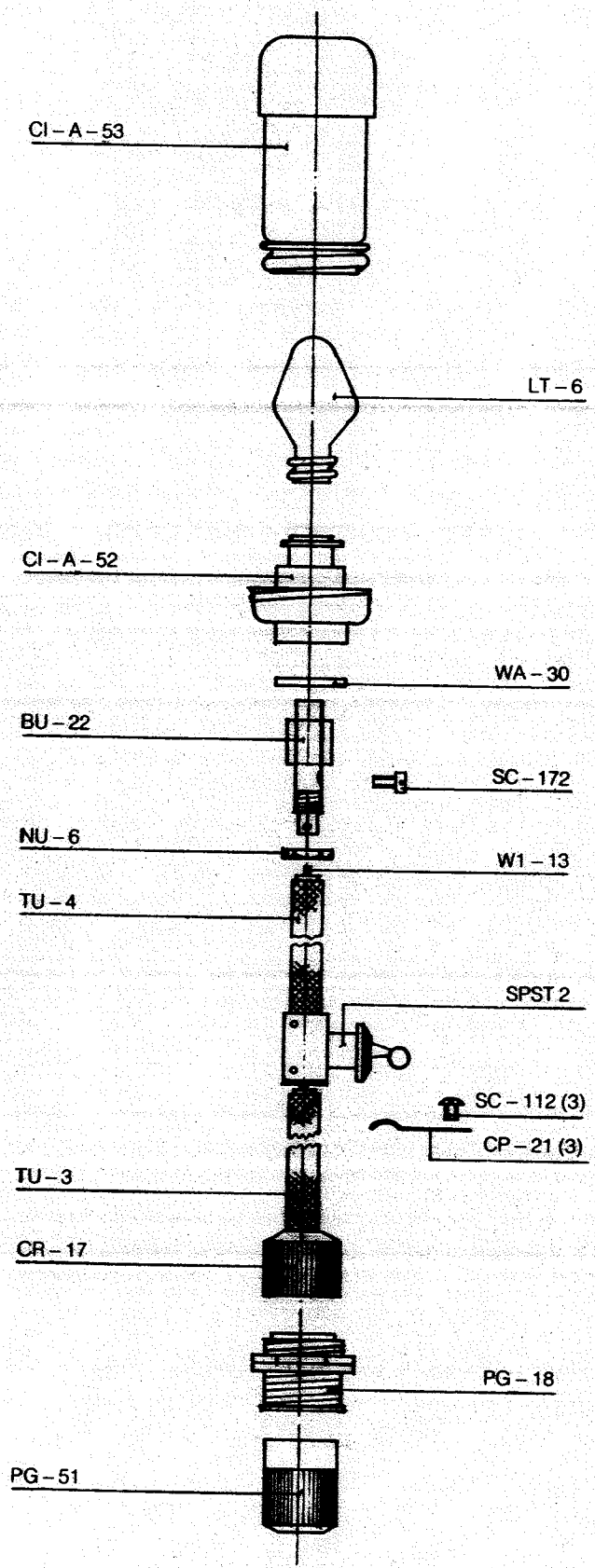


Fig–15



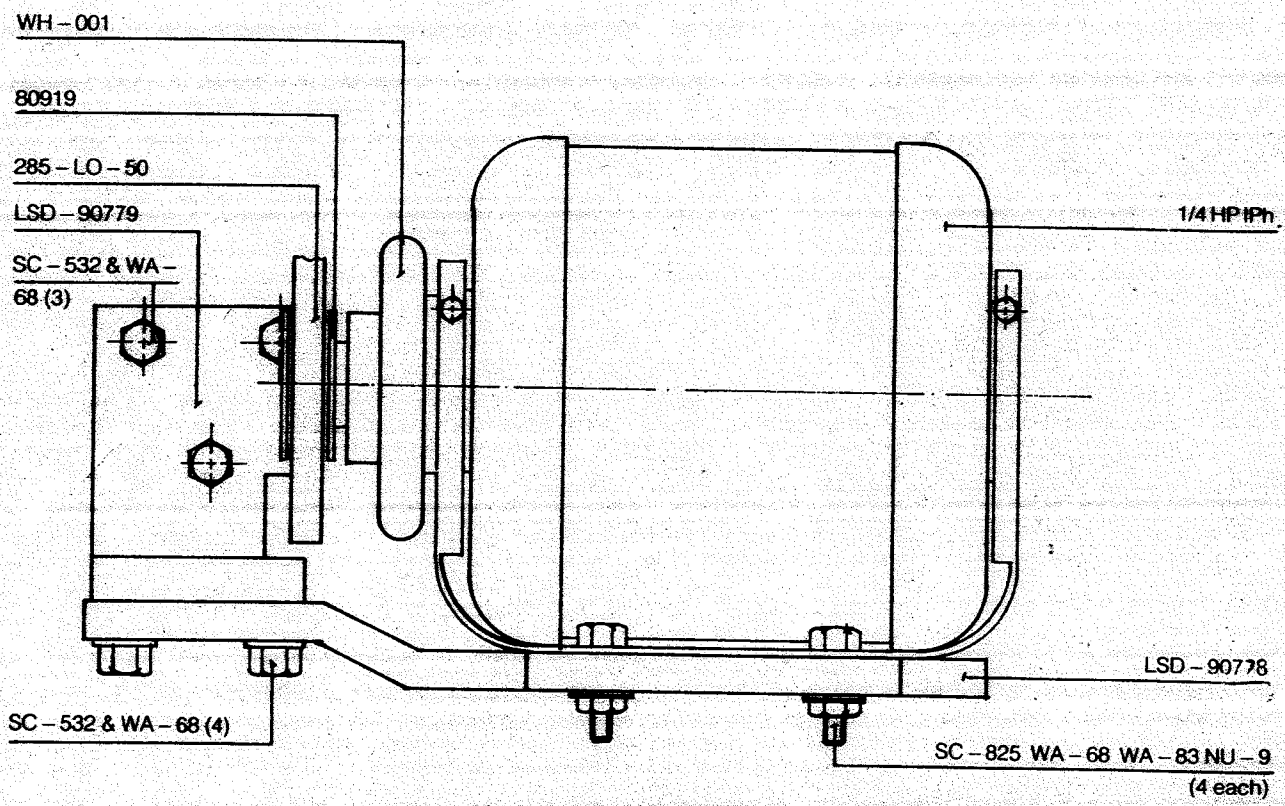
Damper Arm Assembly
90829

Fig-16



Pilot Lamp Assembly
CI – A – 50

Fig–17



Motor Assembly

Fig–18