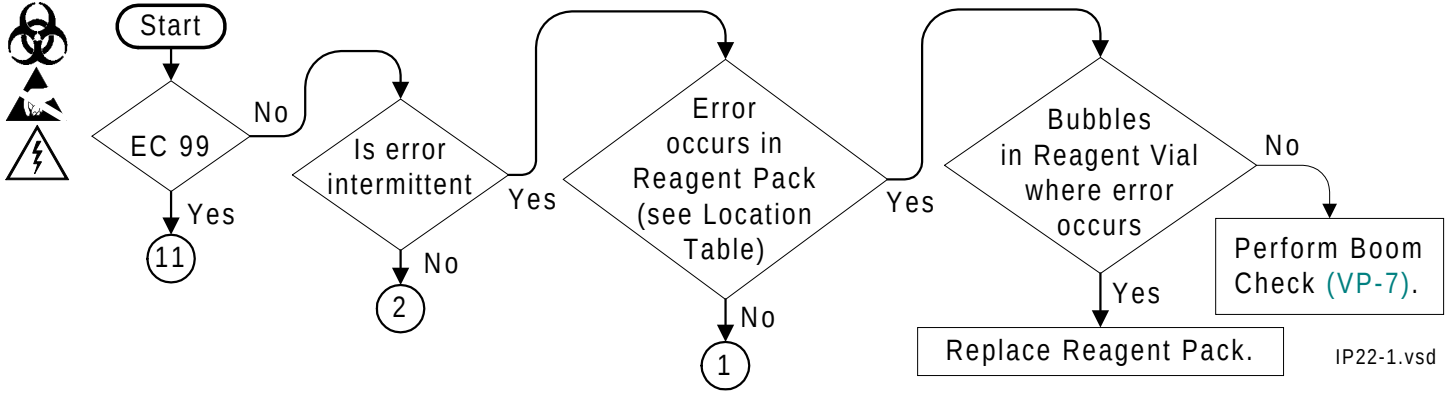
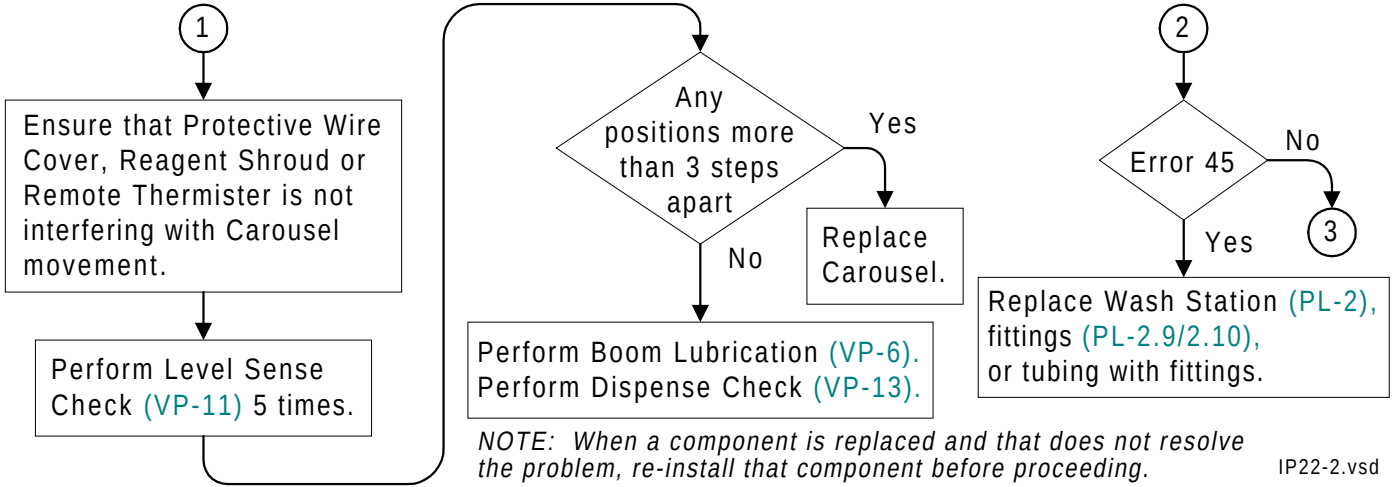
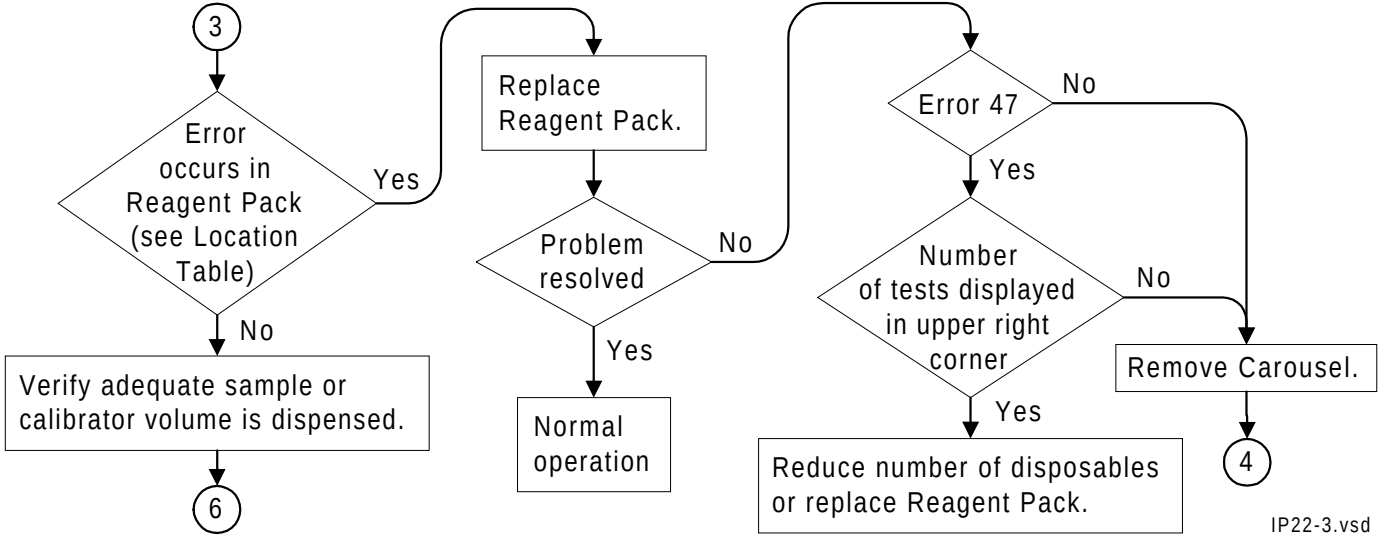
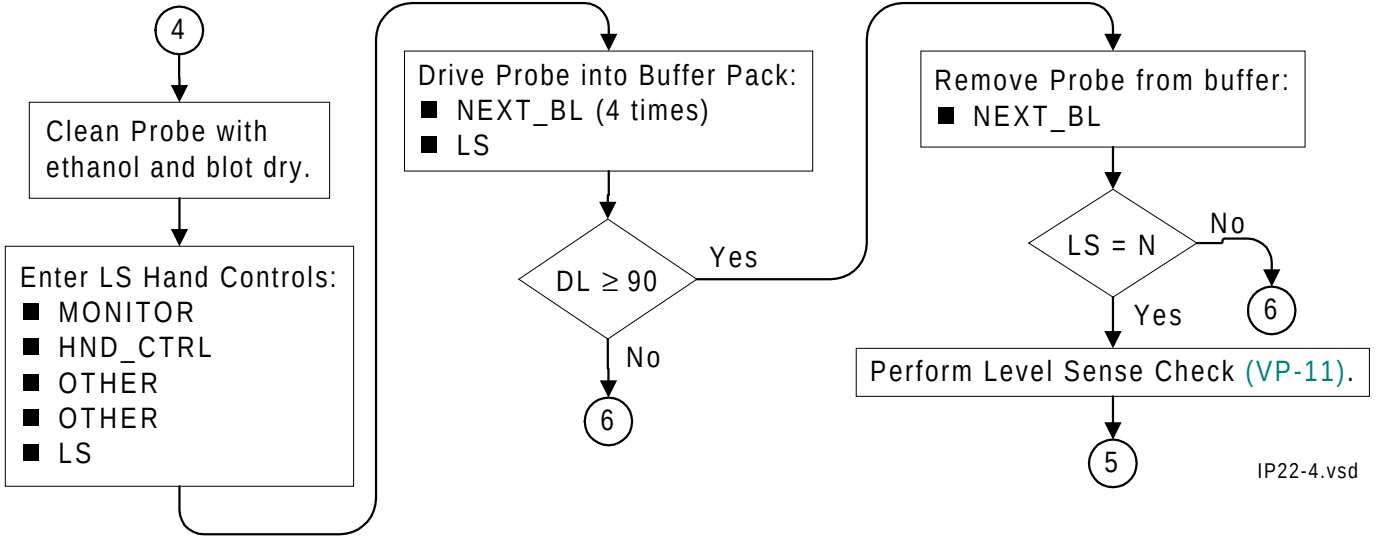
IP-22 Error codes 45, 46, 47, 52, 78, 97, 99 (pg 1 of 10)

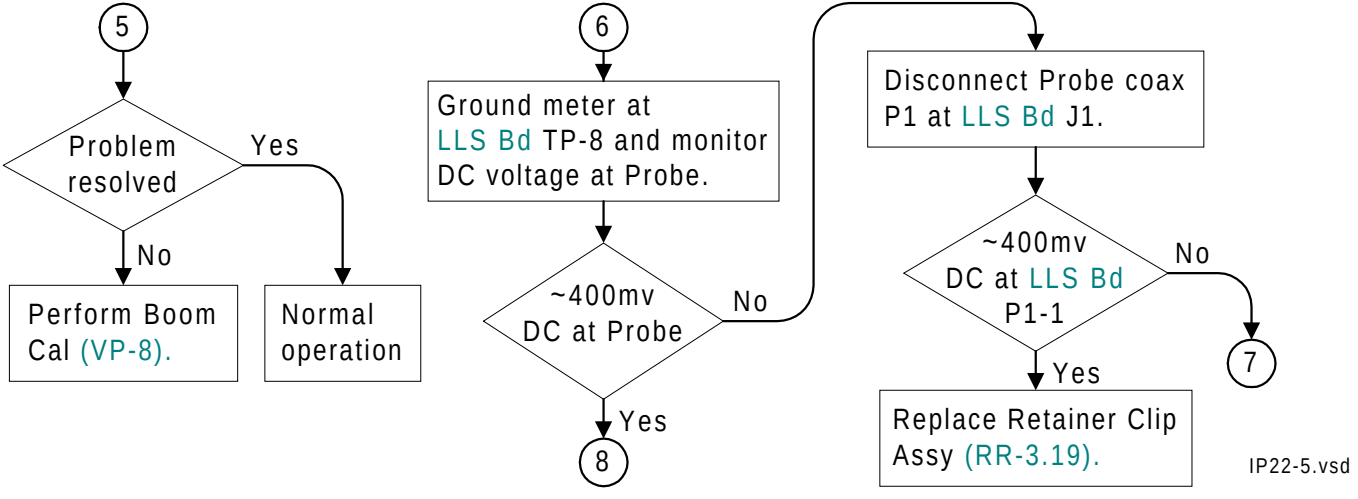
EC-45: Wash Station overflow
EC-46: Liquid level too high
EC-47: Reagent insufficient/empty XXXX
EC-52: Level Sense not found XXXX
EC-78: No Sample/Reagent found XXXX
EC-97: Level Sense range error XXXX
EC-99: Level Sense hardware error

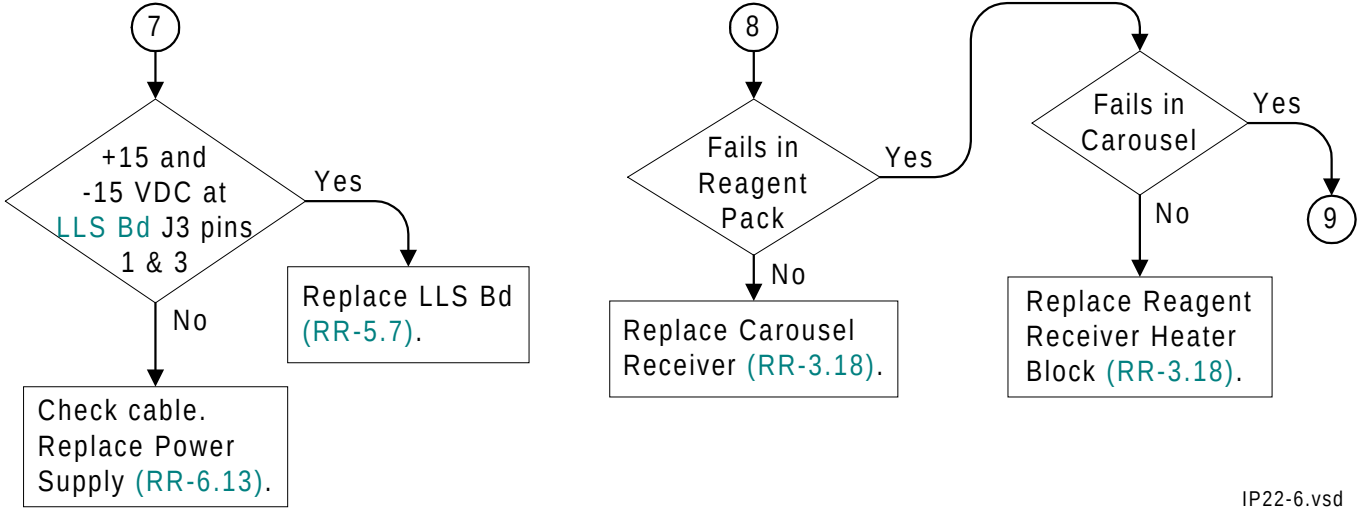


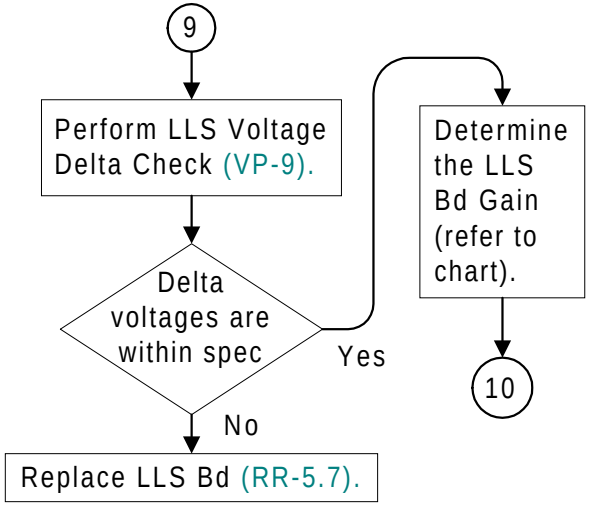

1
Ensure that Protective Wire Cover, Reagent Shroud or Remote Thermister is not interfering with Carousel movement.
Perform Level Sense Check (VP-11) 5 times.
Any positions more than 3 steps apart
Yes
Replace Carousel.
No
Perform Boom Lubrication (VP-6).
Perform Dispense Check (VP-13).
2
Error 45
No
3
Yes
Replace Wash Station (PL-2), fittings (PL-2.9/2.10), or tubing with fittings.
NOTE: When a component is replaced and that does not resolve the problem, re-install that component before proceeding.
IP22-2.vsd


3
Error occurs in Reagent Pack (see Location Table)
Yes
No
Verify adequate sample or calibrator volume is dispensed.
6
Replace Reagent Pack.
Problem resolved
No
Yes
Normal operation
Error 47
No
Yes
Number of tests displayed in upper right corner
No
Yes
Reduce number of disposables or replace Reagent Pack.
Remove Carousel.
4
IP22-3.vsd


4
Clean Probe with ethanol and blot dry.
Enter LS Hand Controls:
MONITOR
HND_CTRL
OTHER
OTHER
LS
Drive Probe into Buffer Pack:
NEXT_BL (4 times)
LS
DL ≥ 90
Yes
No
6
Remove Probe from buffer:
NEXT_BL
LS = N
No
Yes
6
Perform Level Sense Check (VP-11).
5
IP22-4.vsd


5
Problem resolved
Yes
No
Perform Boom Cal (VP-8).
Normal operation
6
Ground meter at LLS Bd TP-8 and monitor DC voltage at Probe.
~400mv DC at Probe
No
Yes
8
Disconnect Probe coax P1 at LLS Bd J1.
~400mv DC at LLS Bd P1-1
No
Yes
7
Replace Retainer Clip Assy (RR-3.19).
IP22-5.vsd

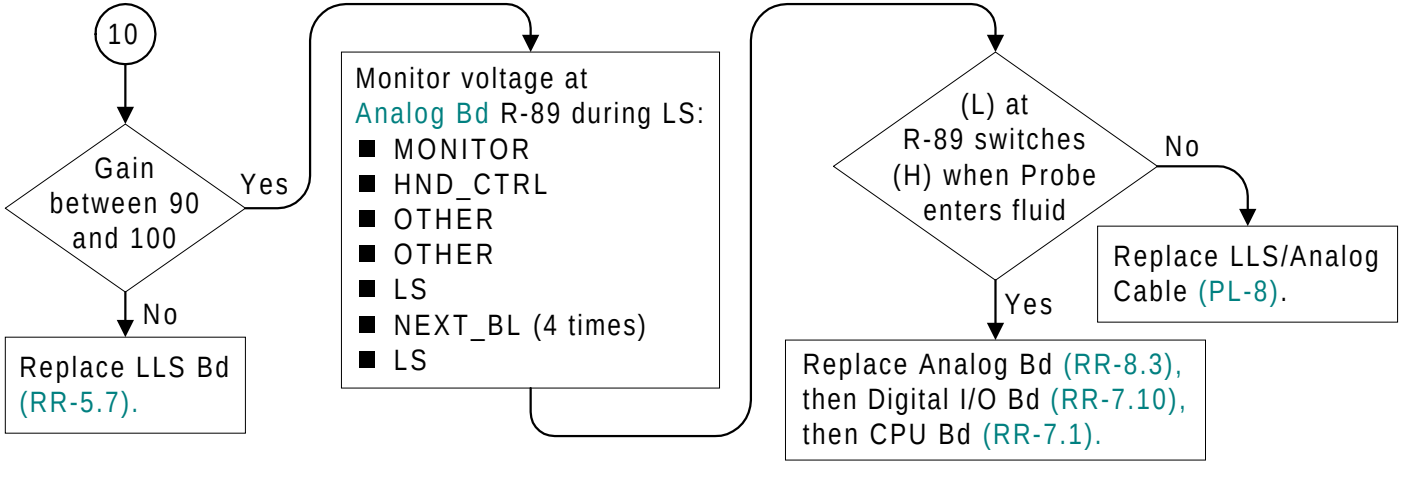

7
+15 and -15 VDC at LLS Bd J3 pins 1 & 3
Yes
Replace LLS Bd (RR-5.7).
No
Check cable. Replace Power Supply (RR-6.13).
8
Fails in Reagent Pack
Yes
No
Replace Carousel Receiver (RR-3.18).
Fails in Carousel
Yes
No
9
Replace Reagent Receiver Heater Block (RR-3.18).
IP22-6.vsd

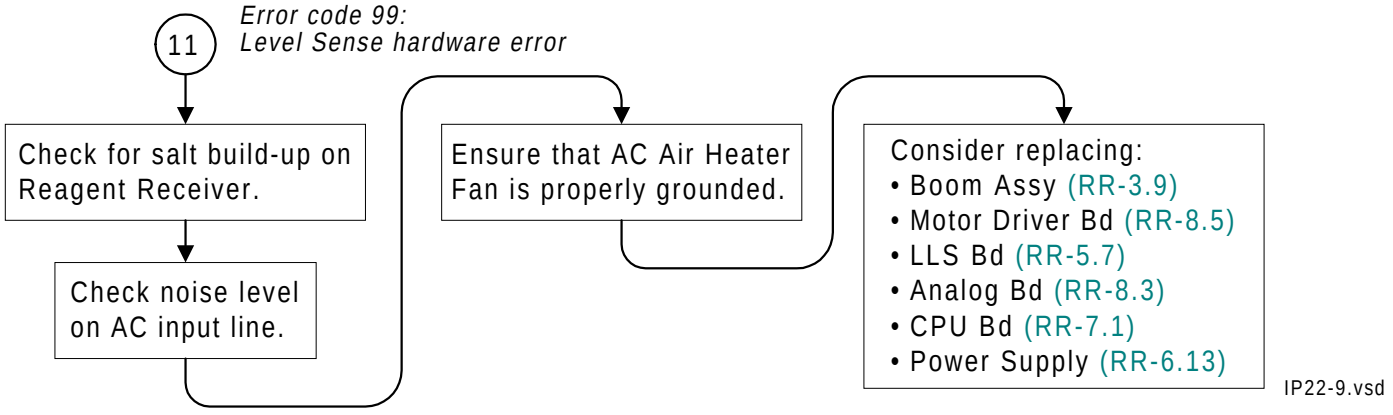


Determine the LLS Board Gain:

1. On the LLS Board move the jumper JU-1 from NOR to CAL.
2. Connect the positive lead of the multimeter to TP2 and the ground lead to TP8. Record the voltage (VDC) to the third decimal point if possible.
3. Press and hold the SWI switch on the LLS Board with a non-conductive object for 10 seconds.
4. Calculate the gain:
   GAIN = (Step 3 voltage - Step 2 voltage) * 28.28427
   The gain should be between 90 and 100.
5. Remove the multimeter.
6. Reset JU-1 from CAL to NOR.

IP22-7.vsd


10
Gain between 90 and 100
Yes
No
Replace LLS Bd (RR-5.7).
Monitor voltage at Analog Bd R-89 during LS:
MONITOR
HND_CTRL
OTHER
OTHER
LS
NEXT_BL (4 times)
LS
(L) at R-89 switches (H) when Probe enters fluid
No
Yes
Replace LLS/Analog Cable (PL-8).
Replace Analog Bd (RR-8.3), then Digital I/O Bd (RR-7.10), then CPU Bd (RR-7.1).
IP22-8.vsd


11
Error code 99:
Level Sense hardware error
Check for salt build-up on Reagent Receiver.
Check noise level on AC input line.
Ensure that AC Air Heater Fan is properly grounded.
Consider replacing:
• Boom Assy (RR-3.9)
• Motor Driver Bd (RR-8.5)
• LLS Bd (RR-5.7)
• Analog Bd (RR-8.3)
• CPU Bd (RR-7.1)
• Power Supply (RR-6.13)
IP22-9.vsd

Location Table

XXXX Location	XXXX Location	XXXX Location	XXXX Location
PARK Park	RGT 4 Reagent 4	MTRX Matrix	DSPW Dispense Well
	RGT 3 Reagent 3	VIAL Amplification Vial	RWC1 Reaction Well (1)
	RGT 2 Reagent 2	LCRW Reaction Well	PWC1 Predilution Well (1)
	RGT 1 Reagent 1		SPCM Sample Well (Specimen)