

47. Co-Co

12 CYLINDER. 12 LDA-28C. TURBO & INTERCOOLED.

2580 HP. 325 → 800 RPM 890 OVERSPEEDS.

WIEGHT 113. 117. 122. TONS. FUEL. (800) 720 GALLS (+500 47/8).

BRAKE FORCE. 60 TONS.

WATER 260 GALLS. 30 HEADERTANK.

RA. 6 OR 7.

(COMPLETE SYSTEM) 12 LOW WATER.

ETH INDEX 66.

LUB OIL 154 GALLS.

MAX SPEED.

47/0/1/2/3. 75.

47/4/5/6/8. 95.

47/7. 100.

WATER PRESSURE SWITCH. 4 PSI. SHUT DOWN

RUN OIL PRESSURE SWITCH. 12 PSI. SHUT DOWN

START OIL PRESSURE SWITCH. 20 PSI. DIMS RED LIGHT.

TRACTION CURRENTS. WEAK FIELDS. 33-45-60 MPH.

CAB GAUGE READS. CONTINUOUS. MAXIMUM. OVERLOADS.

5000. SERIES PARALLEL. 2130. 3750. 4200.

10000. PARALLEL. 4260. 7500. 8400.

MOTORS ISOLATE.

BLOWER FAILED.

SERIES PARALLEL. 1400. ) NO MORE

2100. ) 1 HOUR ONLY.

PARALLEL. 3550. ) THAN 5 MINS.

4200. ) (KEEP IN GREEN)

IF 2 OR 5. MOTORS ISOLATED. NO WHEELSLIP INDICATION.

SOME LOCOS FITTED WITH ELECTRONIC SPEED INDICATING EQUIPMENT (RECOGNISED BY SQUARE BOX ON AXLE).

CONTROLS WEAK FIELDING. IE - FAULTY SPEEDO. LOOSE W/F.

RADIATOR FANS AND SHUTTERS HYDROSTATIC OIL OPERATED (SERK OIL) VIA THERMOSTATIC CONTROL VALVE.

SHUTTERS START TO OPEN. @ 158°

FANS START TO RUN. @ 168°

HIGH WATER TEMPERATURE LIGHT @ 198°

ANTI SLIP. (NO SAND) WORKS OFF AUTO BRAKE. IF STICKS ON ISOTATE BOTH. AUTO BRAKE BOGIE ISO COCKS. REMEMBER NO AUTO BRAKE ON ENGINE DSD, AWS. APPLICATION. RULES. FOR SECONDMAN. TO BE PROVIDED.

## CLASS 47 SIMPLIFIER.

### BLUE LIGHT BRIGHT NO. L.O.P.

- HIGH — WATER TEMP 185°
- LOW — WATER LEVEL 1/4 TANK APPROX.
- BLOW — 1 OR 2 BLOWERS STOPPED.
- PLUS 1 = GENERAL EARTH FAULT.

### BLUE LIGHT BRIGHT WHEN CONTROLLER OPENED, DIMS WHEN CLOSED. NO POWER.

#### CHECK ACROSS DESK :-

- MAIN AIR — IS COMPRESSOR RUNNING? IF NO TOGGLE GOV / CHECK FU
- BRAKE PIPE — TOGGLE GOV CHECK FOR LEAKS.
- CONTROL GOV — TOGGLE GOV — CHECK FOR LEAKS.
- VACUUM GOV — TOGGLE GOV — CHECK FOR LEAKS
- MAINTENANCE SWITCH — AT MAINTENANCE
- LOAD REGULATOR STUCK — SHUT DOWN LOCO OPEN BATT SWITCH. RE-STAR
- POWER EARTH FAULT — USE P.E.F.R. SWITCH — NO JOY ISOLATE MOTORS
- CHECK FOR WHEEL ROTATION.

#### LOCOMOTIVE SHUTS DOWN IN SERVICE....

- FUEL — LOCO WILL START HUNTING FIRST
- LUB OIL — BELOW 12 PSI R.O.P.S WILL OPERATE CHECK SUMP.
- OVERSPEED — CHECK ROUND ENGINE FOR DAMAGE RESET OVERSPEED.
- WATER — BELOW 4 PSI CHECK HEADER TANK LOOK FOR LEAKS.
- D.F.R. — RESET ONCE ONLY. E.T.S ONLY.

- O.V.R. — RESET.
- E.T.S DOOR OPEN MICRO SWITCH OPERATED.
- T.H.O.L FOLLOWED BY D.F.R.....

### YELLOW LIGHT BRIGHT

- WHEEL SLIP — EASE DOWN ON POWER USE WHEEL SLIP BUTTON.
- TRACTION MOTOR FAULT OCCURRING. — ISOLATE MOTORS. CHECK WHEEL ROTATION.

IF NO. 2 OR 5 MOTORS ISOLATED NO WHEEL SLIP PROTECTION.

ISOLATING COCKS DIESEL LOCOMOTIVES.

ENGINE CLASS	D.S.D.	2" COCK	AIR RELEASE	HORNS/W	BRAKE FEED CUT OFF	SANDS	MAIN RESERVOIR	STRAIGHT AIR	AUTO AIR BRAKE
08	Behind Rear Buffer Beam	Below Front Buffer Beam	Behind Cab Steps R.H. Side	Drivers Desk	R.H. Side Under Brake Valve	Cab by Speedo	Engine Compartment R.H. Side	—	—
20	Under Frame R.H. Side by Cab Steps	Above No3 T/Motor R.H. Side of Aux Gen	No1 Door R.H. Side Door Post or Drain Main Air	Und No1 Cab Behind Buffer Beam.No 2 End Above No 4 T/M	Under Cab L.H. Side by Cab Steps	Between No1 Bogie & Battery Box No1 L.H. Side No2 R.H. Side	Under Frame Centre of Loco	Under Cab For Both Bogies by No 4 Axle	No1 Front of L.H. Battery Box No2 Front of R.H. B/E.
31	No 1 Nose End	L.H. Side By Exhausters No 2 End	Boiler Room Above Cocker	In Each Cab L.H. Side Panel By Driver	—	Radator Arch Under Fan Shaft 1&2	Under Fan Arch B. Side	Under Sole Bar No3 & No 4 Axle Drivers Side of Loco	Under Sole Bar No3 & No4 Axle S/Mans Side
37	No 2 Nose End	No 2 Nose End S/Mans Side	B. Bank by Above Distributor	No1 & No2 Nose End Drivers Side	—	1&2 Bogies Sole Bar Between Fuel & Water Tanks	No1 Nose End.	Above No 2 & No 5 Axle S/Mans Side	Above Bogies Drivers Side
47	Equipment Room R/H Side B/Hind Door	EQUIPMENT ROOM R.H. Side above Triple Pump	Next to Dist: No 1 End Above Exhauster R.H. Side	No1 & No2 Cab S'Mans Side Above Heaters	No 1 End Behind Toilet No 2 End by Boiler Room Window	—	Equipment Room Below 2" Cock	Above Bogie on Sole Bar Behind Driver First Cock	Above Bogie on Sole Bar Behind Driver Second Cock
56	No DSD E70 No 1 End	—	Down & Bank Opposite Dipstick Or Above E 70	Brake Compartment	Brake Compartment	L.H. Side of E70 1&2	Brake Compartment	No1 End Brake Compartment No2 End Side of Parking Brake	No1 End Brake Compartment No2 End Side of Parking Brake
58	No DSD E70 Clean Air Comp	—	Clean Air Compt Under Distributors	No1 & No2 End S'Mans Side	E.70	Clean Air Compt 1&2 by E70	Clean Air Compartment	No1 & No2 Clean Air Compartment	No1 & No2 Clean Air Compartment
60	No DSD E70 Brake Frame	—	Brake Frame	No1 & No2 Cab Drivers Side	E70 Brake Frame	Brake Frame	Brake Frame	Brake Frame	Brake Frame

ISOLATING COCKS DIESEL LOCOMOTIVES.

ENGINE CLASS	D.S.D.	2" COCK	AIR RELEASE	HORNS/W	BRAKE FEED CUT OFF	SANDS	MAIN RESERVOIR	STRAIGHT AIR	AUTO AIR BRAKE
08		Behind Rear Buffer Beam	Below Front Buffer Beam	Behind Cab Steps R.H. Side	Drivers Desk	R.H. Side Under Brake Valve	Cab by Speedo	Engine Compartment R.H. Side	—
20		Under Frame R.H. Side by Cab Steps	Above No3 T/Motor R.H. Side of Aux Gen	No1 Door R.H. Side Door Post or Drain Main Air	Under No1 Cab Behind Buffer Beam.No 2 End Above No 4 T/M	Under Cab L.H. Side by Cab Steps	Between No1 Bogie & Battery Box No1 L.H.Side No2 R.H.Side	Under Frame Centre of Loco	Under Cab For Both Bogies by No 4 Axle
31		No 1 Nose End	L.H. Side By Exhausters No 2 End	Boiler Room Above Cooker	In Each Cab L.H. Side Panel By Driver	Radator Arch Under Fan Shaft 1&2	Under Fan Arch B.Side	Under Sole Bar No3 & No 4 Axle Drivers Side of Loco	Under Sole Bar No3 & No4 Axle S/Mans Side
37		No 2 Nose End	No 2 Nose End S/Mans Side	B. Bank by Above Distributor	No1 & No2 Nose End Drivers Side	1&2 Bogies Sole Bar Between Fuel & Water Tanks	No1 Nose End.	Above No 2 & No 5 Axle S/Mans Side	Above Bogies Drivers Side
47		Equipment Room R/H Side B/Hind Door	EQUIPMENT ROOM R.H. Side above Triple Pump	Next to Dist: No 1 End Above Exhauster R.H. Side	No1 & No2 Cab S/Mans Side Above Heaters	—	Equipment Room Below 2" Cock	Above Bogie on Sole Bar Behind Driver First Cock	Above Bogie on Sole Bar Behind Driver Second Cock
56		No DSD E70 No 1 End	—	Down A Bank Opposite Dipstick Or Above E 70	Brake Compartment	L.H. Side of E70 1&2	Brake Compartment	No1 End Brake Compartment No2 End Side of Parking Brake	No1 End Brake Compartment No2 End Side of Parking Brake
58		No DSD E70 Clean Air Comp	—	Clean Air Compt Under Distributors	No1 & No2 End S/Mans Side	E.70	Clean Air Compartment	No1 & No2 Clean Air Compartment	No1 & No2 Clean Air Compartment
60		No DSD E70 Brake Frame	—	Brake Frame	No1 & No2 Cab Drivers Side	E70 Brake Frame	Brake Frame	Brake Frame	Brake Frame

Bescot Traction

PRESSURE CHARGING. TURBO-CHARGER.

charging Air  
Leaves  
(12/15)

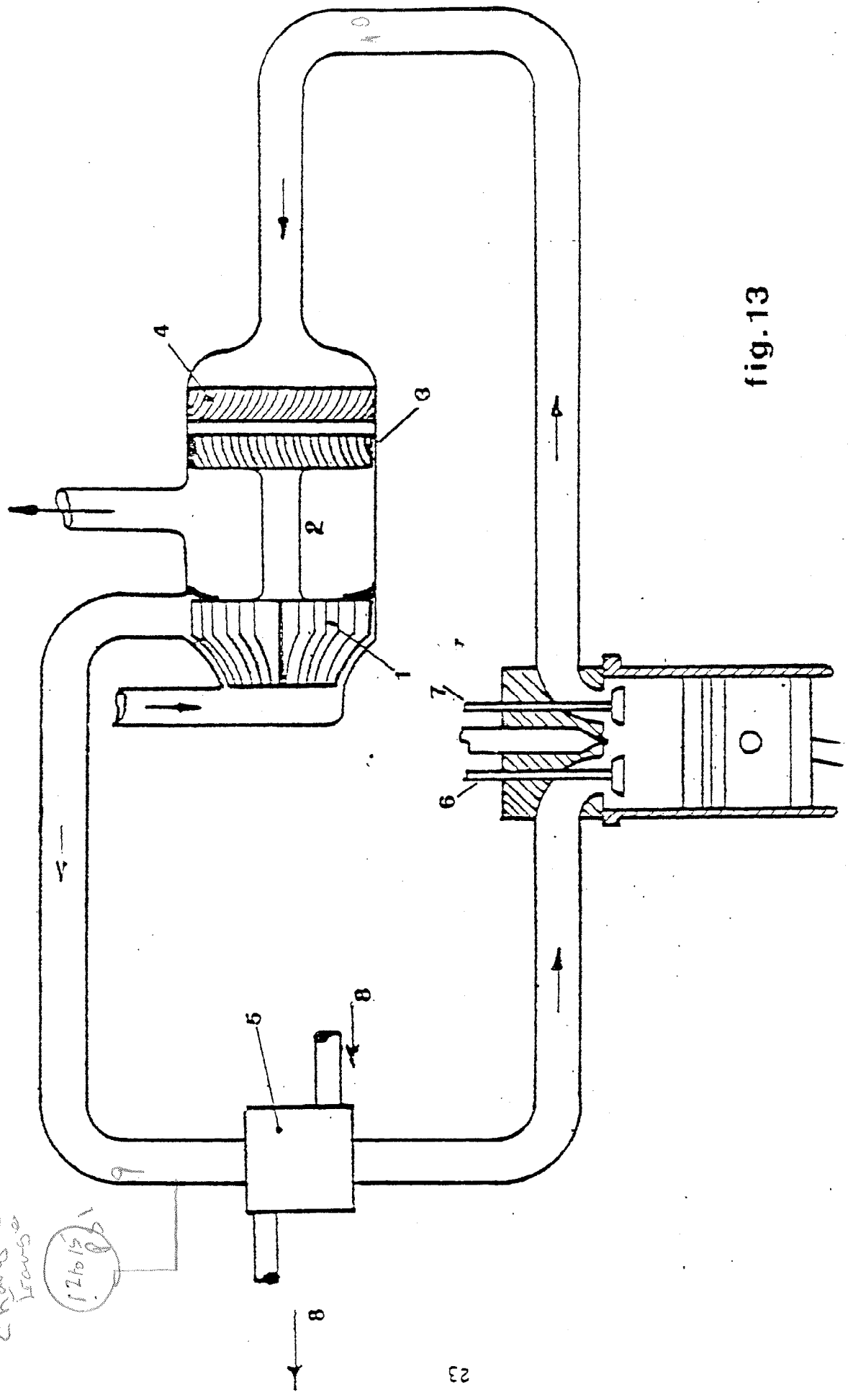
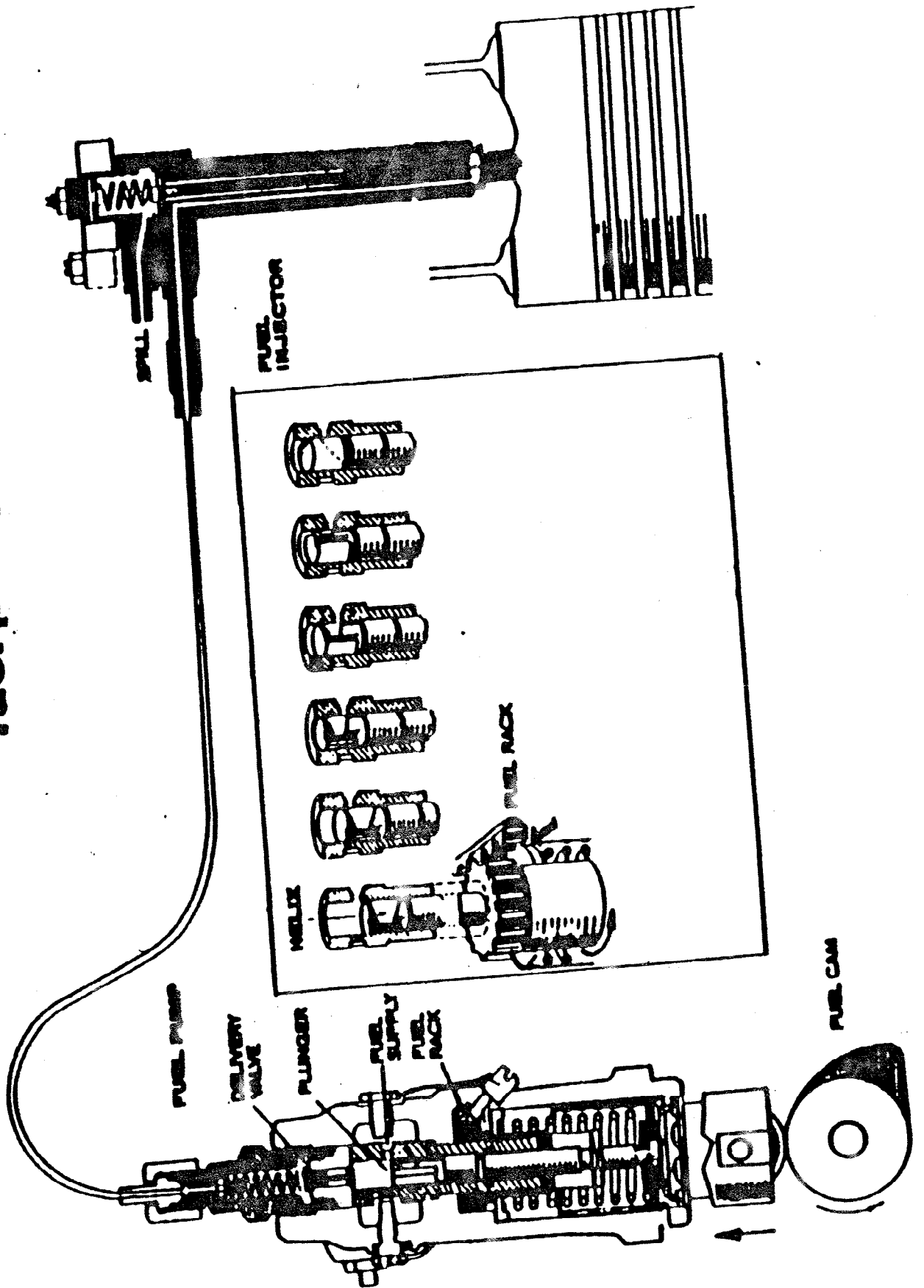


fig. 13

# fuel pump and injector



SULZER ENGINE FUEL PUMP (Additional information)

The foregoing text has described and illustrated the operation of a TYPICAL Fuel Injection System.

There is, however, slight differences to be found on a Sulzer engine. The differences are as follows:-

- (1) There is only one port opening in the barrel of the pump termed the "spill port".
- (2) A Bryce type plunger is fitted. This type of plunger has a double helix but there is little difference in it's operating characteristic to that of the single helix plunger.

ISOLATION OF FUEL PUMPS

On Sulzer engines any individual pump may be isolated in the event of a defective injector or it's associated pipe.

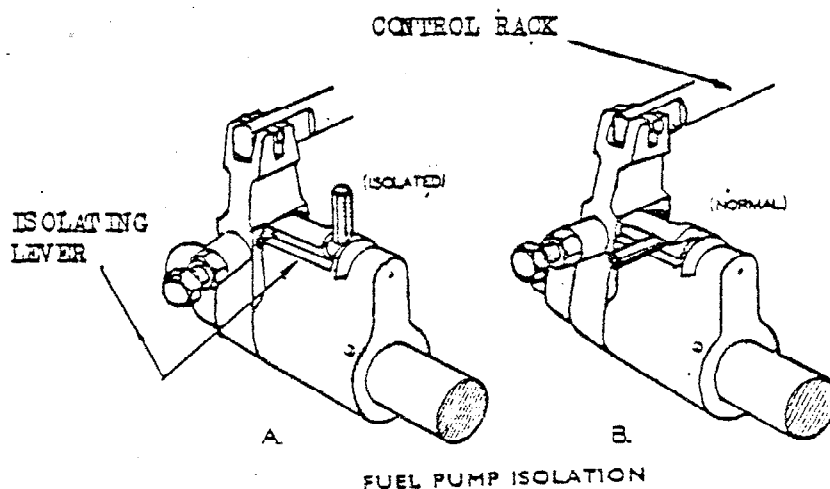
Only one injector per bank may be isolated at any one time.

Isolation procedure is as follows:-

- (a) Remove the cover from the fuel pump gallery.
- (b) Push the isolating lever to the right and lock it by pushing towards the engine.
- (c) Push the fuel pump control rack right in towards the engine.

To re - engage the fuel pump :-

- (a) Pull isolating lever forward.
- (b) Gently pull out the control rack on the pump until the lever springs into it's normal position for running.

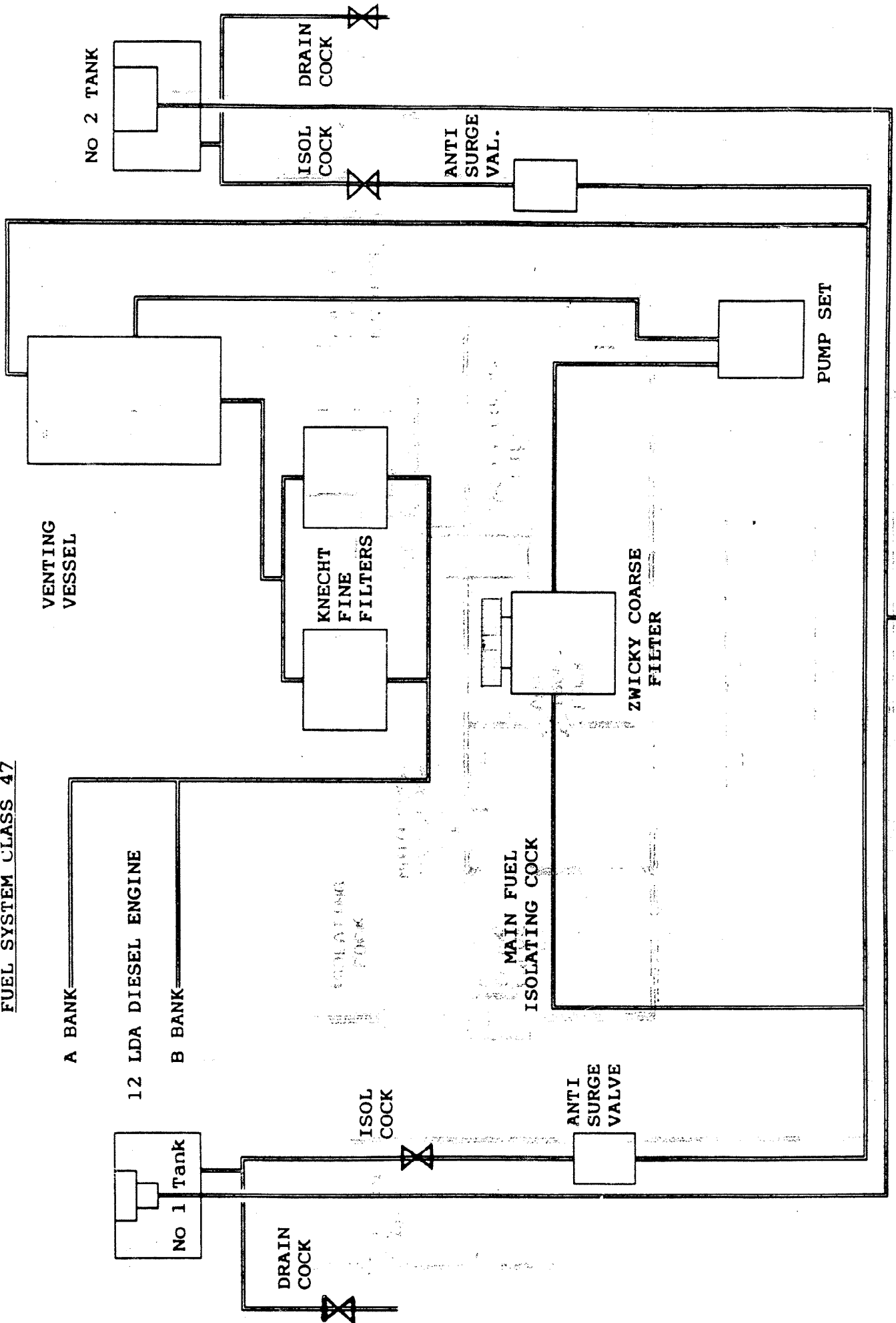


ISOLATED

NORMAL

fig. 14

FUEL SYSTEM CLASS 47



# MODIFIED FUEL SYSTEM

