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## **TROUBLE SHOOTING GUIDE**

**For**

**140T GOTTWALD/JAMALPUR CRANE  
(New Design)**

**NOV - 2007**

**CRANE ORGANISATION  
EASTERN RAILWAY, LOCOMOTIVE WORKS  
JAMALPUR – 811214**

**PREFACE**

Crane organization/Jamalpur Workshop manufactures and overhauls following two designs of 140T DHBD Crane, under Transfer of Technology from M/s Gottwald/Germany.

- (i) Old design (also called 1986 design or with 'A' frame)
- (ii) New design (also called 1997 design or without 'A' frame)

This TROUBLE SHOOTING GUIDE is related to only HYDRAULICS (Chapter- 1.1 to 1.33), PNEUMATICS (Chapter- 2.1 to 2.6) and ELECTRICALS (Chapter- 3.1 to 3.13) for New Design Crane. This guide gives pictorial explanation of steps to be taken to troubleshoot different types of problems in simple languages.

Utmost care has been taken to ensure the correctness of informations. However the errors and omissions may be pointed out, to enable us to issue necessary amendments.

Suggestions are most welcome to help us update and upgrade this guide on continual basis.

This troubleshooting guide is the result of collective work from the Crane Organisation. We are especially grateful to Sri Rajendra Prasad, SSE/Crane Shop, Sri A. Guria, SSE/Crane Shop, Sri J. K. Sharma, SE/Crane Shop, Sri. Indradeo Kumar Mandal, JE-I/ Drawing Centre (Crane), and Sri. Vijay Kumar, JE-I/ Drawing Centre (Crane).

(U.Halder)  
Dy. CME (Crane)  
Jamalpur Loco Works

**Hydraulics**

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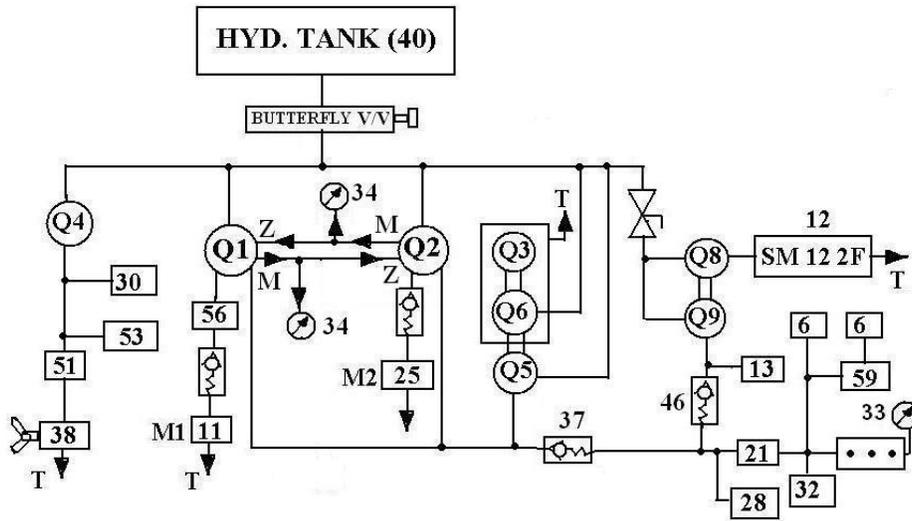
**Pneumatics**

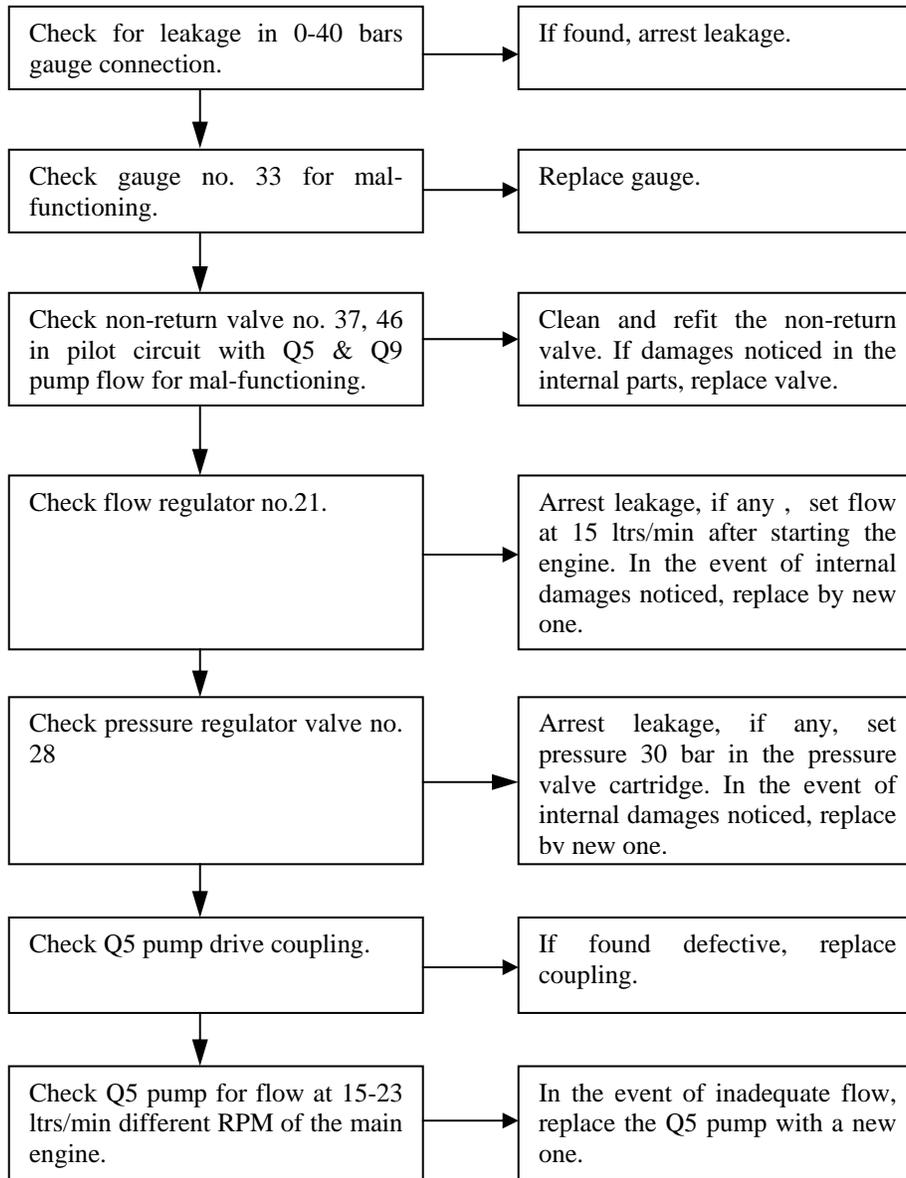
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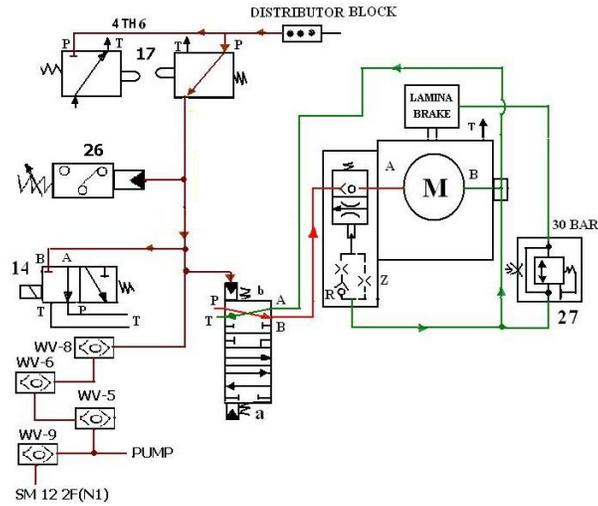
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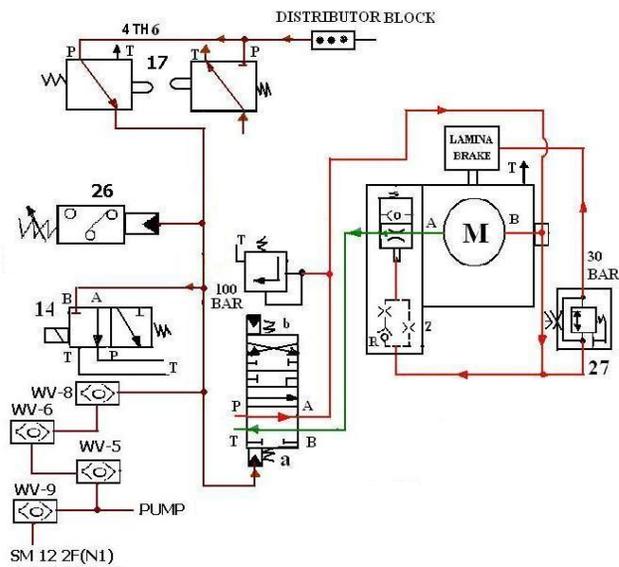


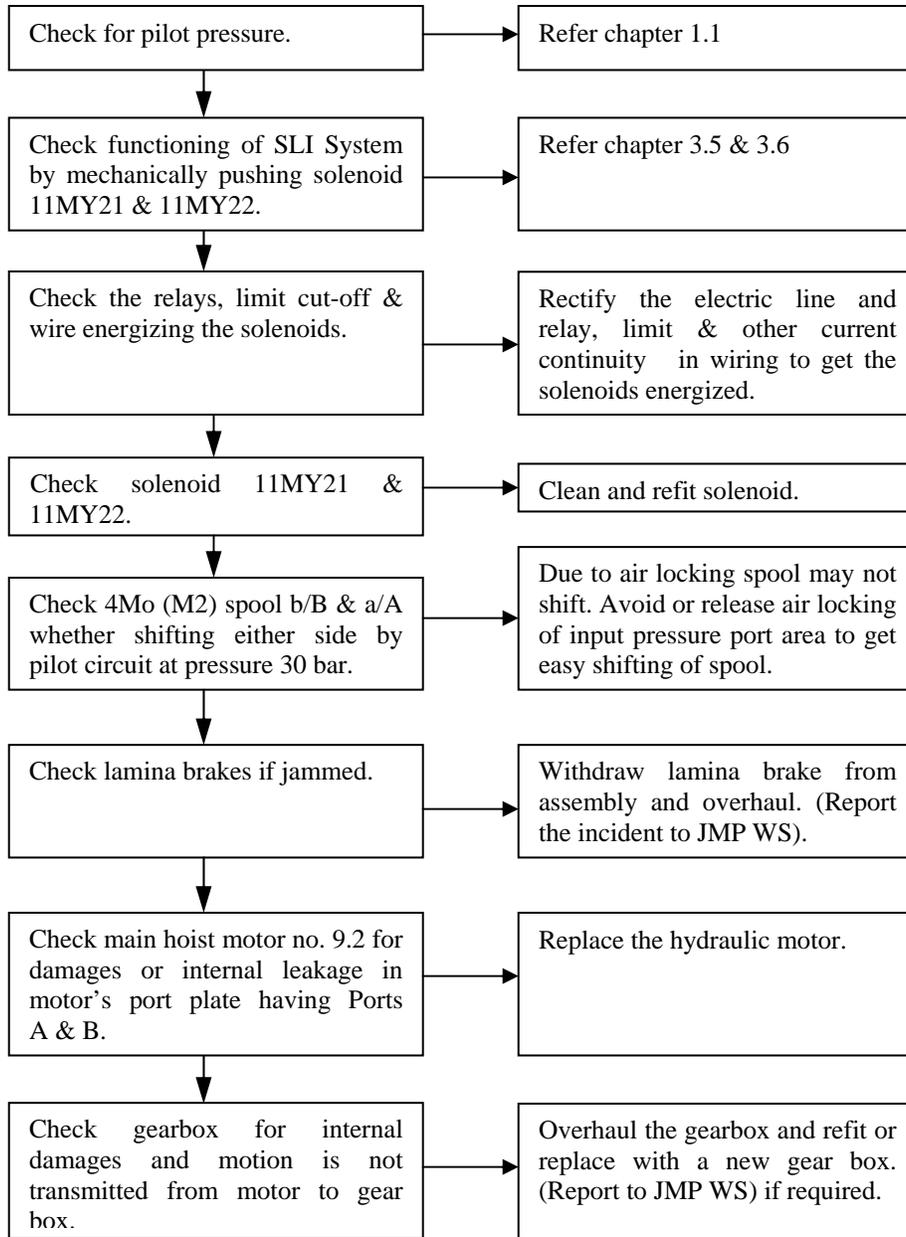


**Main Hoist Circuit Operation UP**

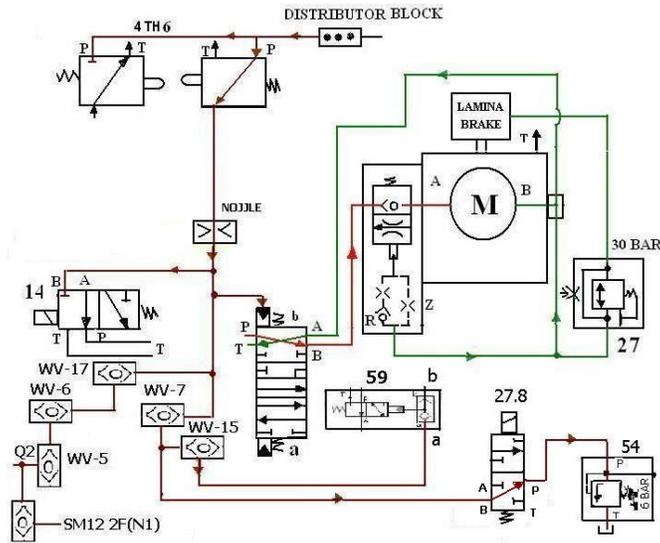


**Main Hoist Circuit Operation DN**

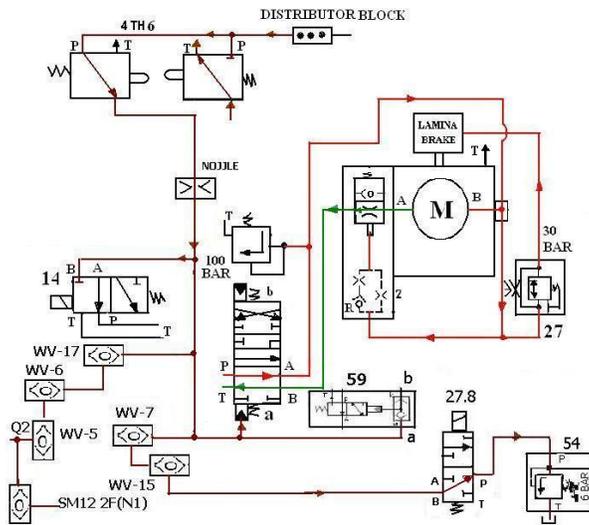


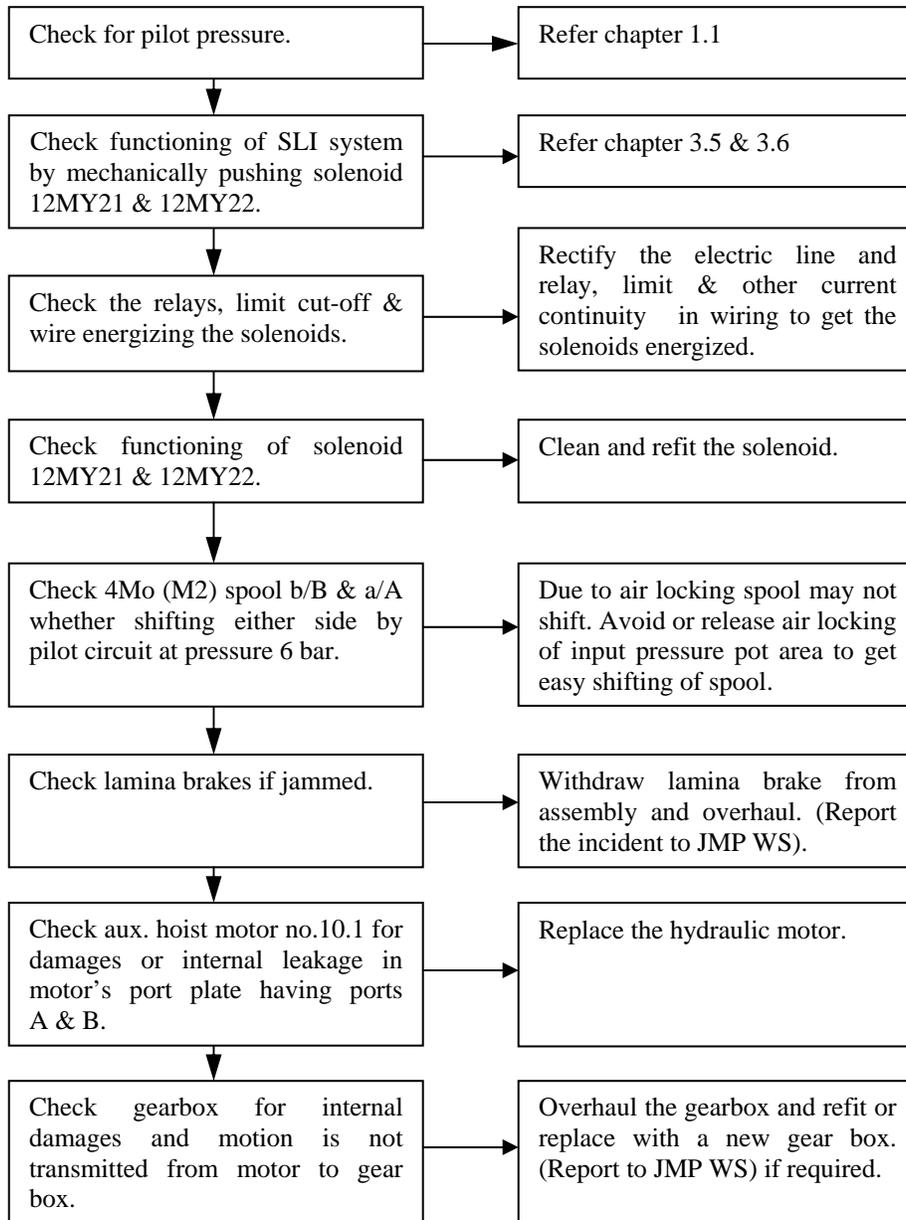


**Aux. Hoist Circuit Operation UP**

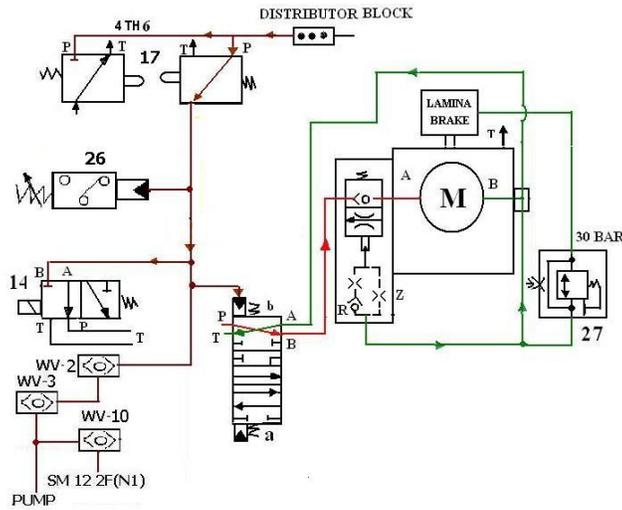


**Aux. Hoist Circuit Operation DN**

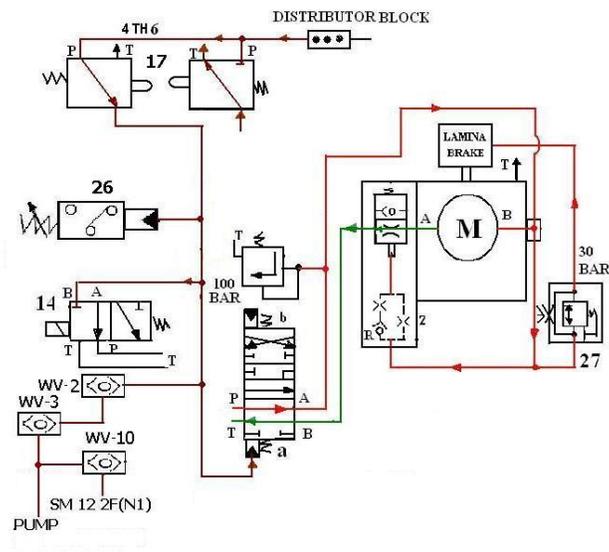




**Derrick Circuit Operation IN**

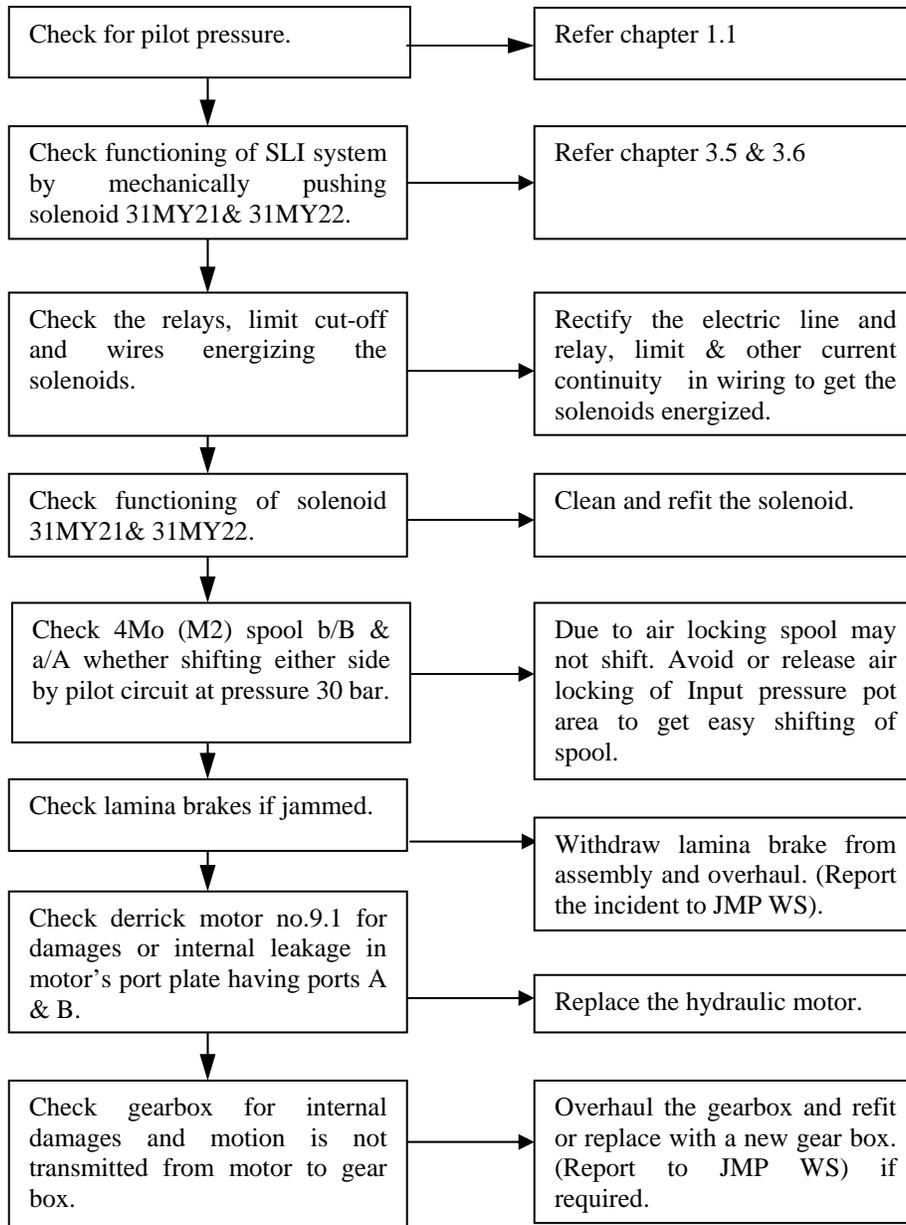


**Derrick Circuit Operation OUT**

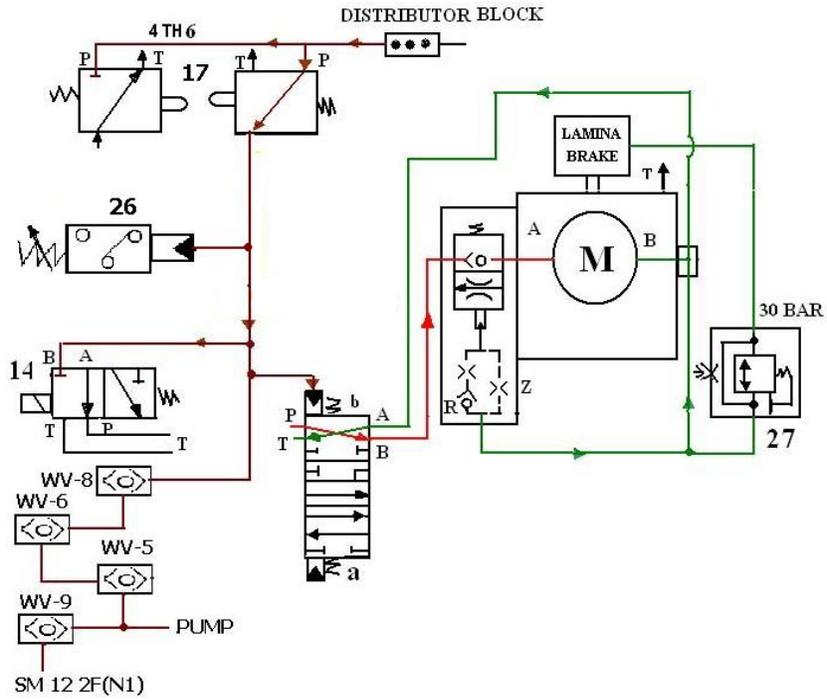


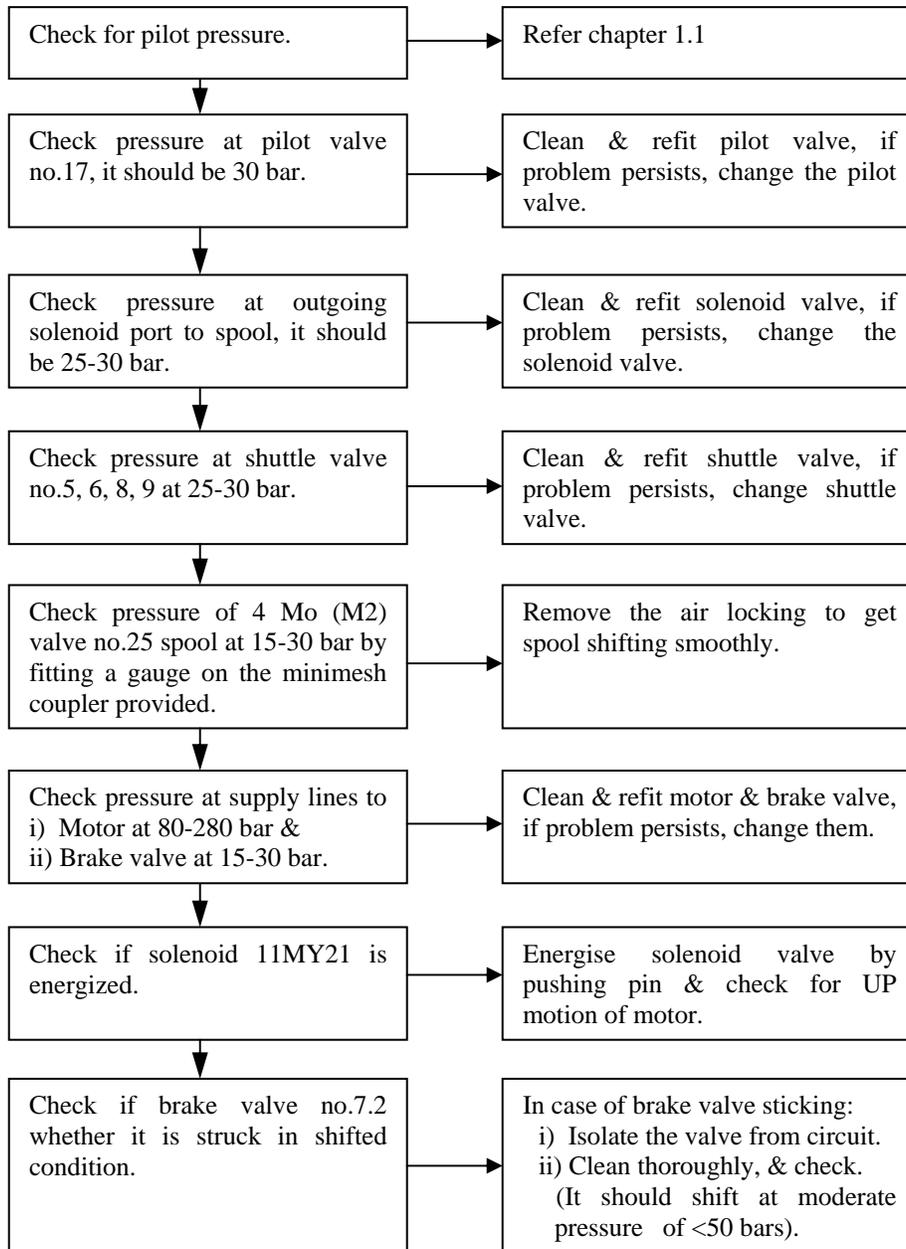
**DERRICKING IN & OUT BOTH NOT IN FUNCTION**

1.4 P 2/2

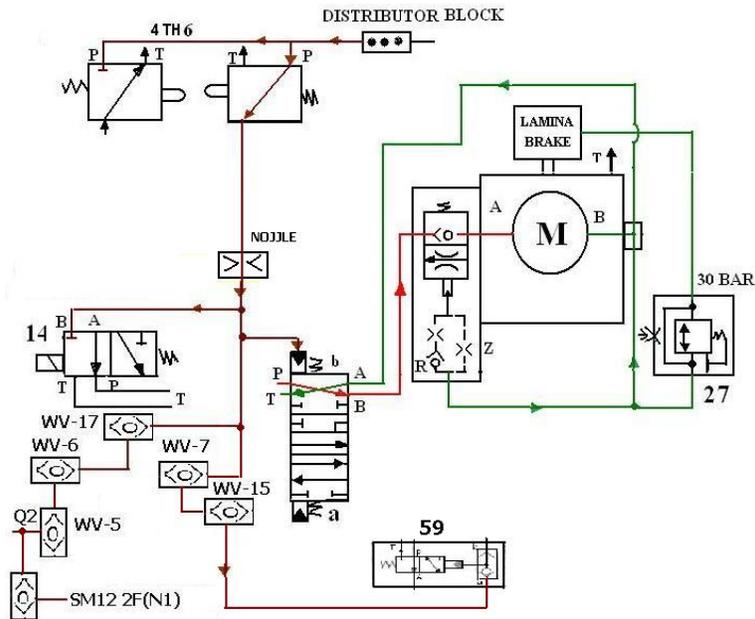


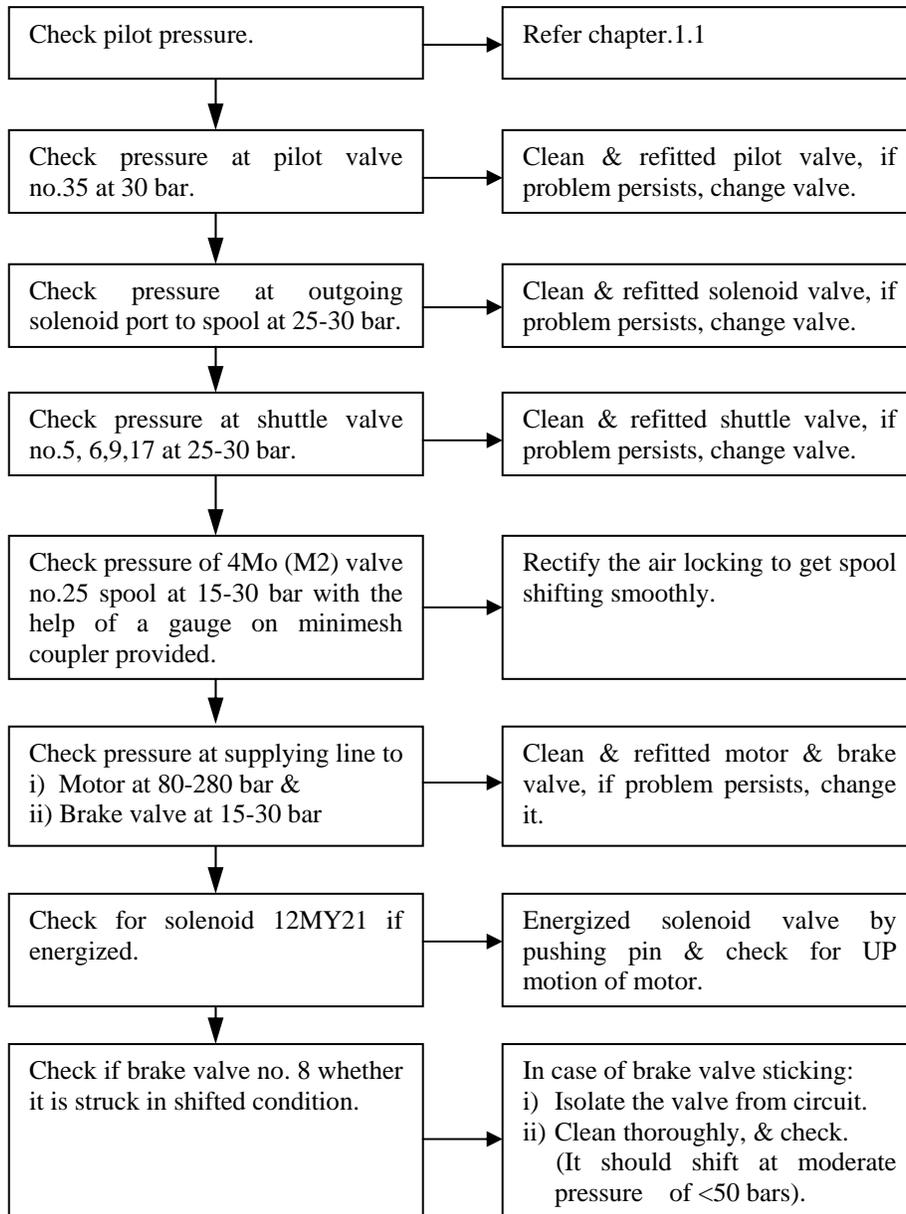
**Main Hoist Circuit Operation UP**



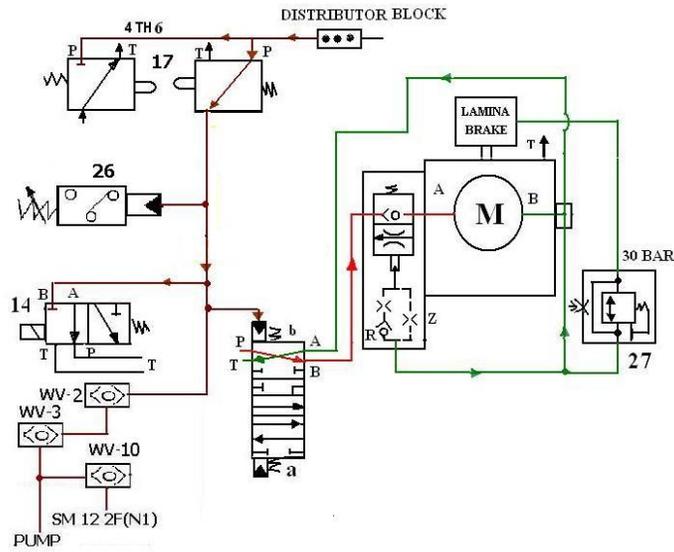


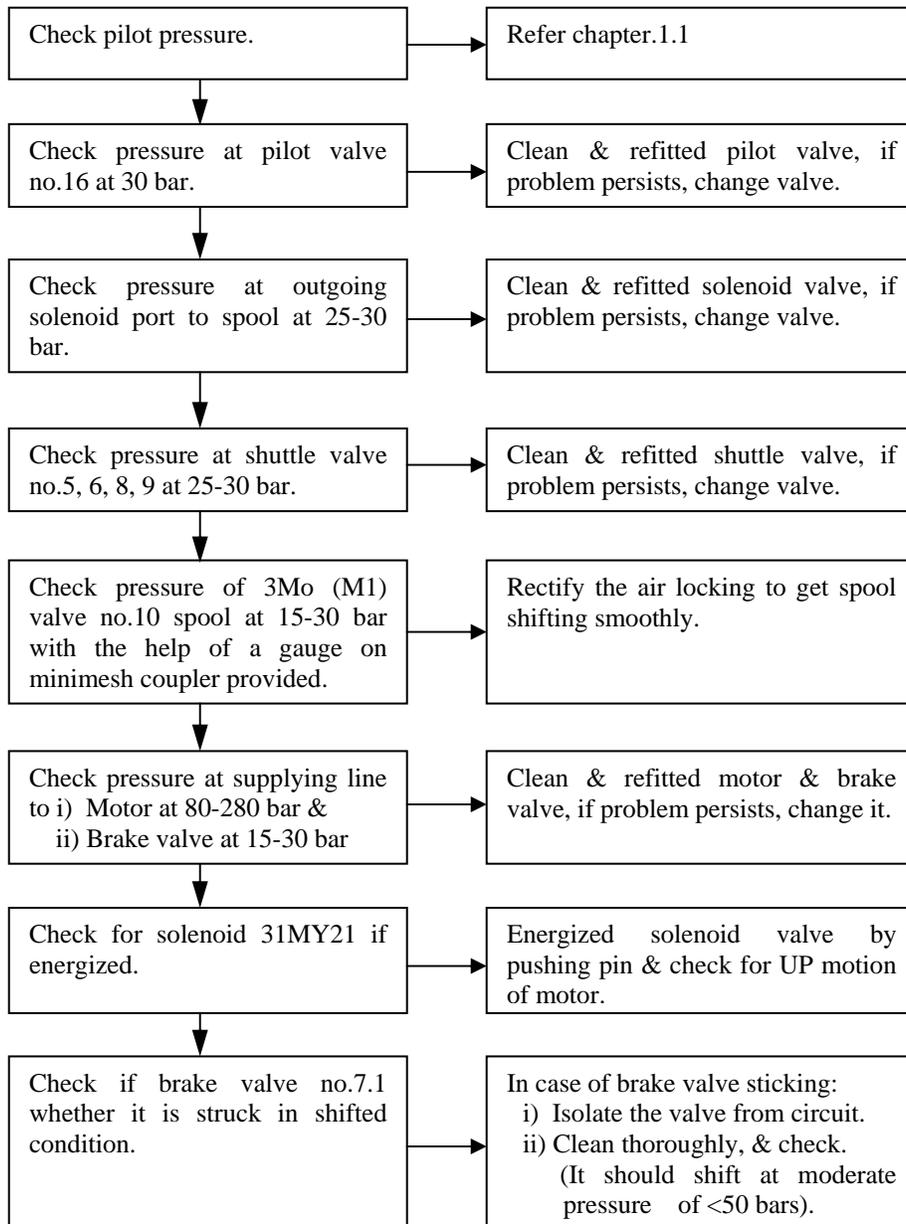
**Aux. Hoist Circuit Operation UP**



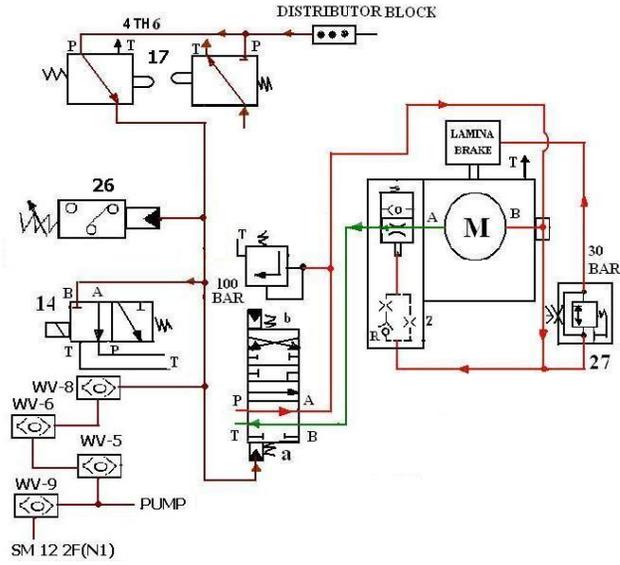


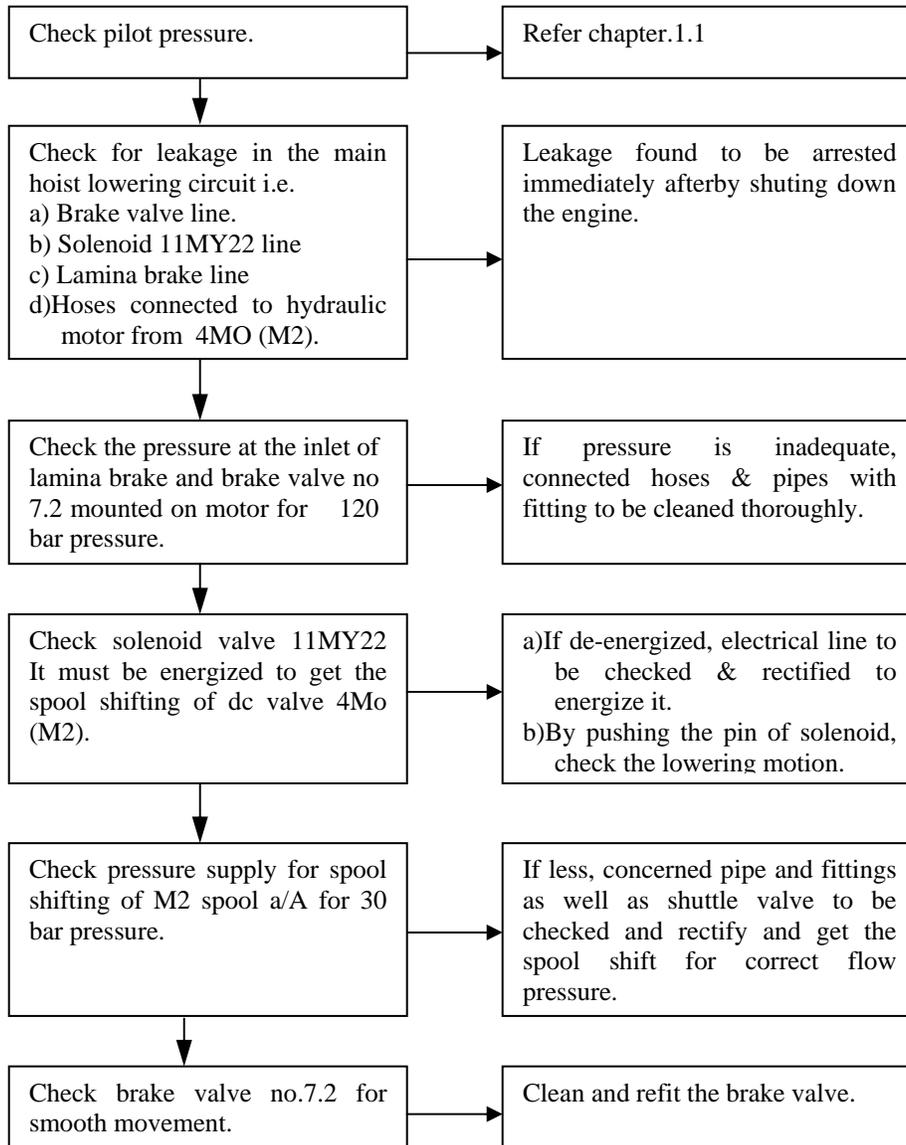
**Derrick Circuit Operation IN**



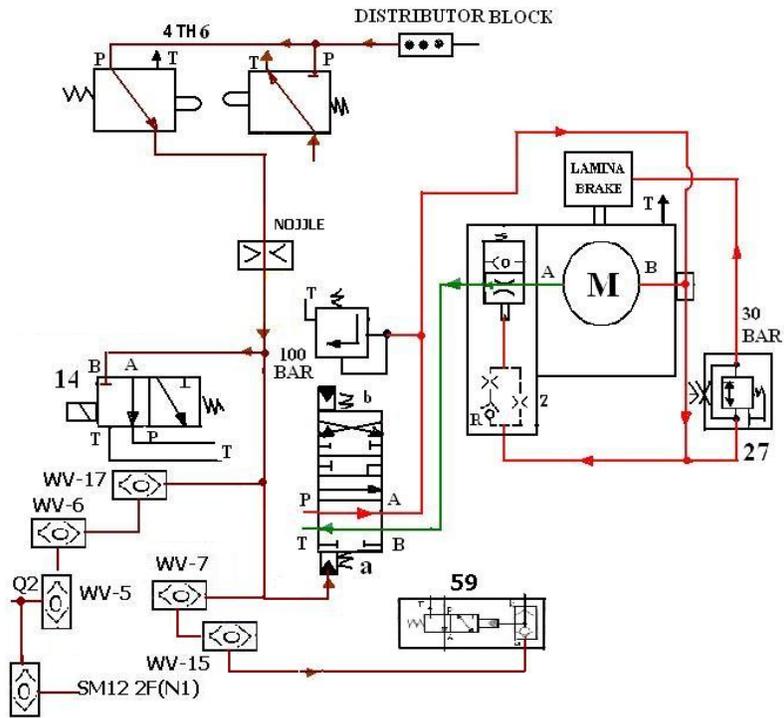


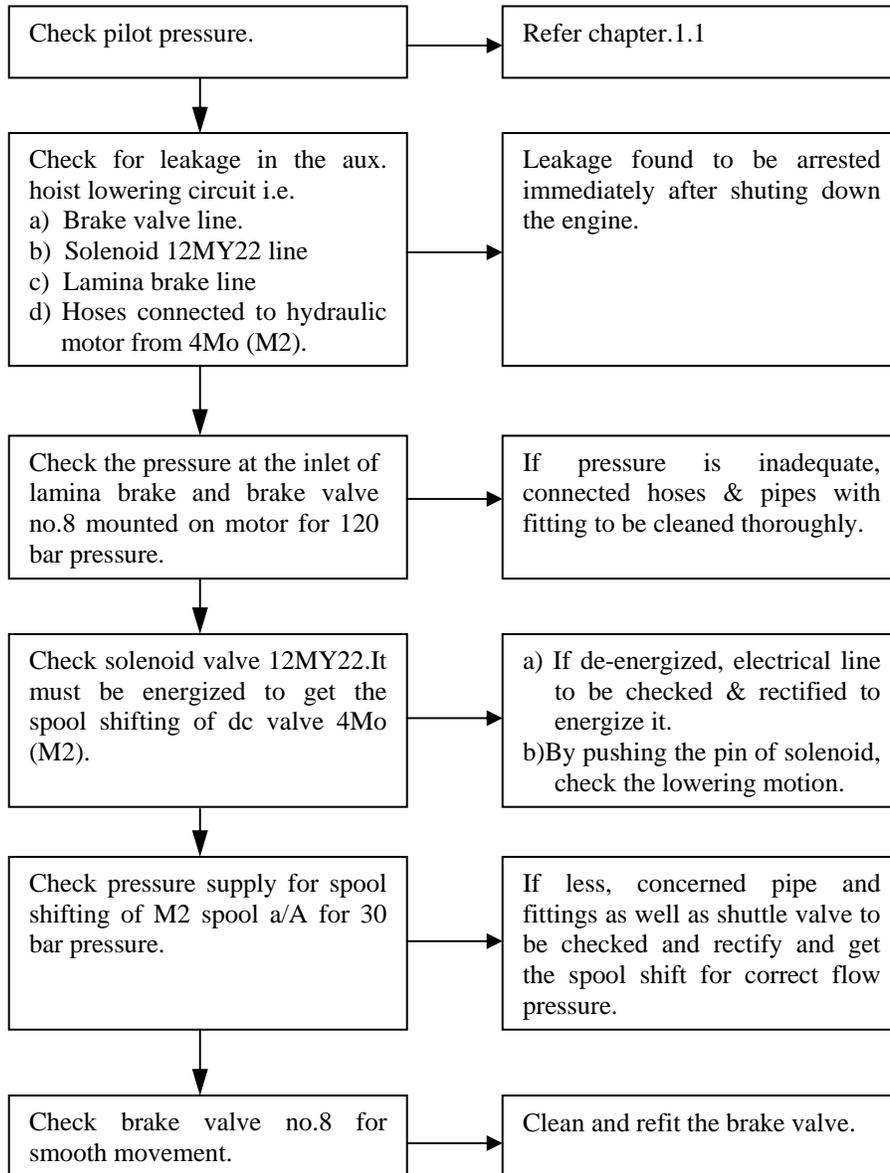
**Main Hoist Circuit Operation DN**



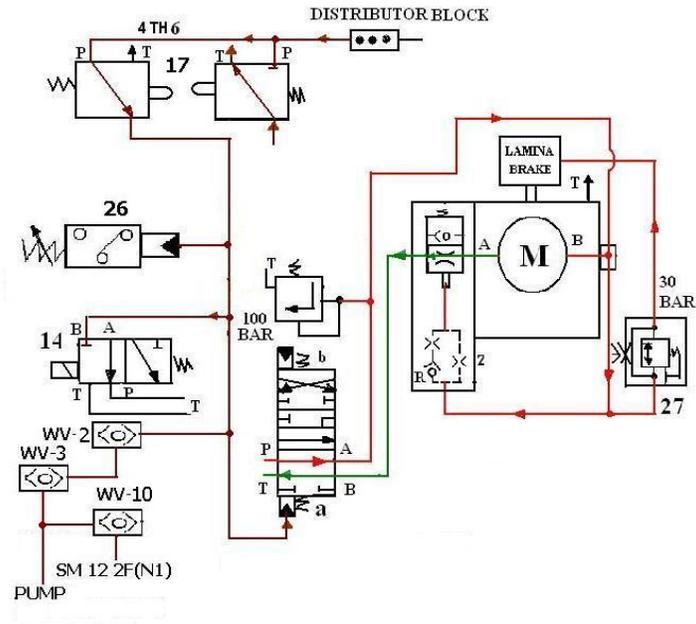


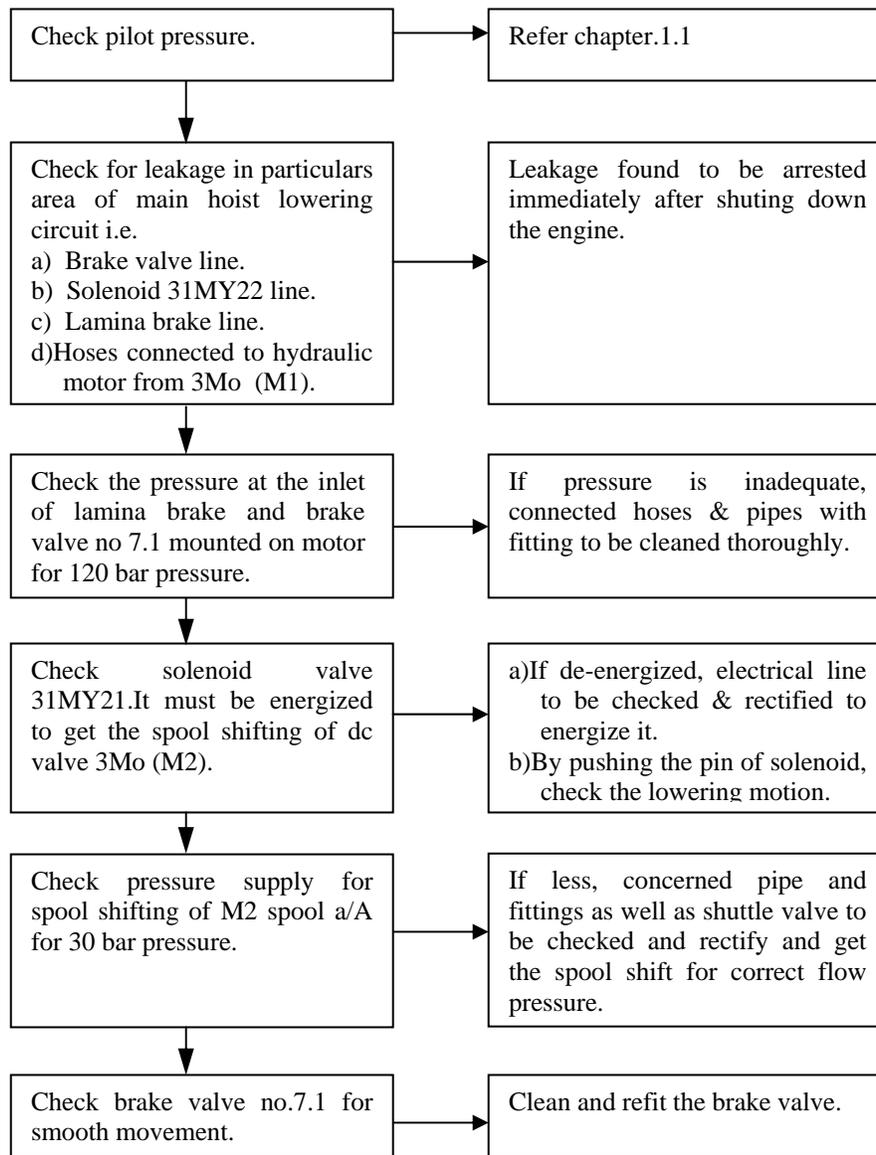
**Aux.Hoist Circuit Operation DN**



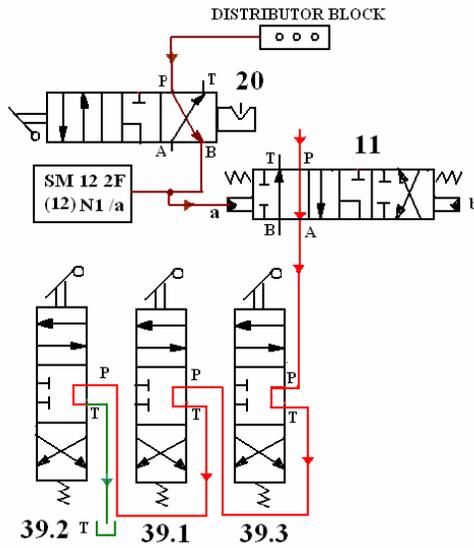


**Derrick Circuit Operation OUT**



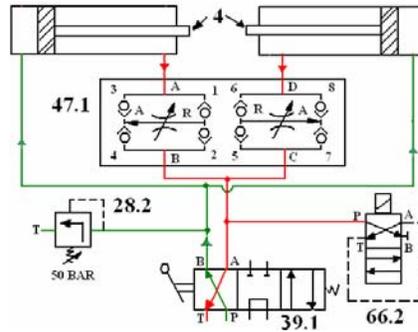
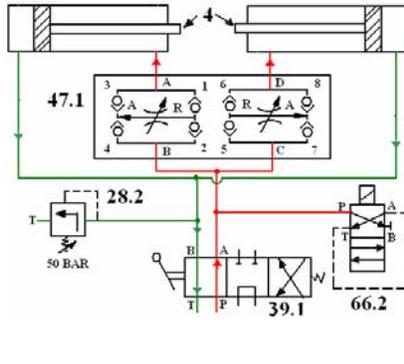


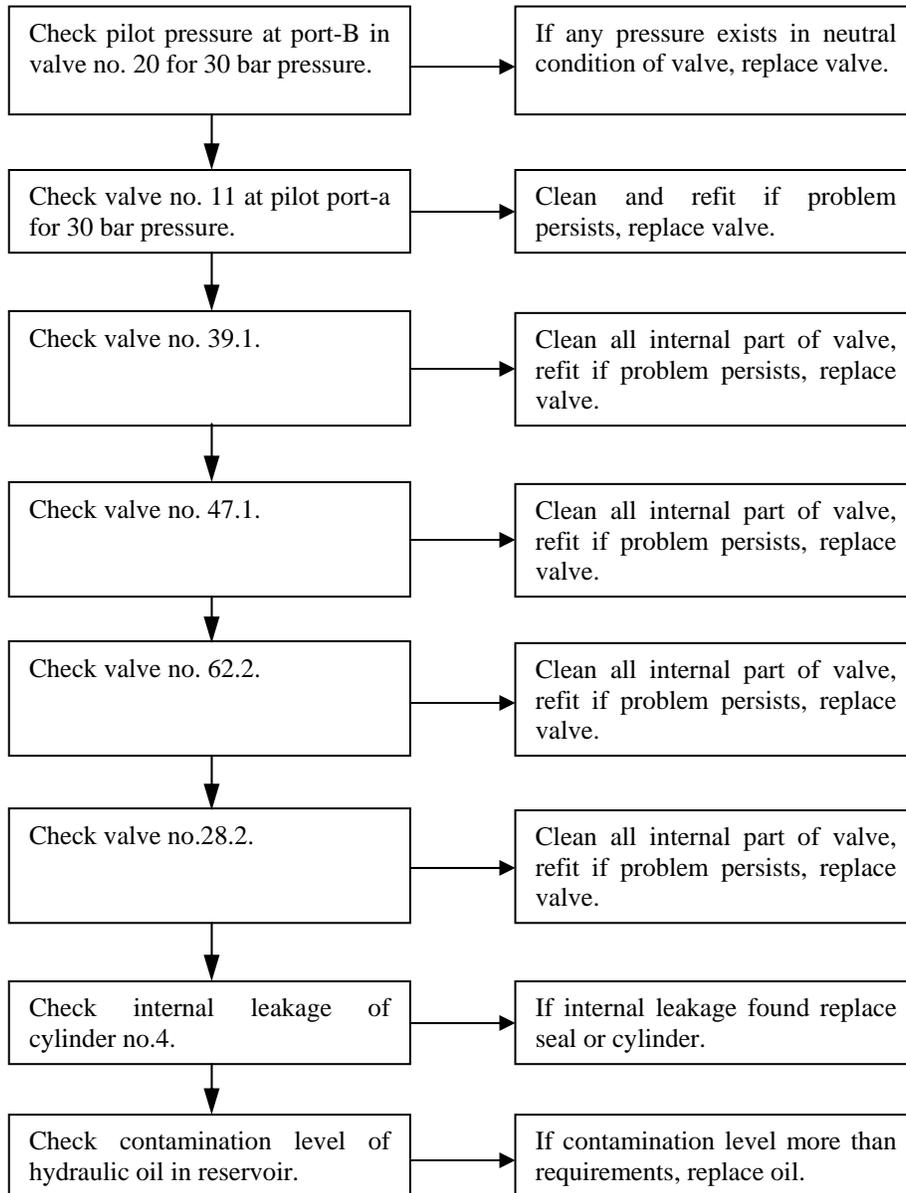
**Charging Circuit**



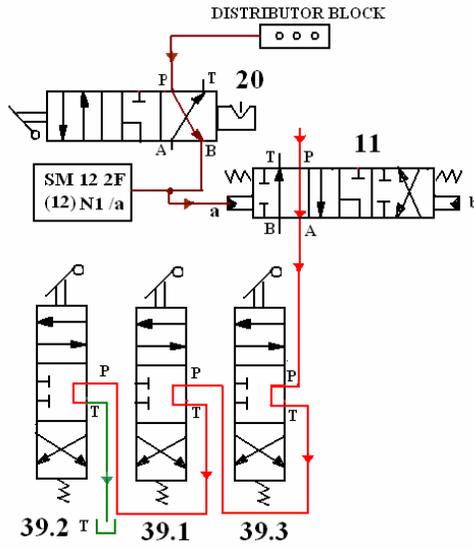
**CWT UP**

**CWT DN**

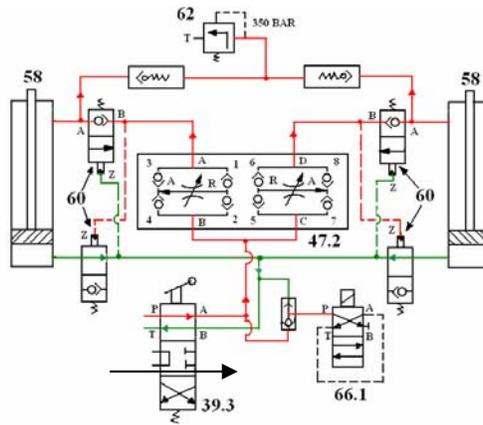


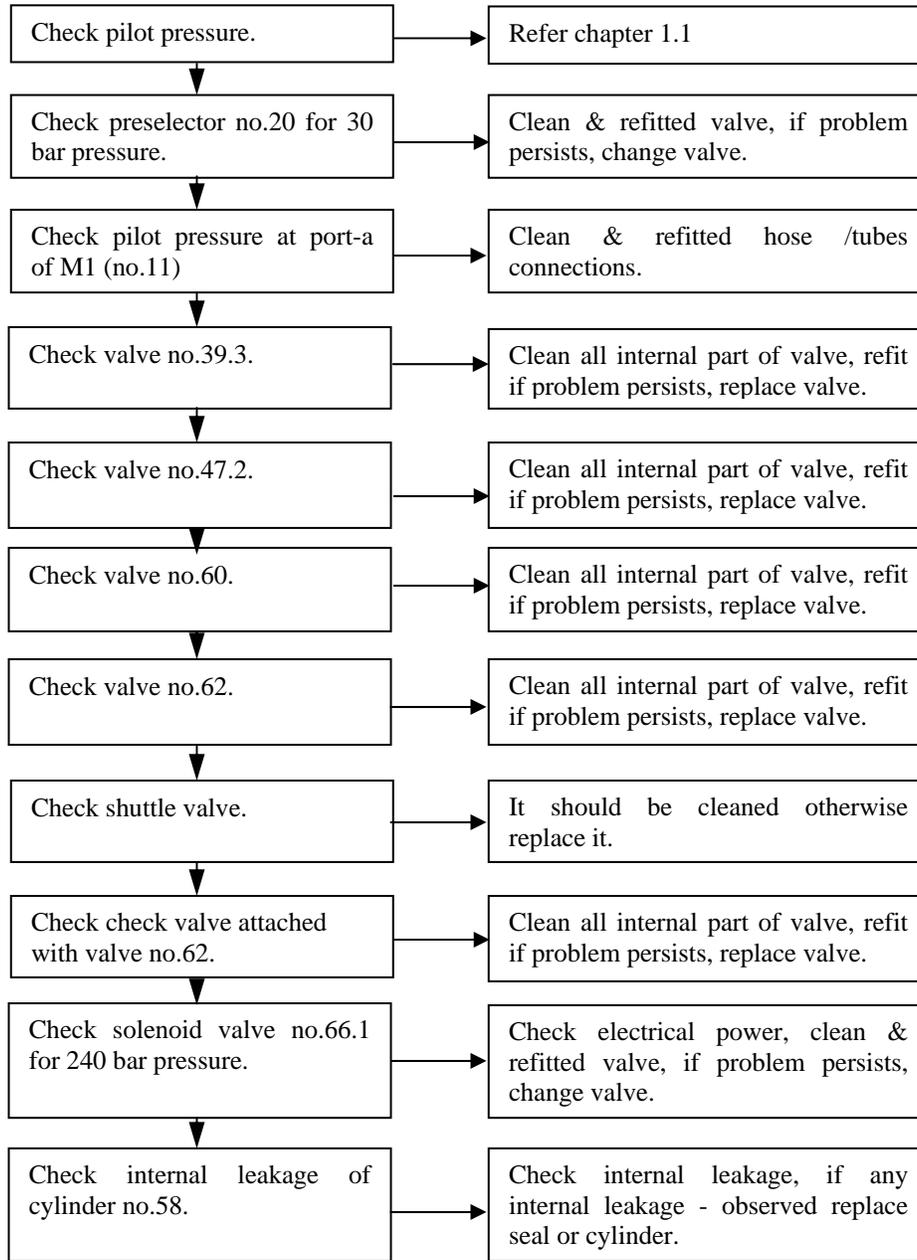


**Charging Circuit**

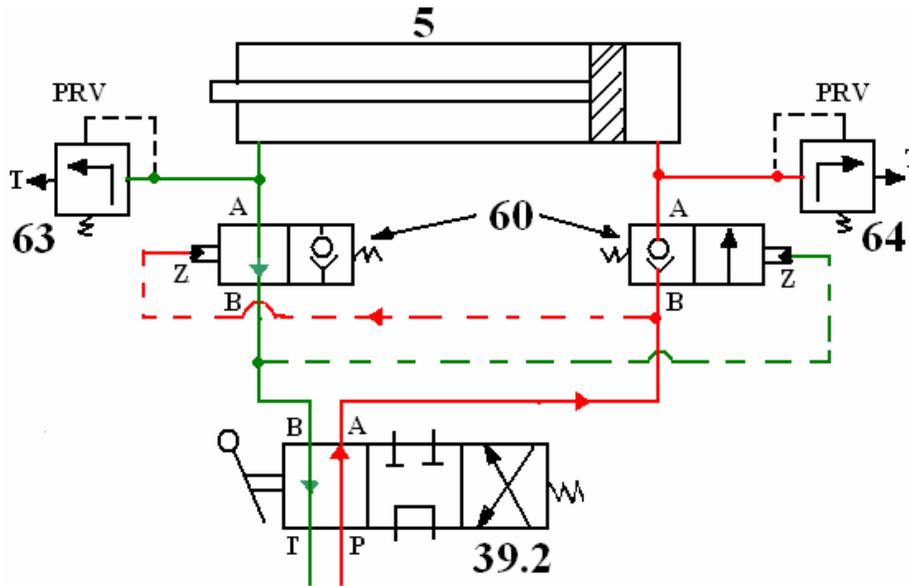


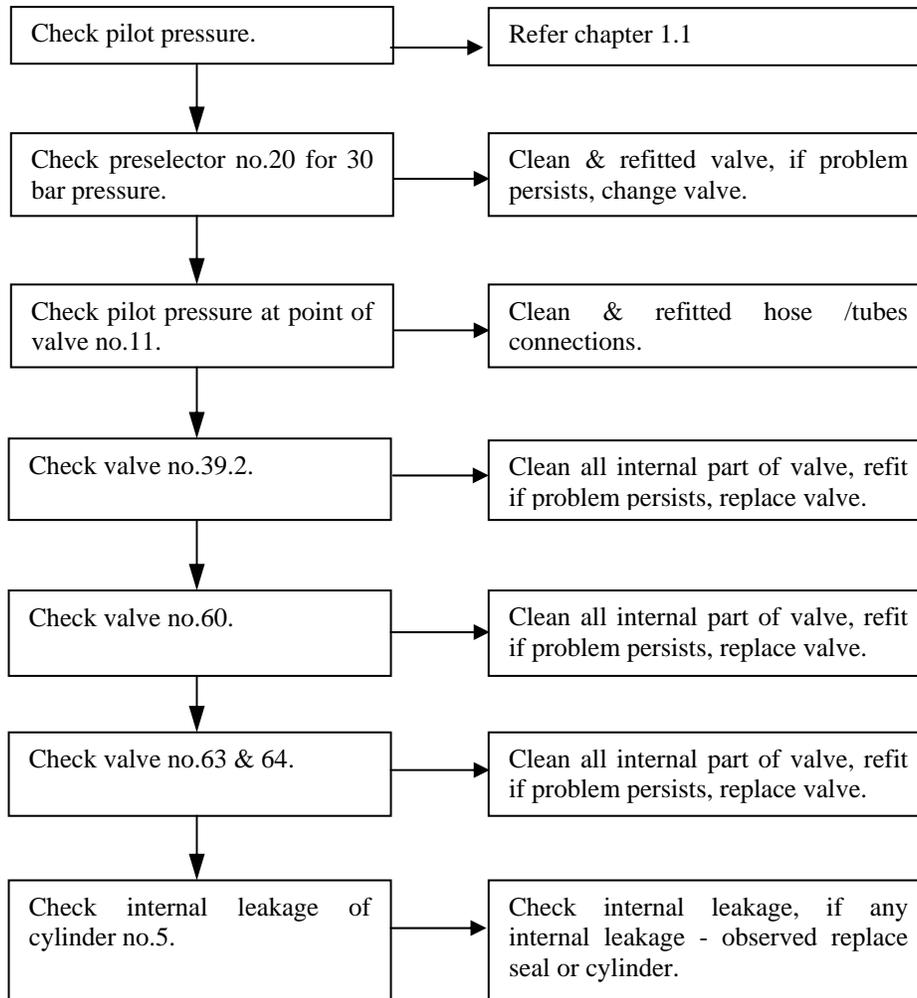
**CWT Tail Radius Circuit**



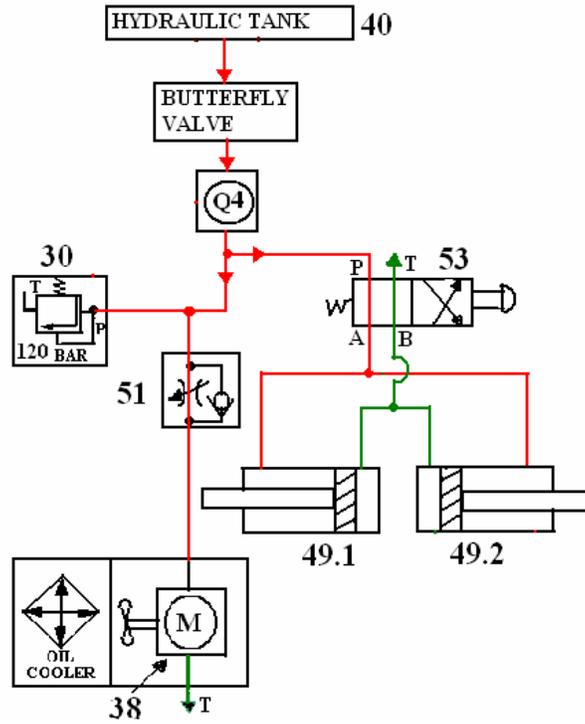


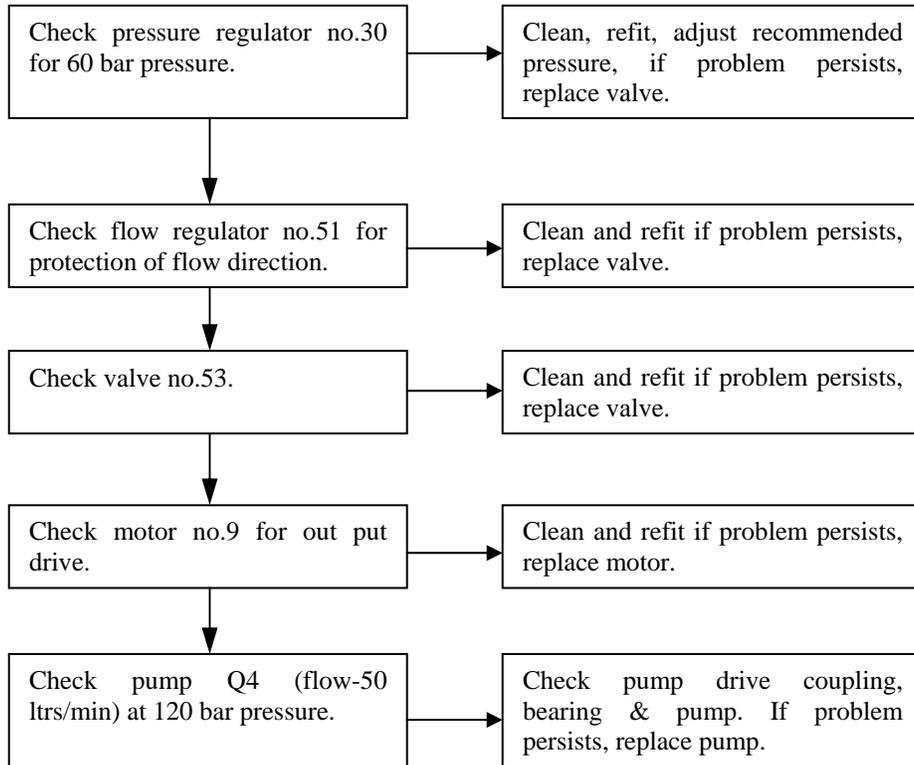
**SS/Rear Section Folding Cylinder Circuit**



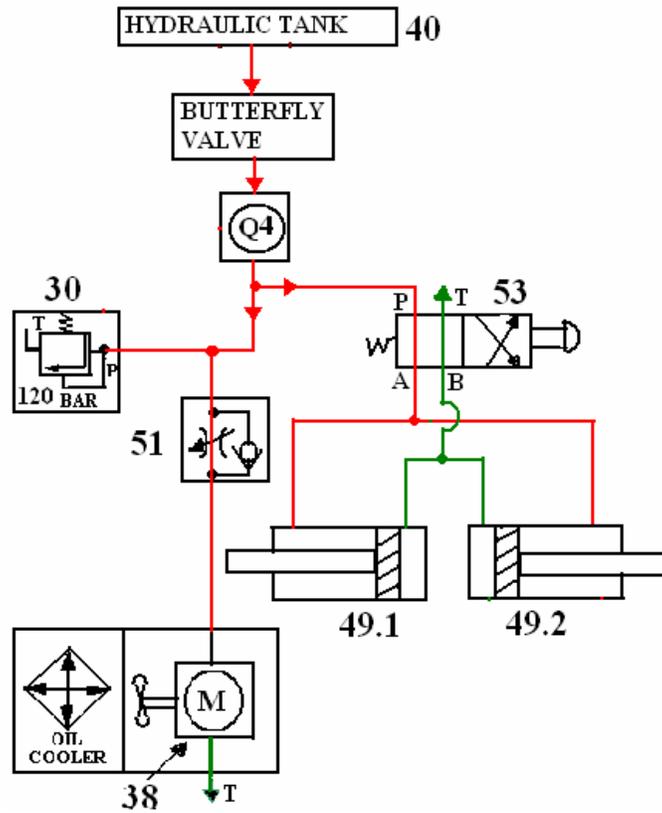


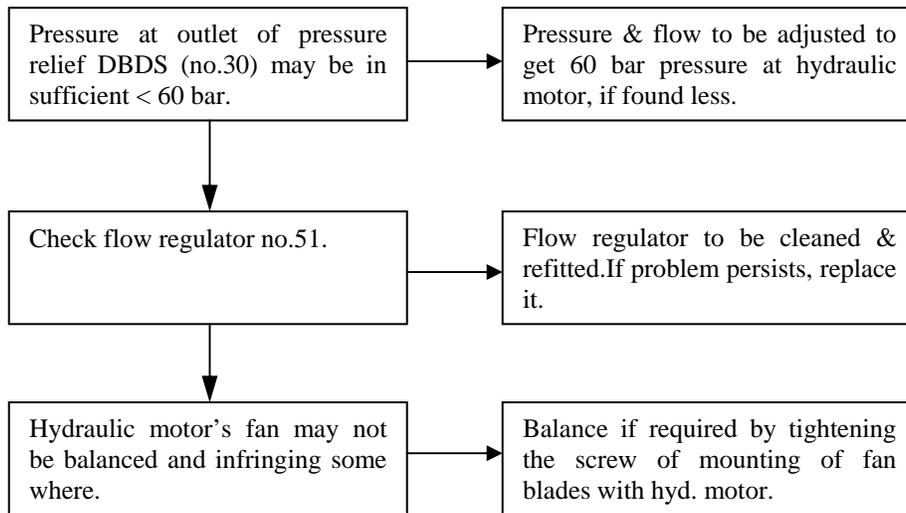
**Oil Cooling & Root Boom Cylinder Circuit**



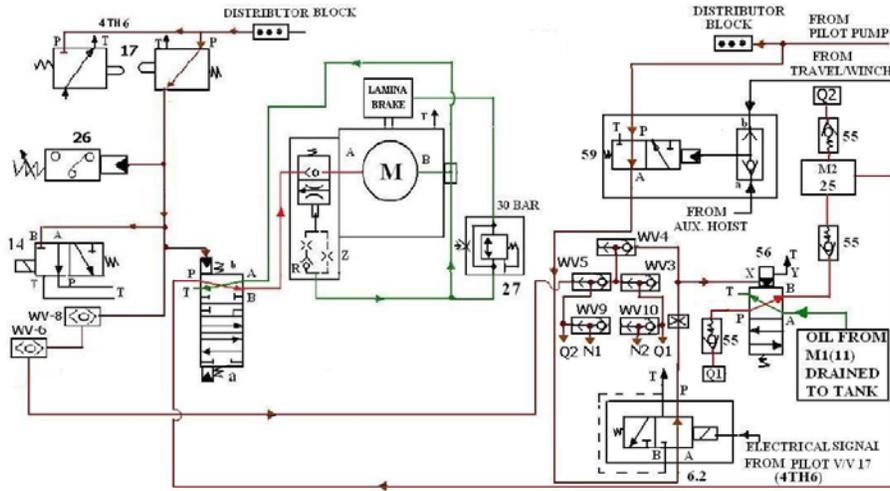


**Oil Cooling & Root Boom Cylinder Circuit**

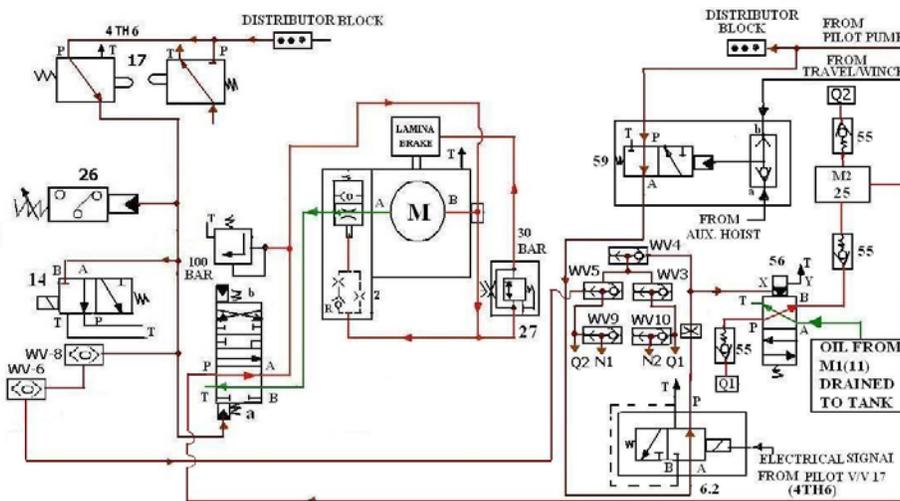


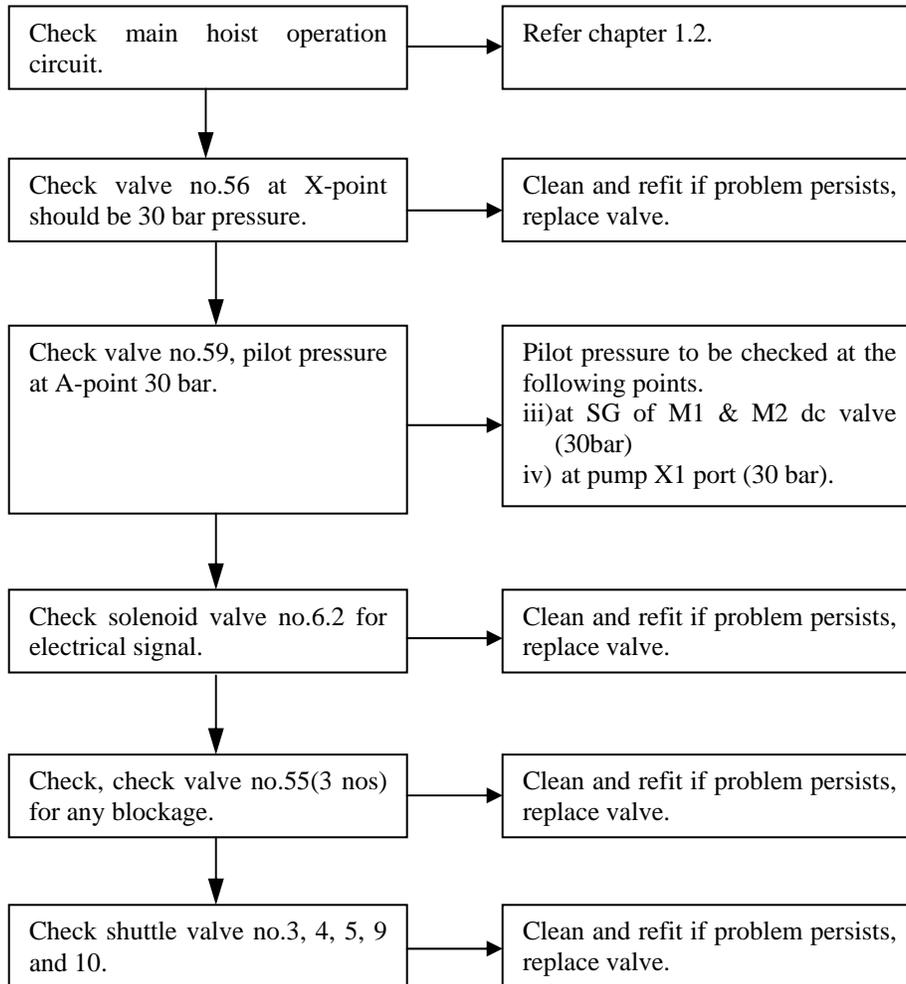


**Rapid Motion (Main Hoist UP)**

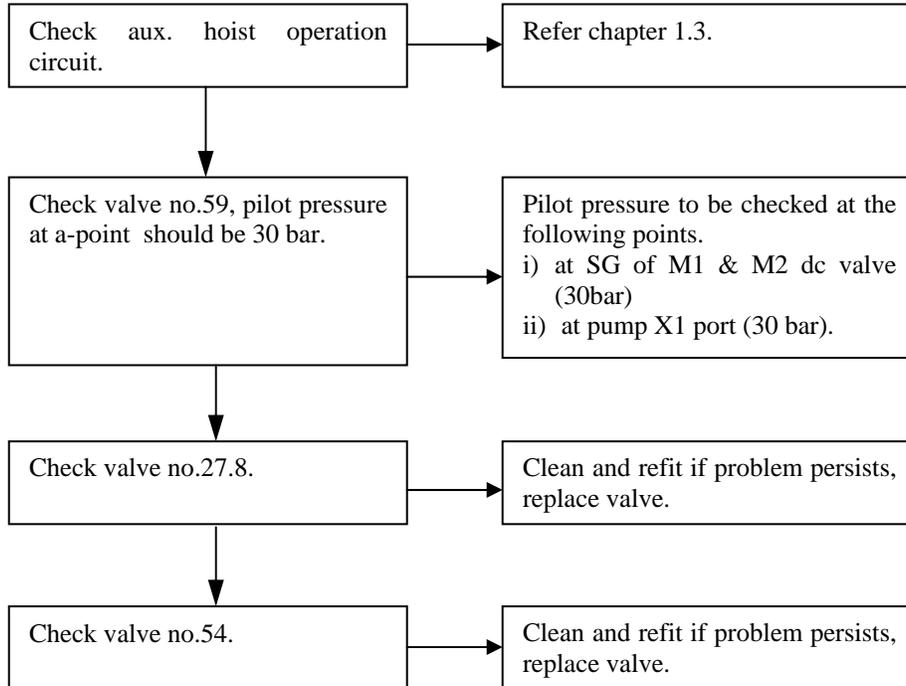


**Rapid Motion (Main Hoist DN)**

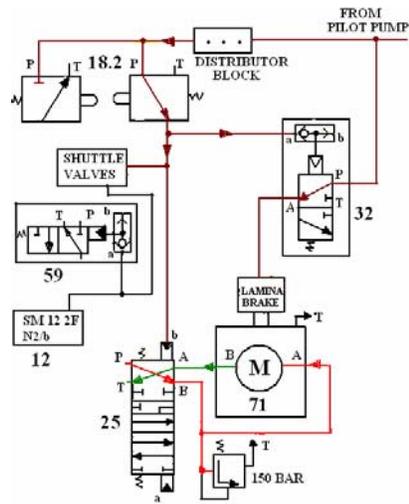




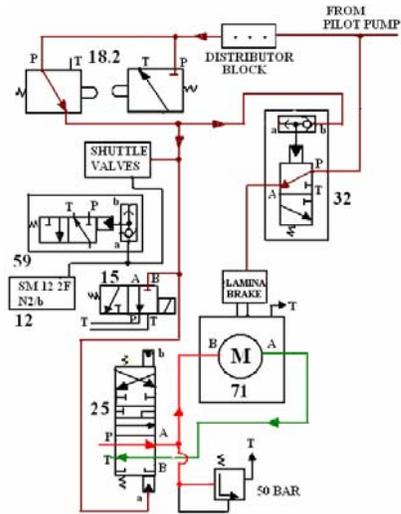


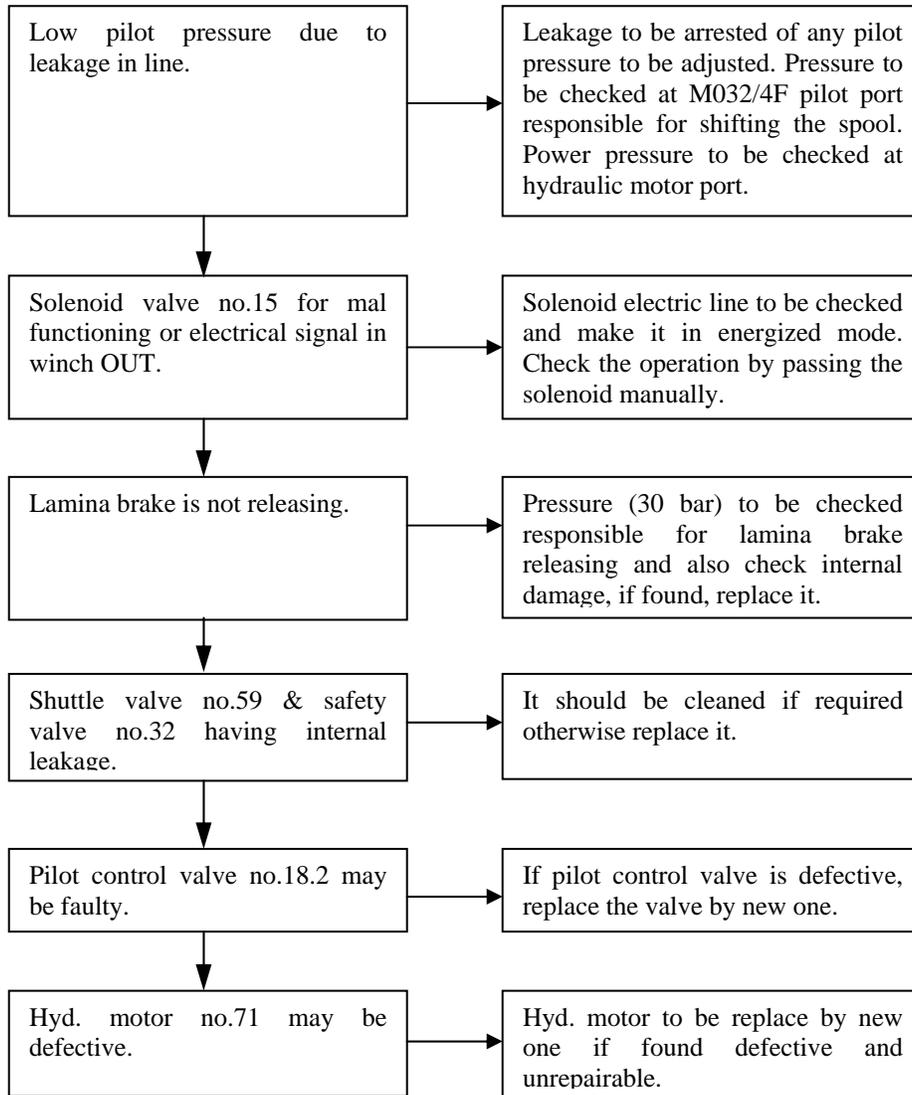


**Recovery Winch IN**

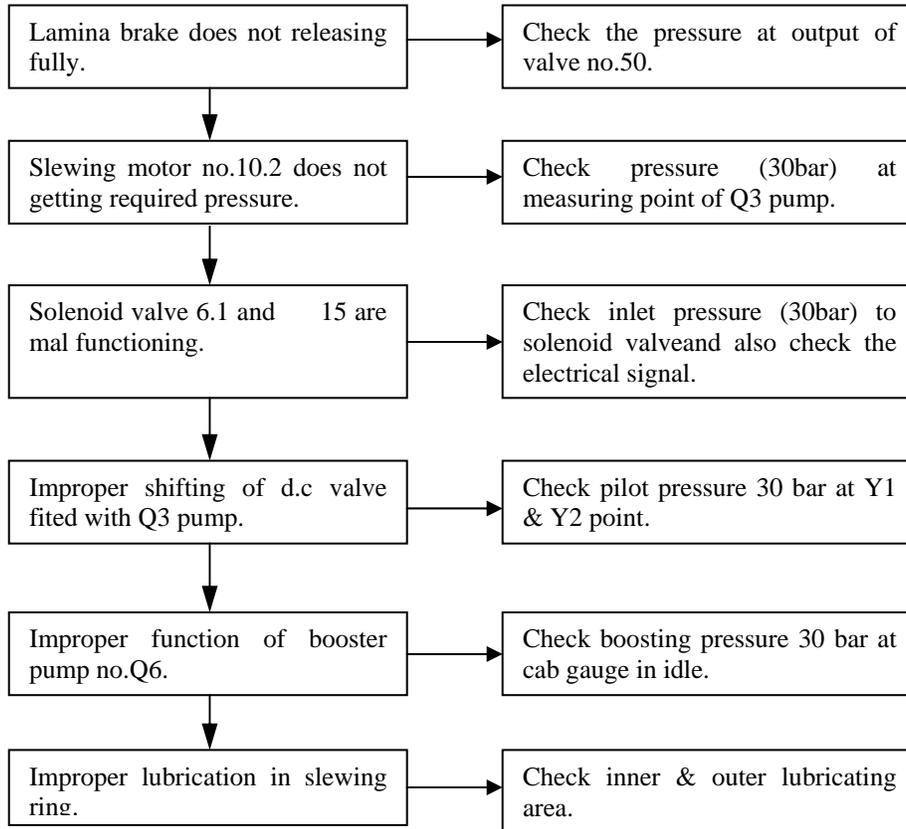


**Recovery Winch OUT**

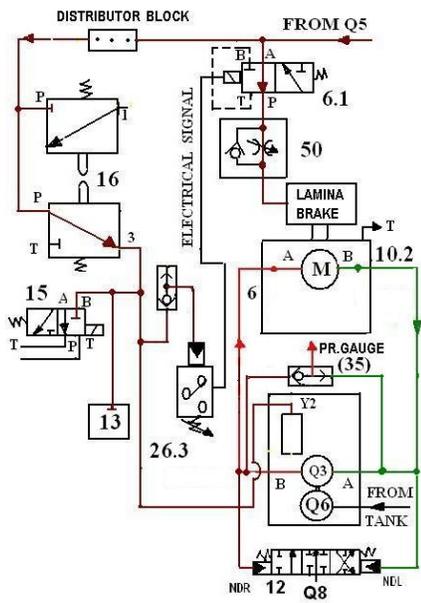




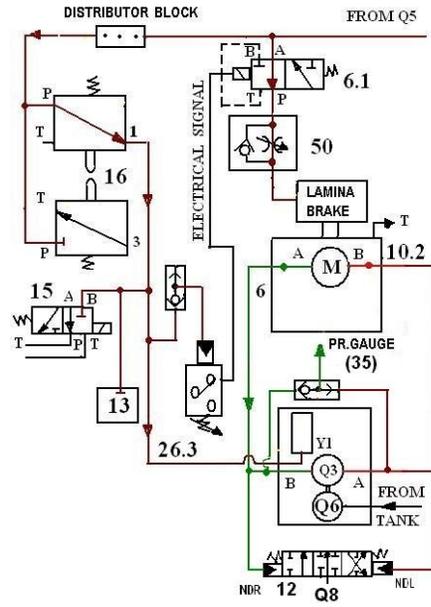


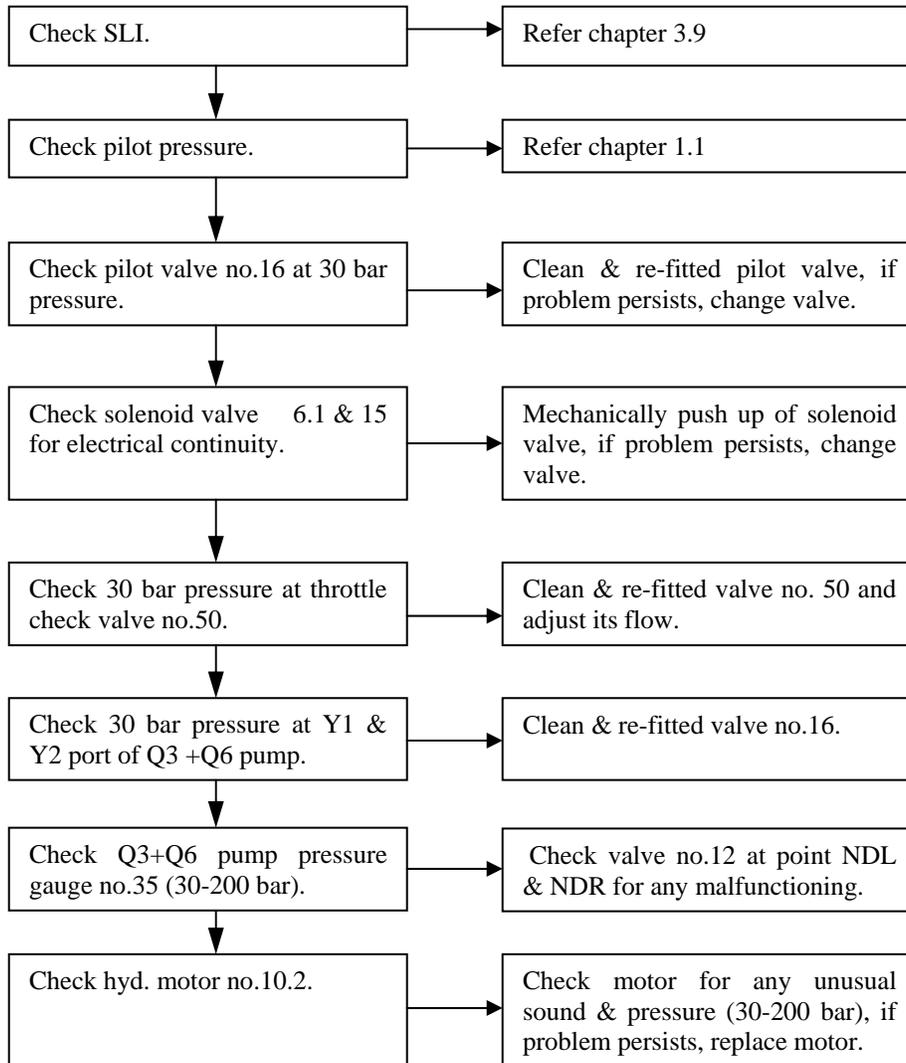


**Slewing LEFT Circuit**

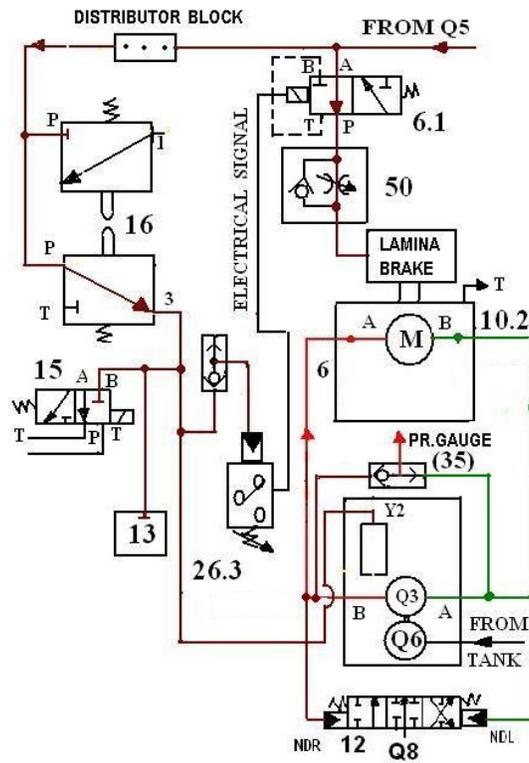


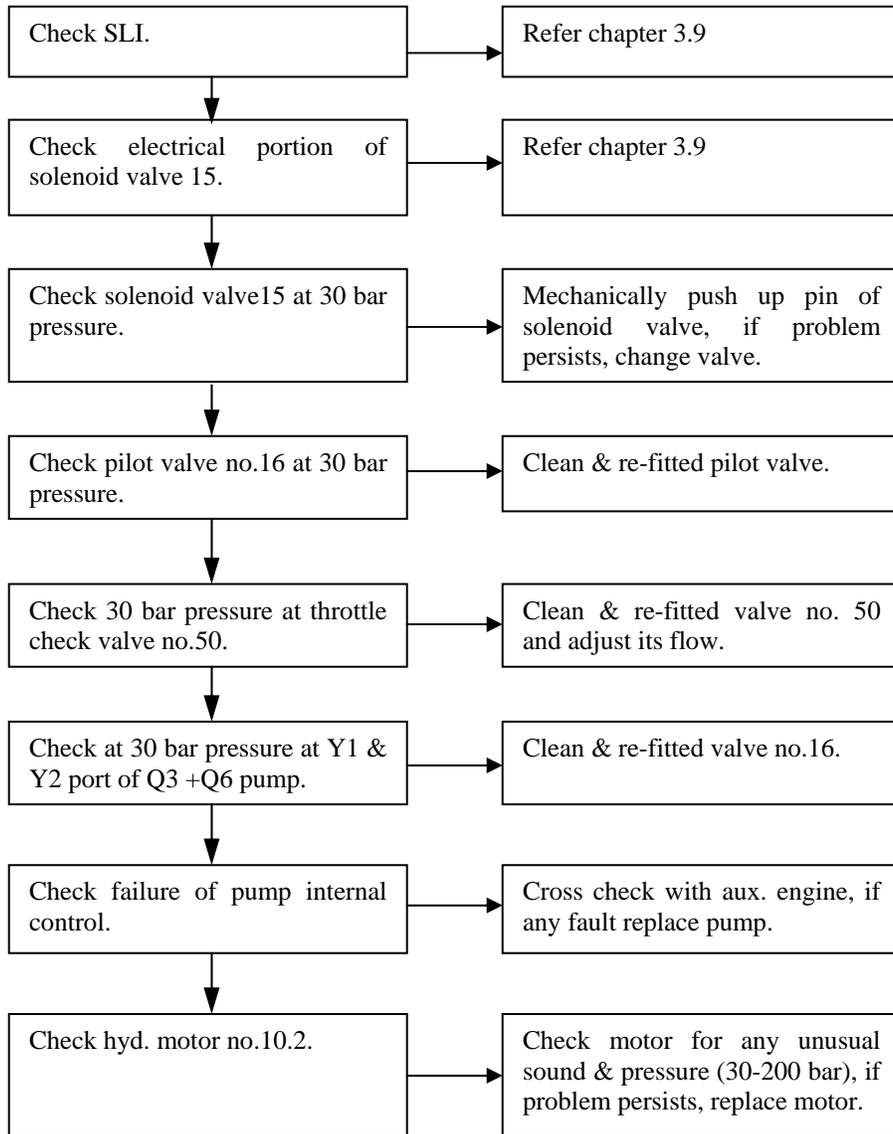
**Slewing RIGHT Circuit**



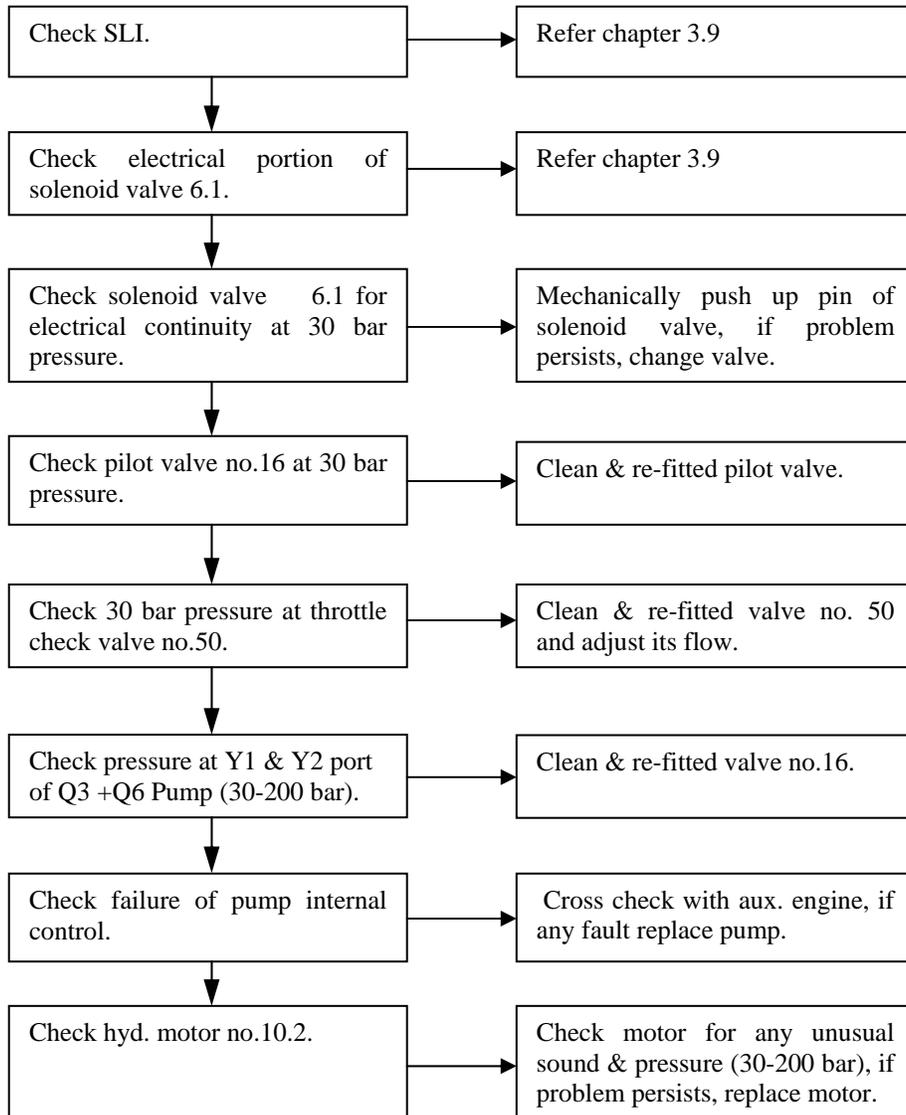


**Slewing LEFT Circuit**

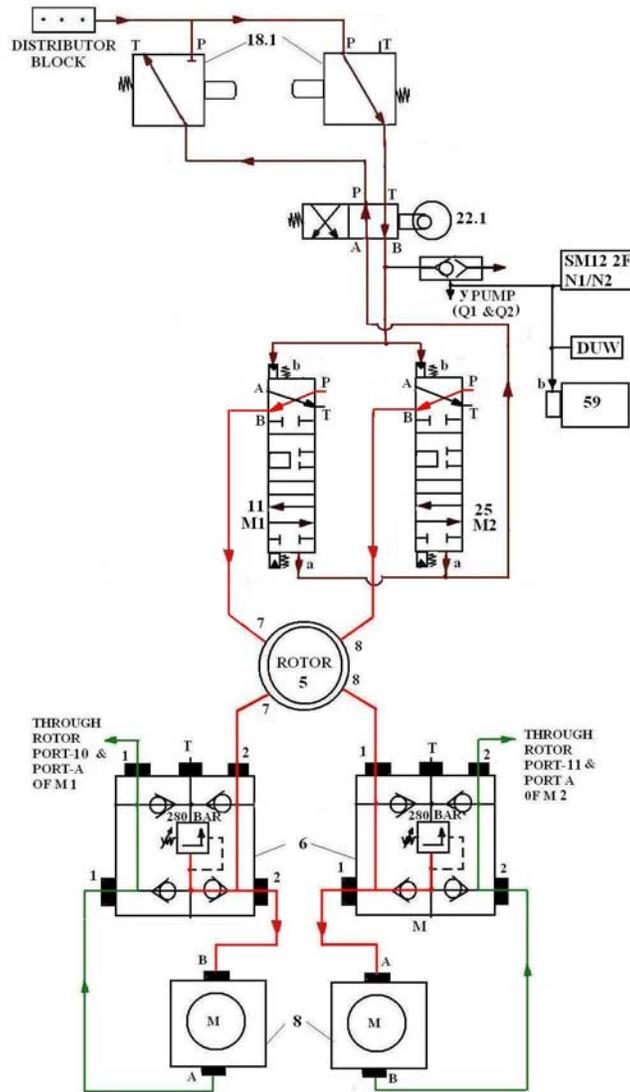




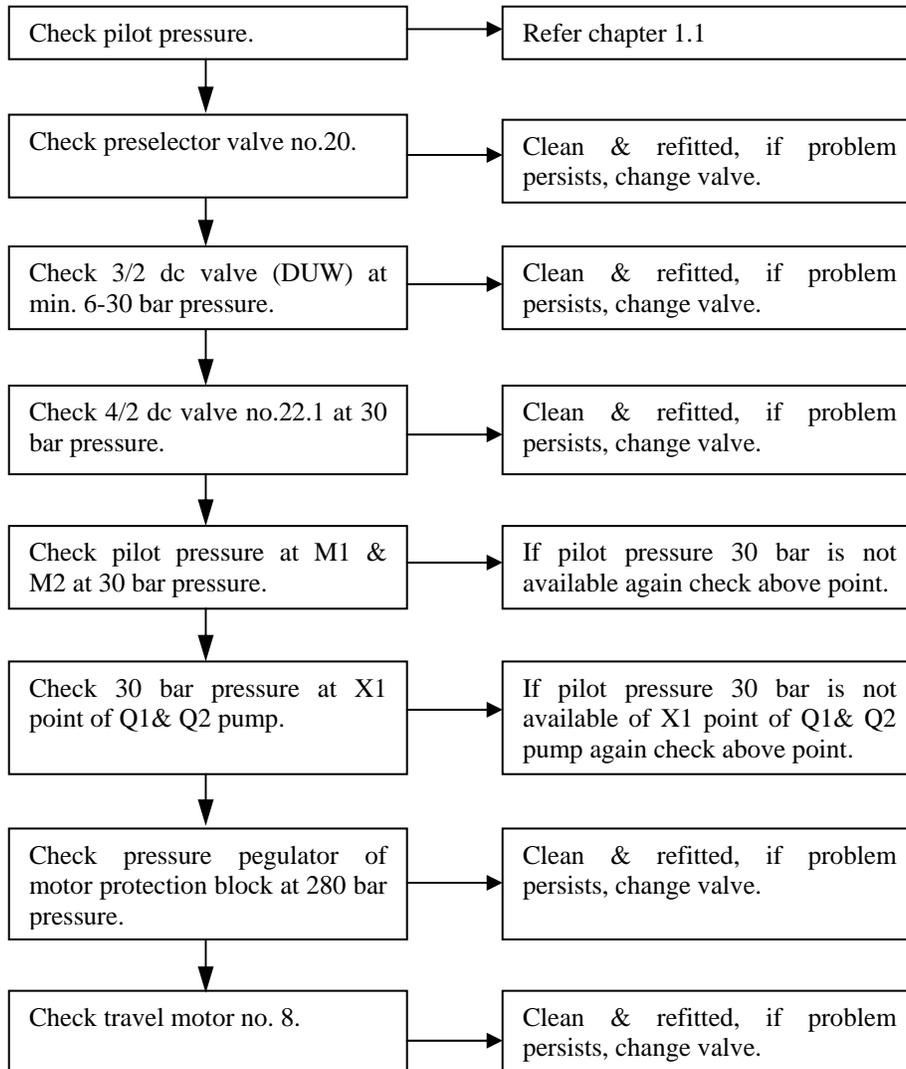




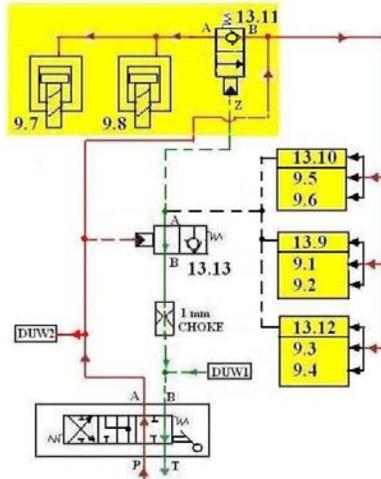
**Travel Opeartion**



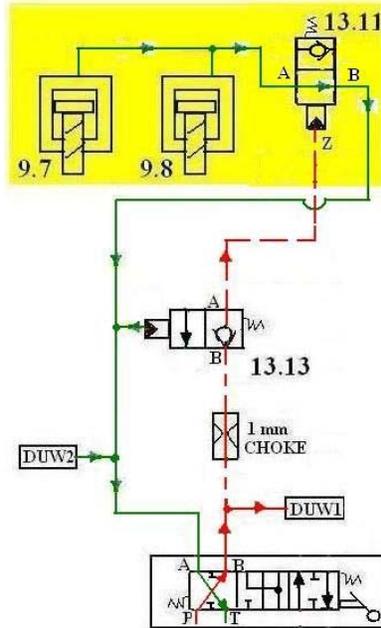
**TRAVEL OPERATION IS NOT WORKING IN BOTH DIRECTION 1.23 P 2/2**

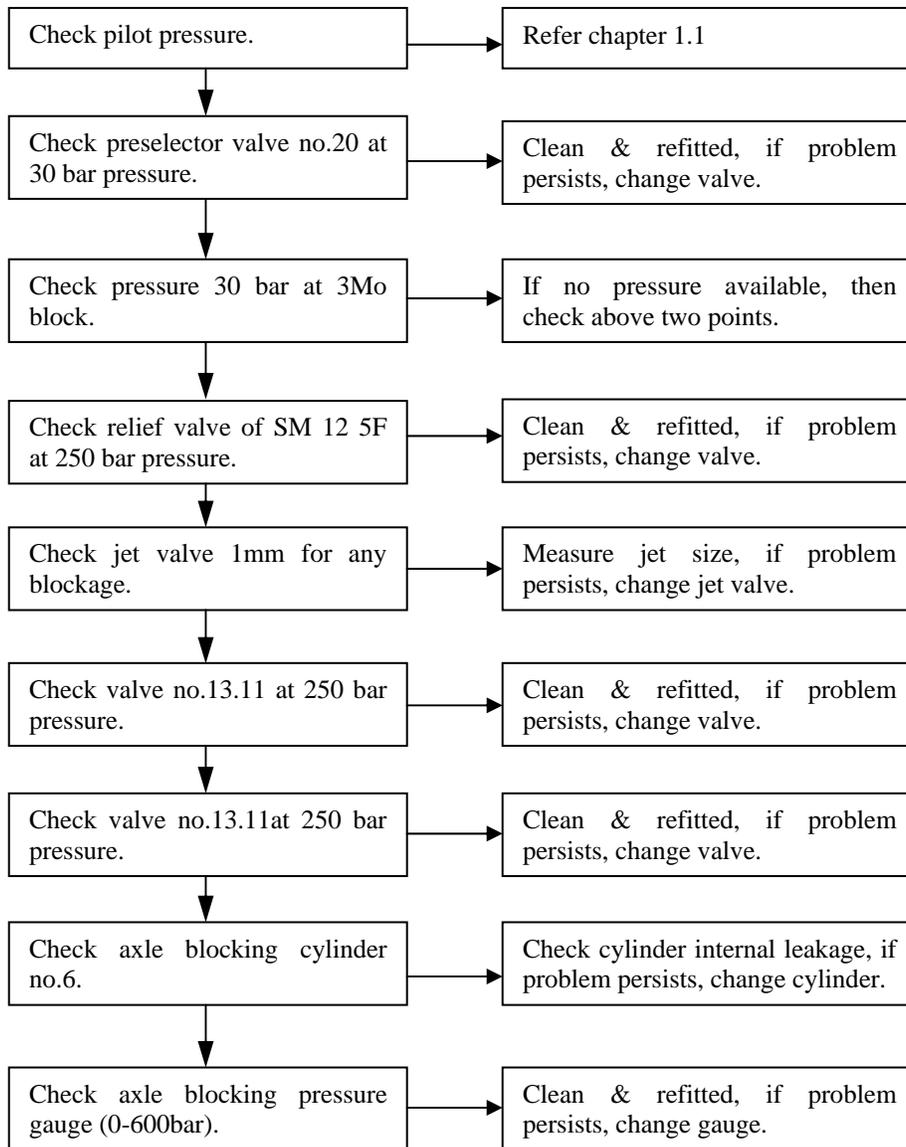


**Axle Blocking Application**

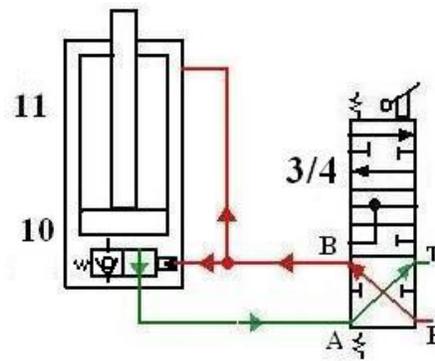


**Axle Blocking Release**

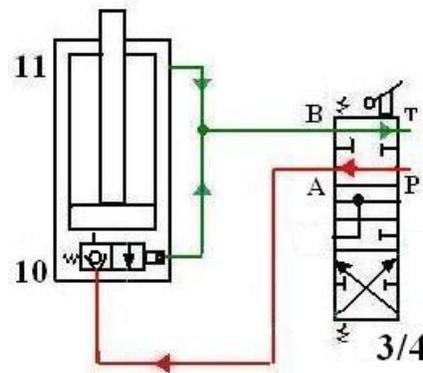


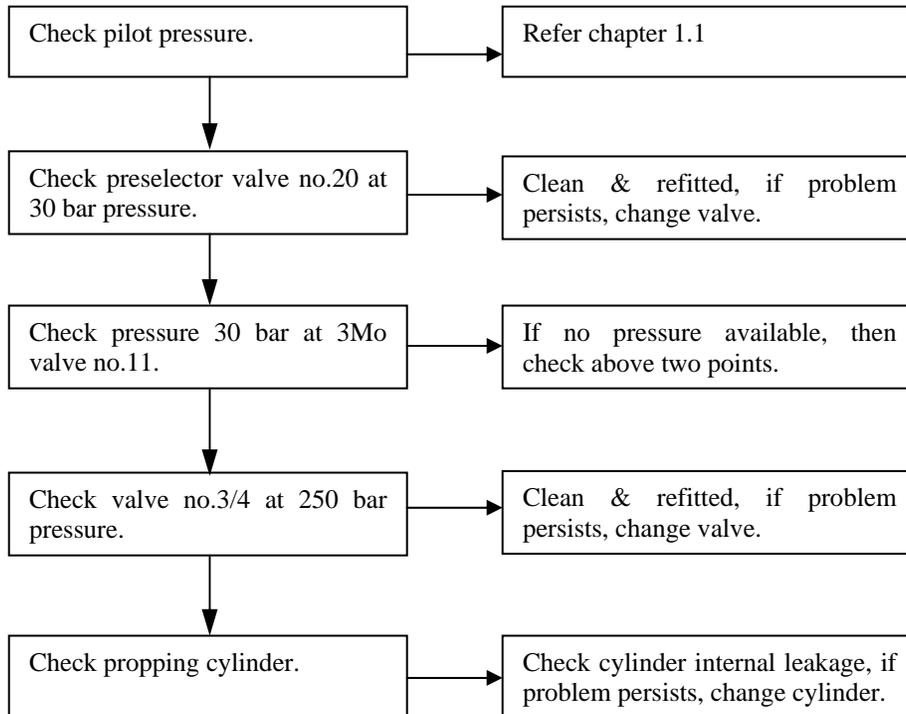


**Propping IN**

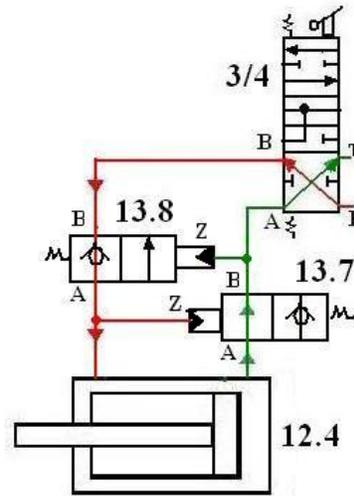


**Propping OUT**

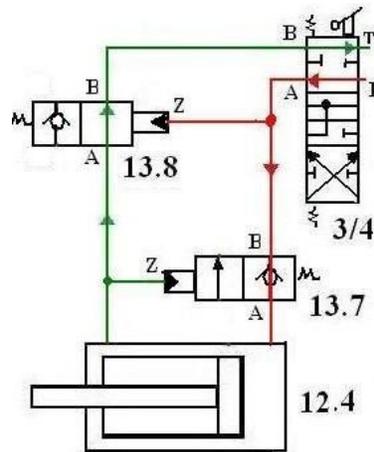


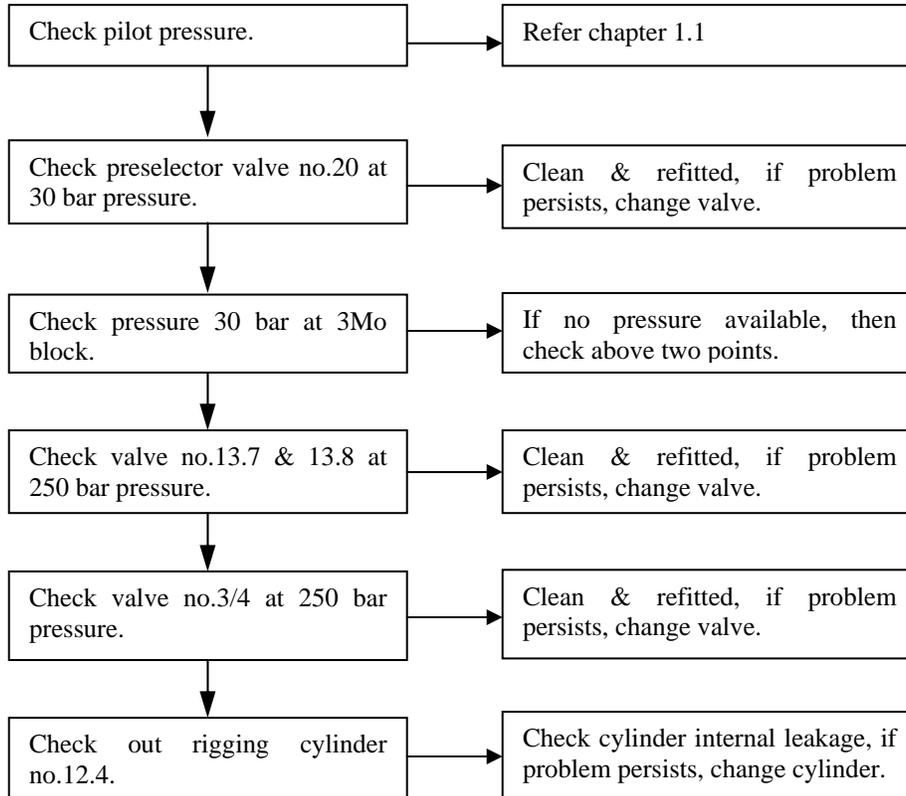


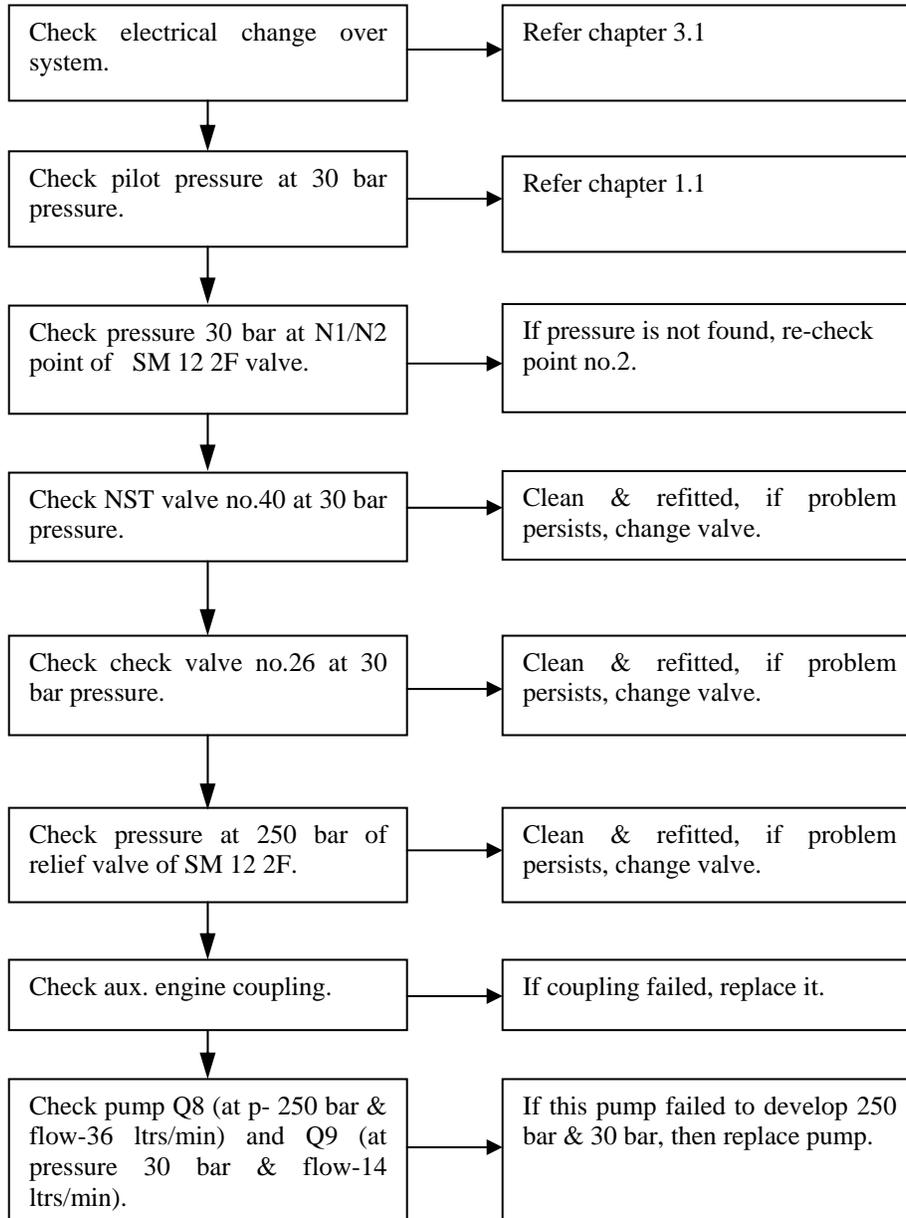
**Rigging IN**

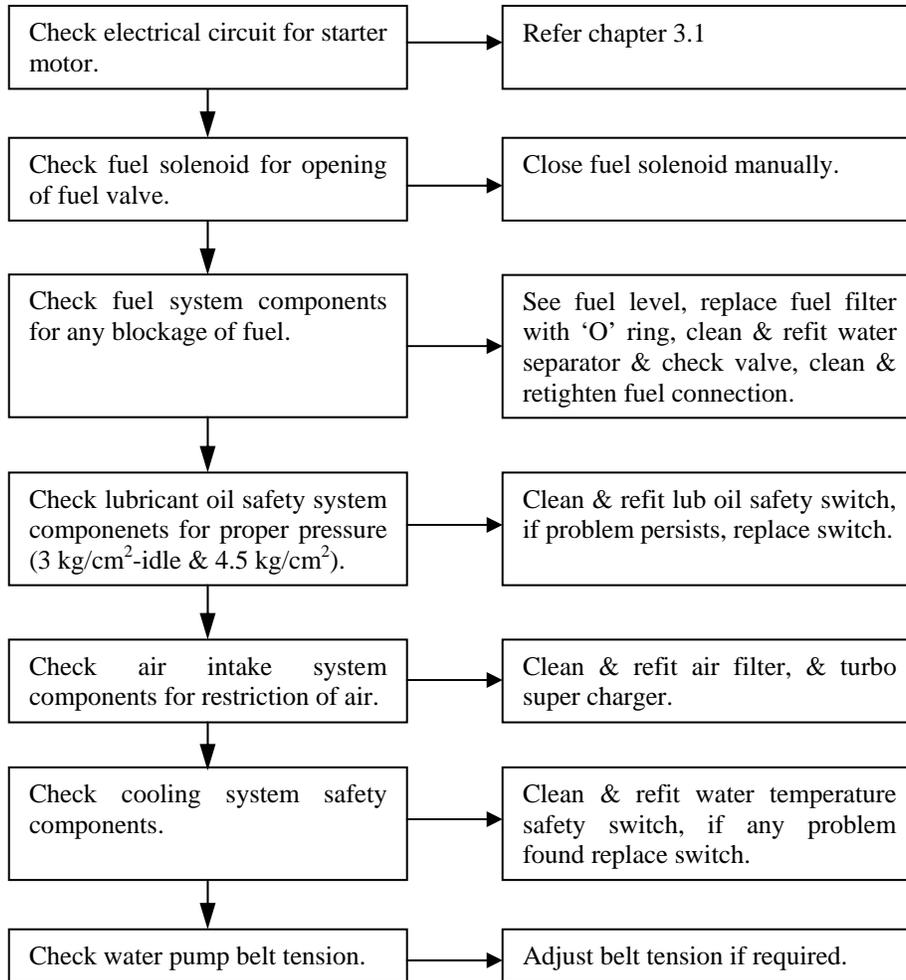


**Rigging OUT**



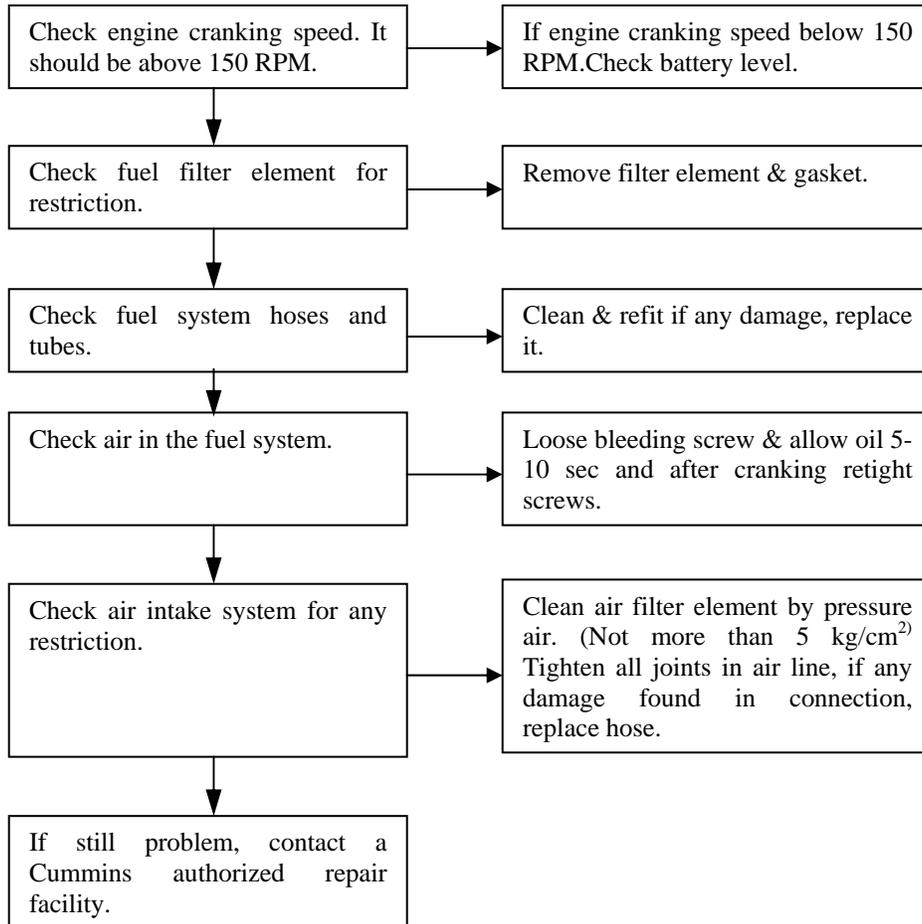






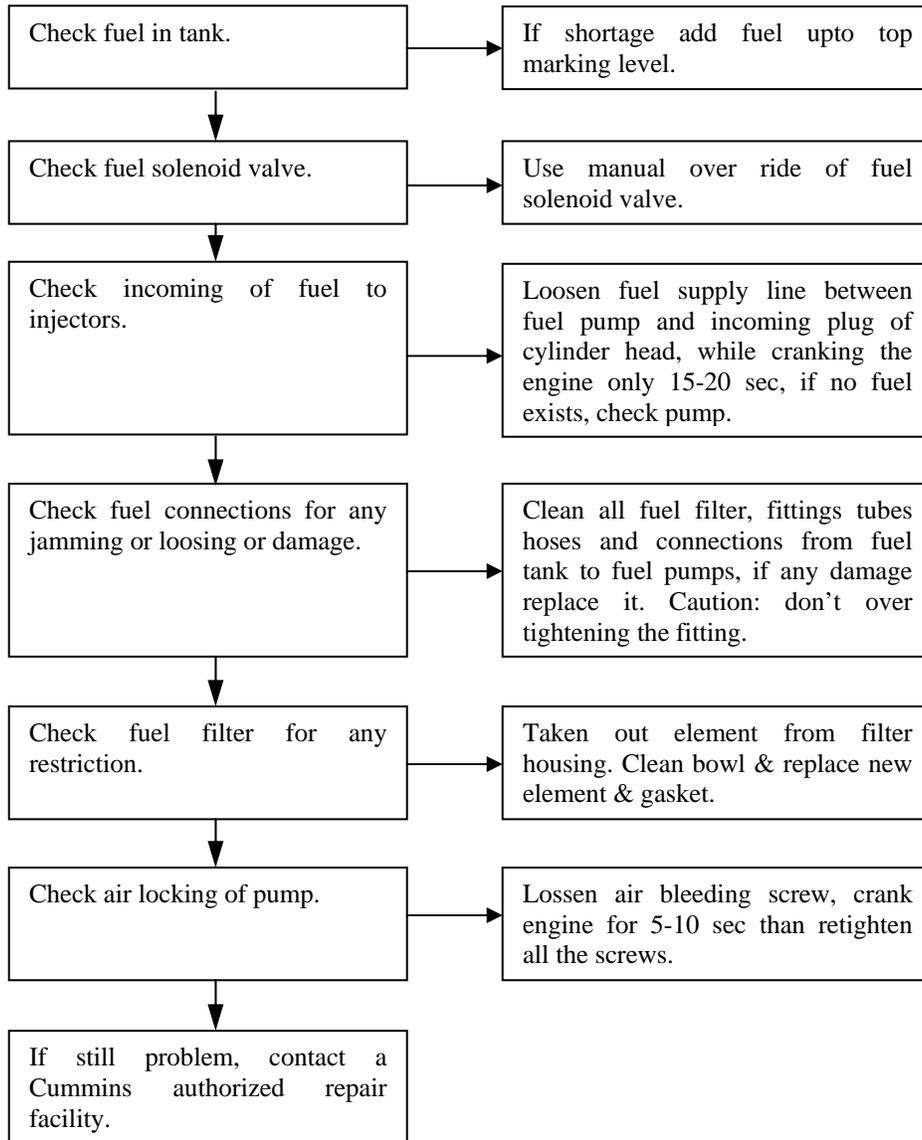
**ENGINE DIFFICULT TO START OR WILL NOT START  
(EXHAUST SMOKE PRESENT)**

1.29 P 1/1



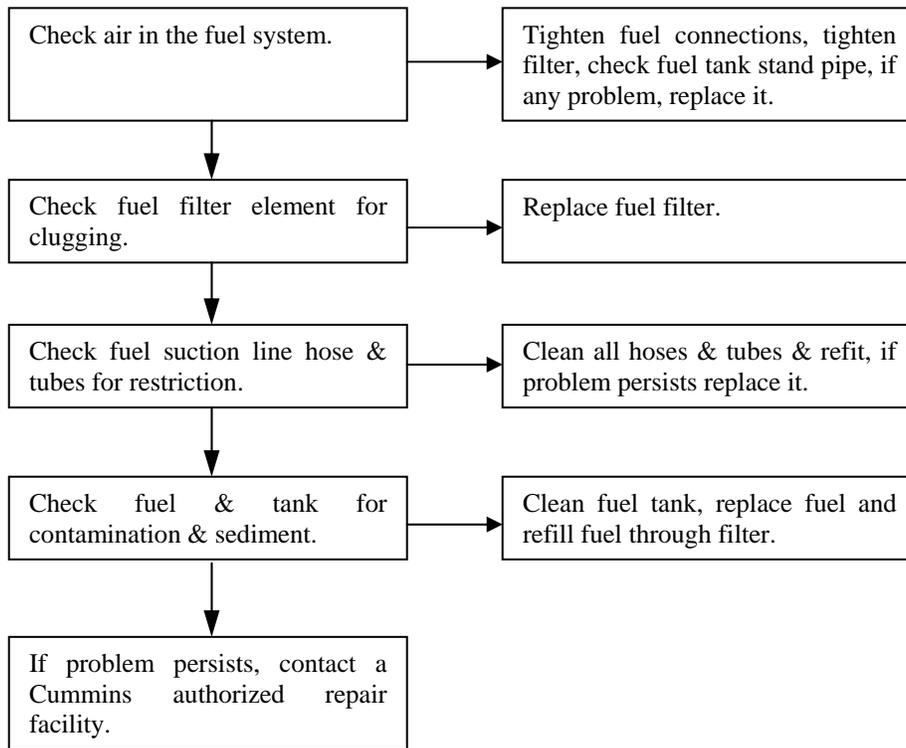
**ENGINE CRANKS BUT WILL NOT START  
(NO SMOKE FROM EXHAUST)**

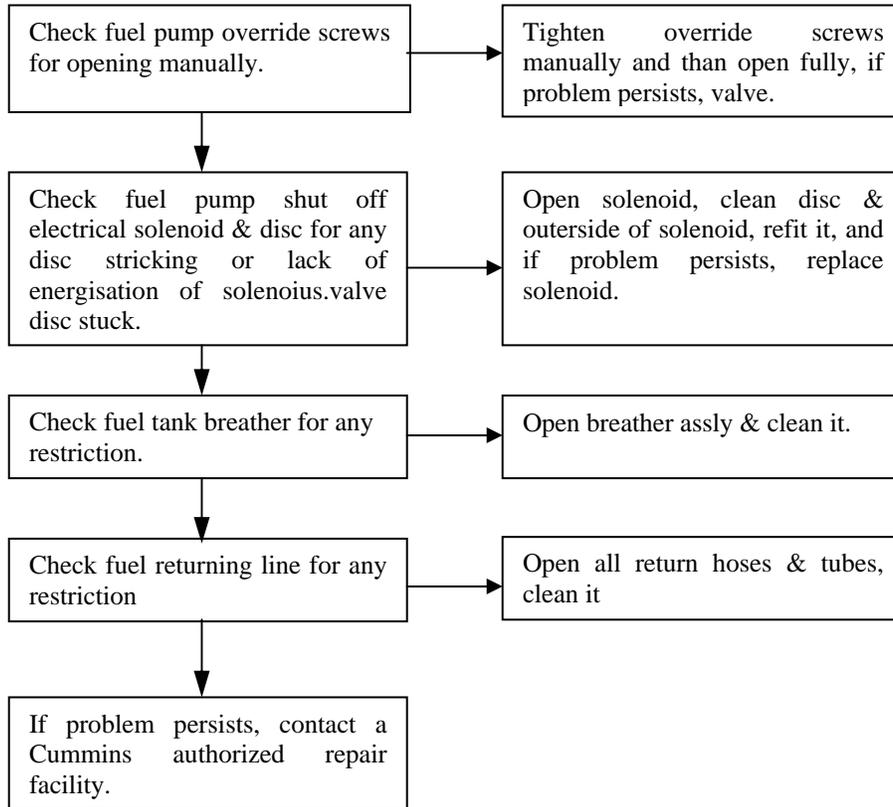
**1.30 P 1/1**

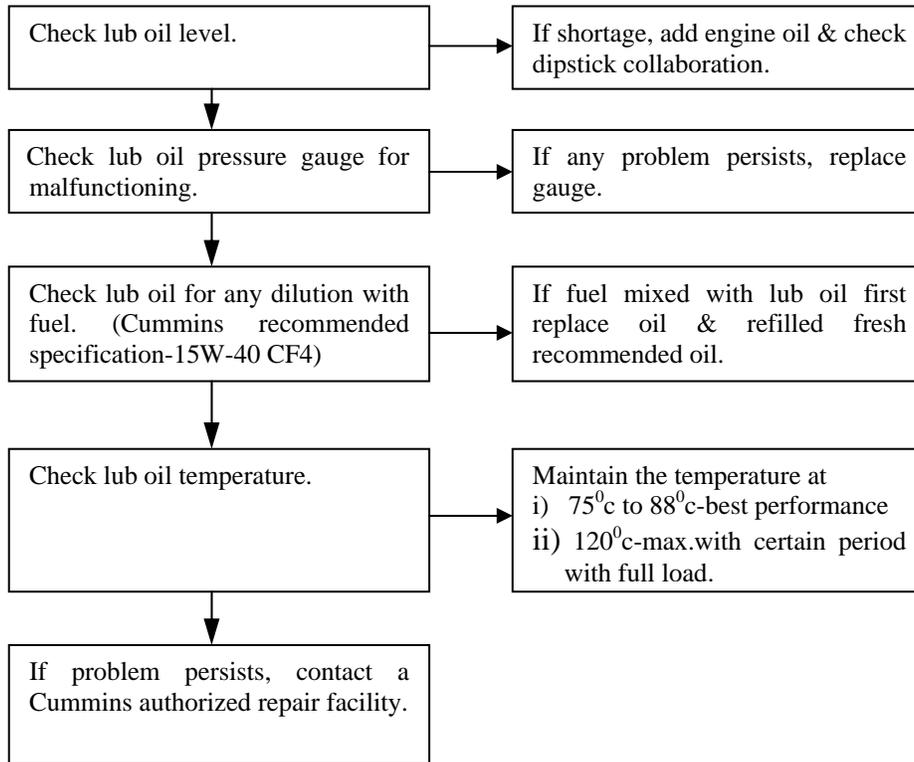


**ENGINE STARTS BUT WILL NOT KEEP RUNNING**

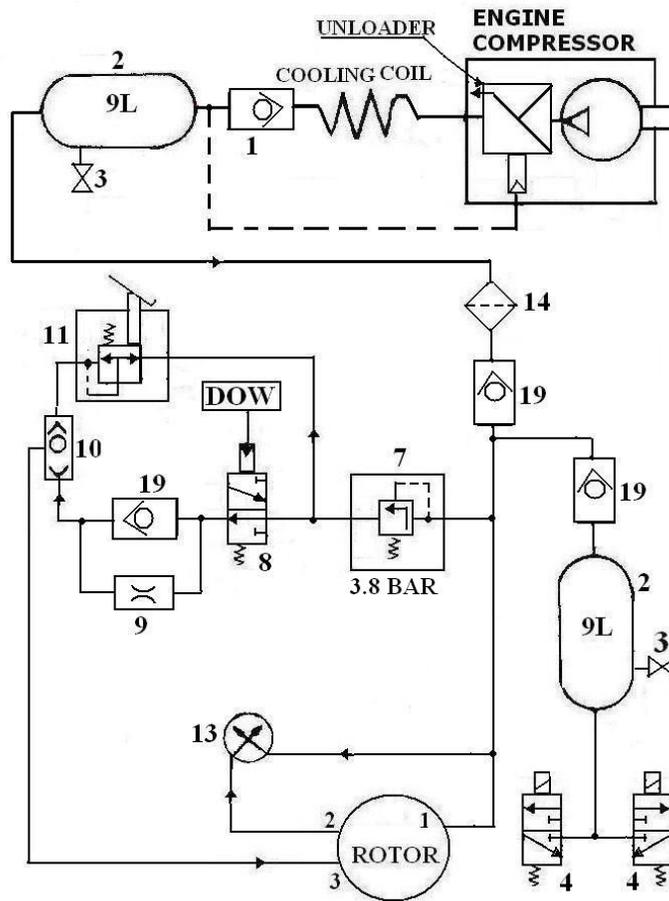
**1.31 P 1/1**



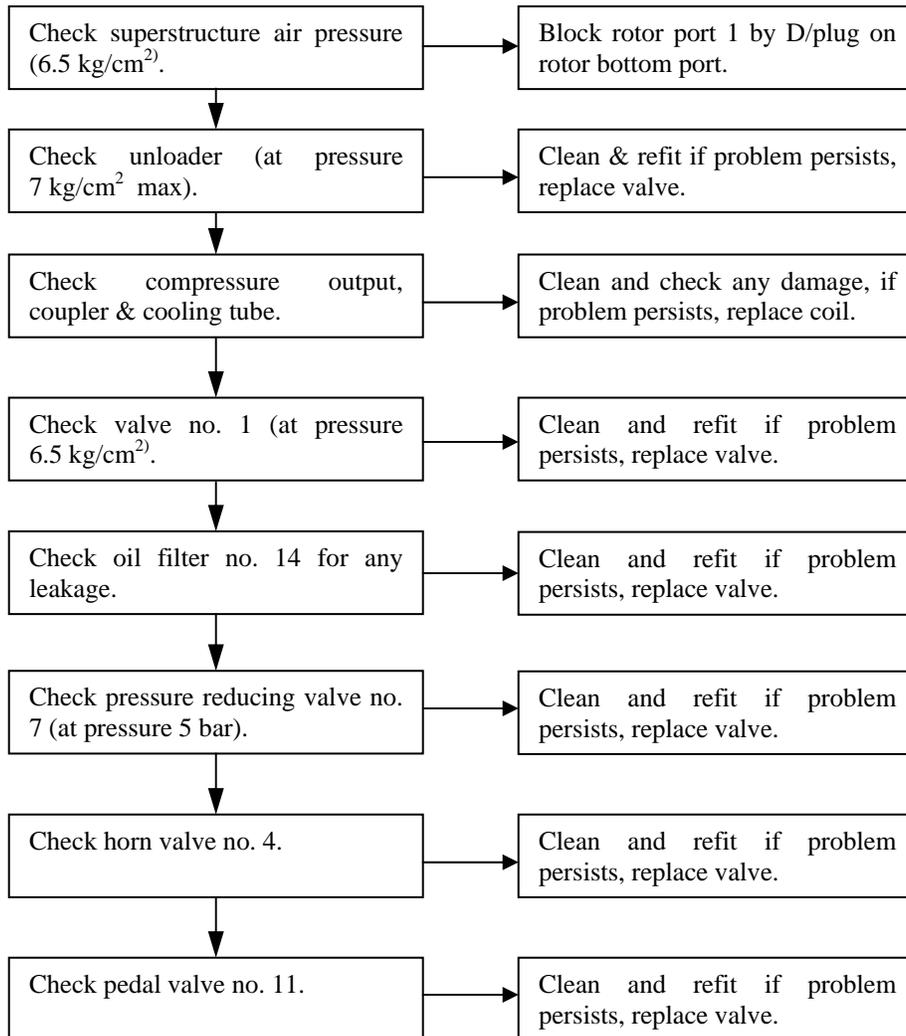




**Pn. Charging Circuit S/S**

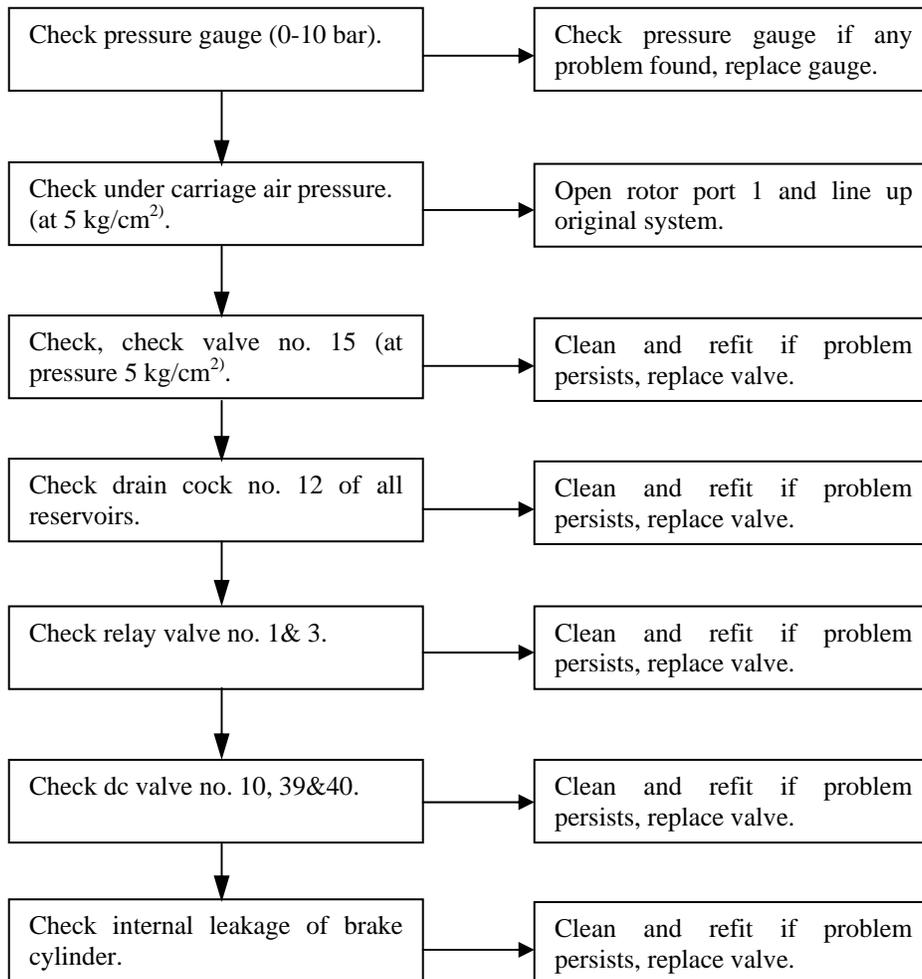


**Check air pressure in two stages. First confirm superstructure air then under carriage air.**





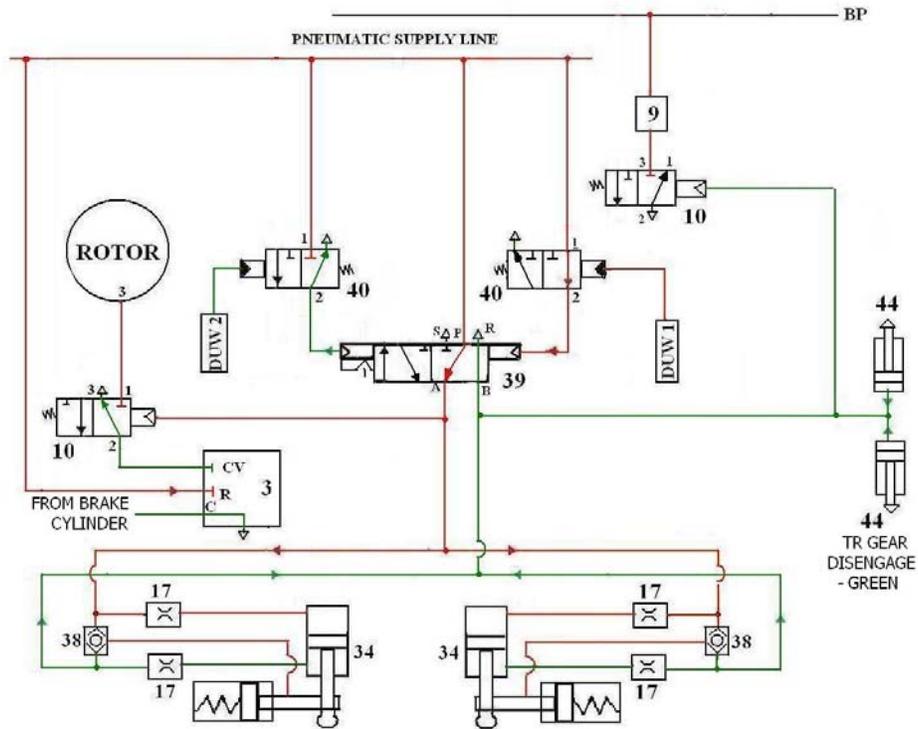
**After confirm superstructure air then check following steps for whole charging system.**



**AXLE BLOCKING ON BUT TRAVEL PINION NOT ENGAGED  
& BRAKE NOT APPLIED**

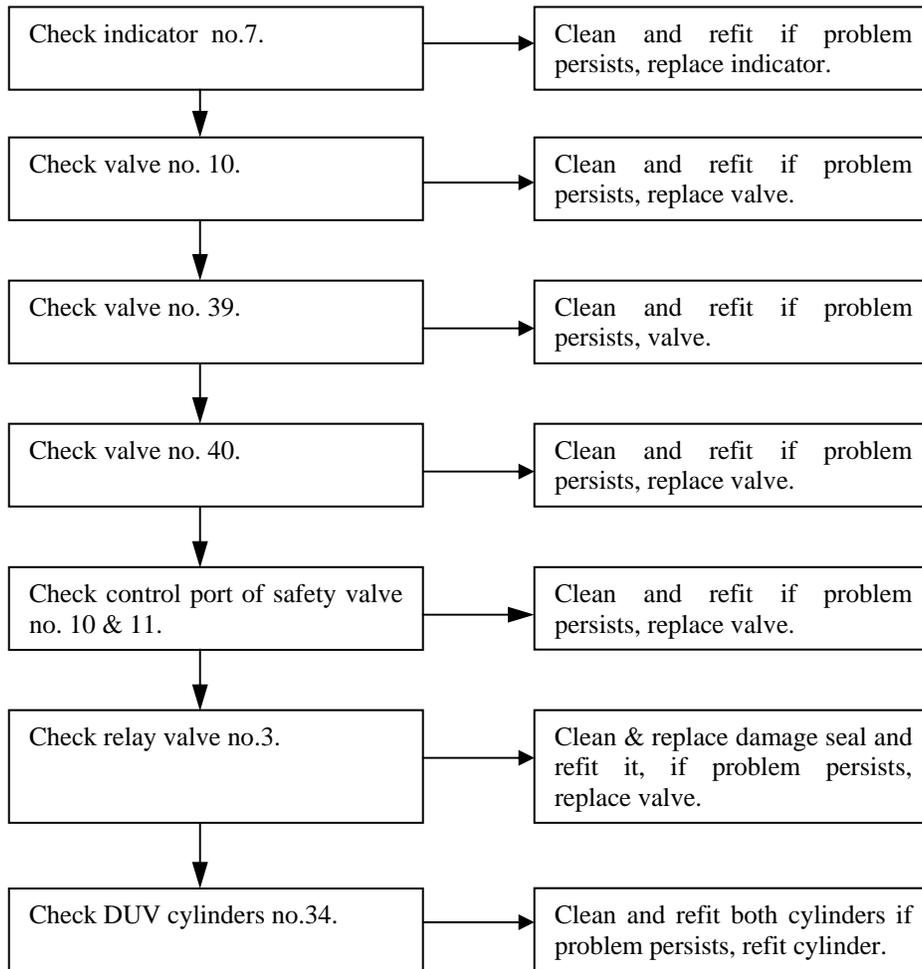
2.2 P 1/2

**Axle blocking Release Circuit**



**AXLE BLOCKING ON BUT TRAVEL PINION NOT ENGAGED  
& BRAKE NOT APPLIED**

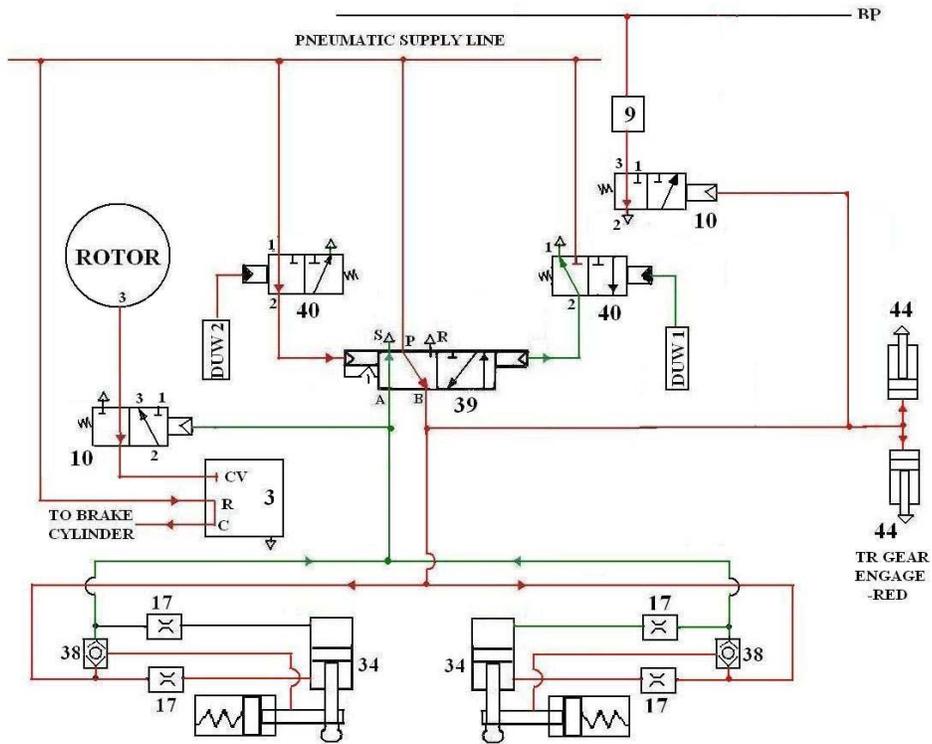
2.2 P 2/2



**AXLE BLOCKING OFF BUT TRAVEL PINION ENGAGED  
 & BRAKE APPLIED**

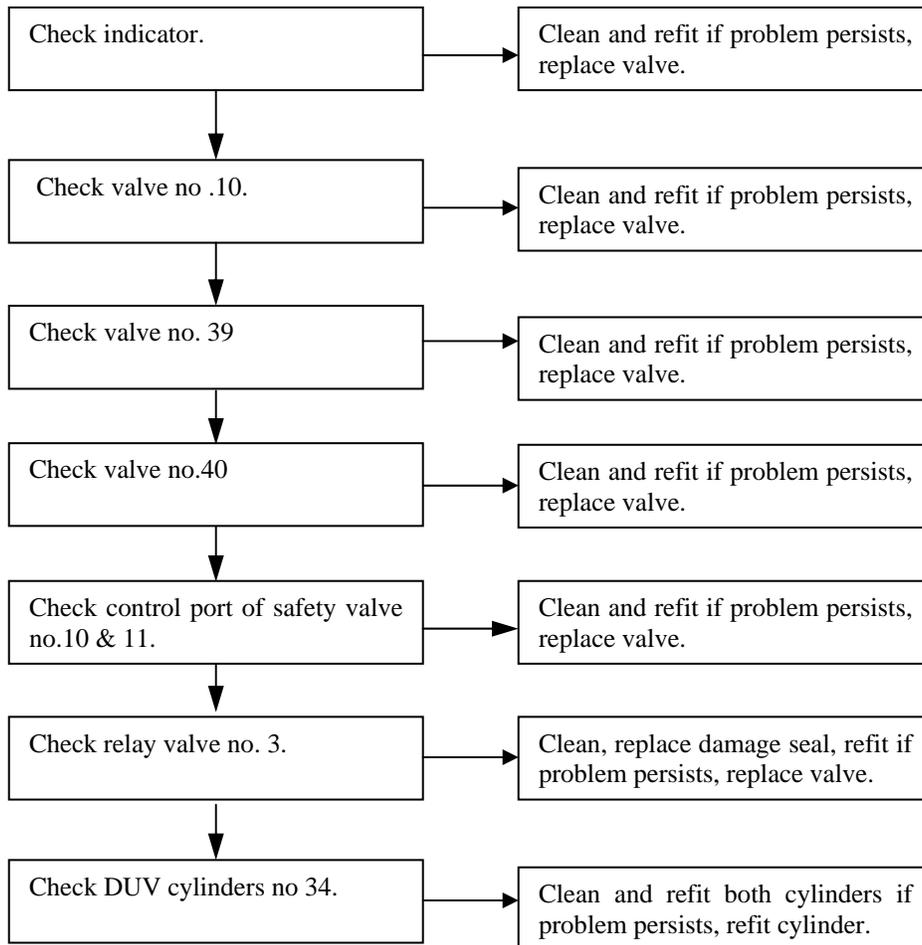
2.3 P 1/2

**Axle Blocking Application Circuit**



**AXLE BLOCKING OFF BUT TRAVEL PINION ENGAGED  
& BRAKE APPLIED**

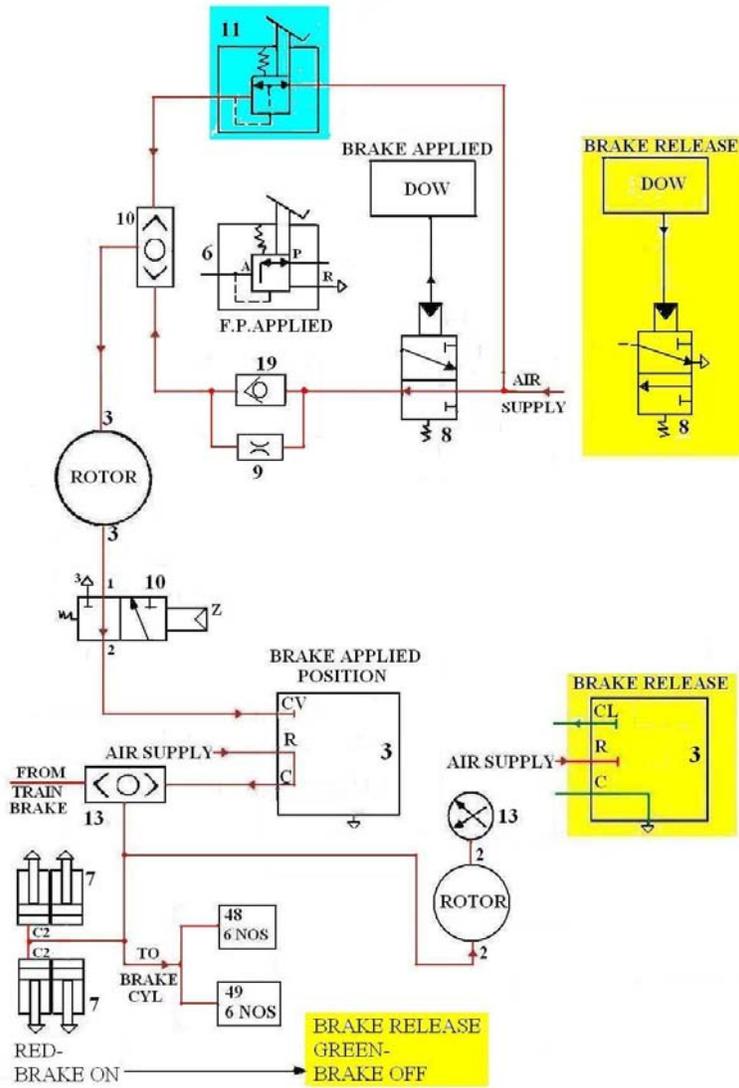
2.3 P 2/2



**BRAKE RELEASE / APPLICATION NOT FUNCTIONING IN  
 SELF TRAVEL OPERATION**

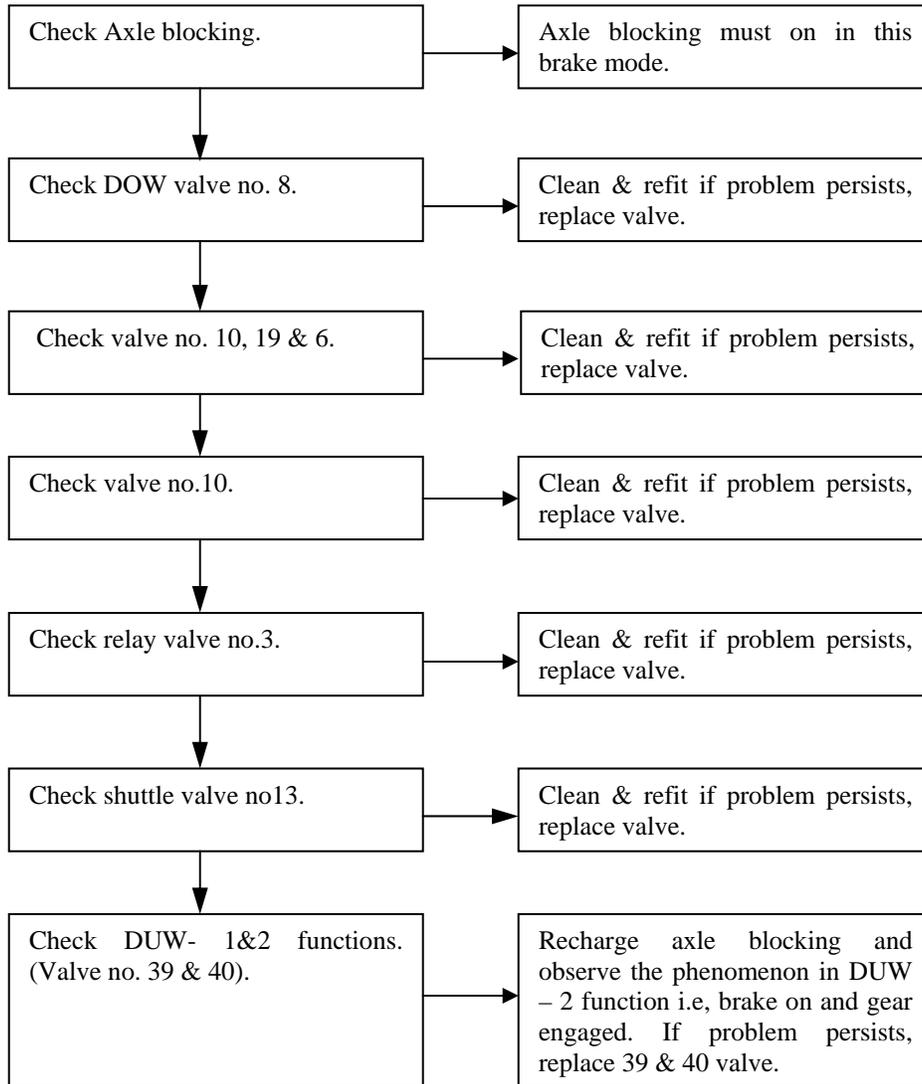
2.4 P 1/2

**Service Brake Circuit**



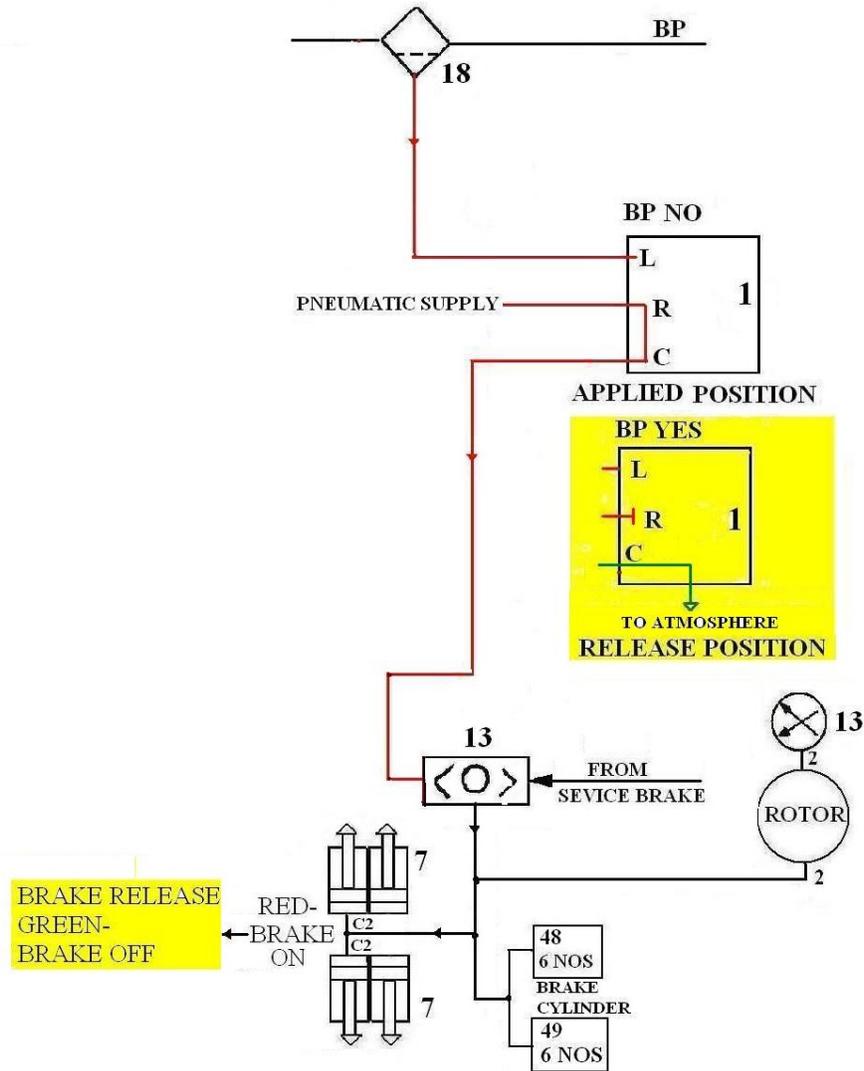
**BRAKE RELEASE / APPLICATION NOT FUNCTIONING IN  
SELF TRAVEL OPERATION**

2.4 P 2/2

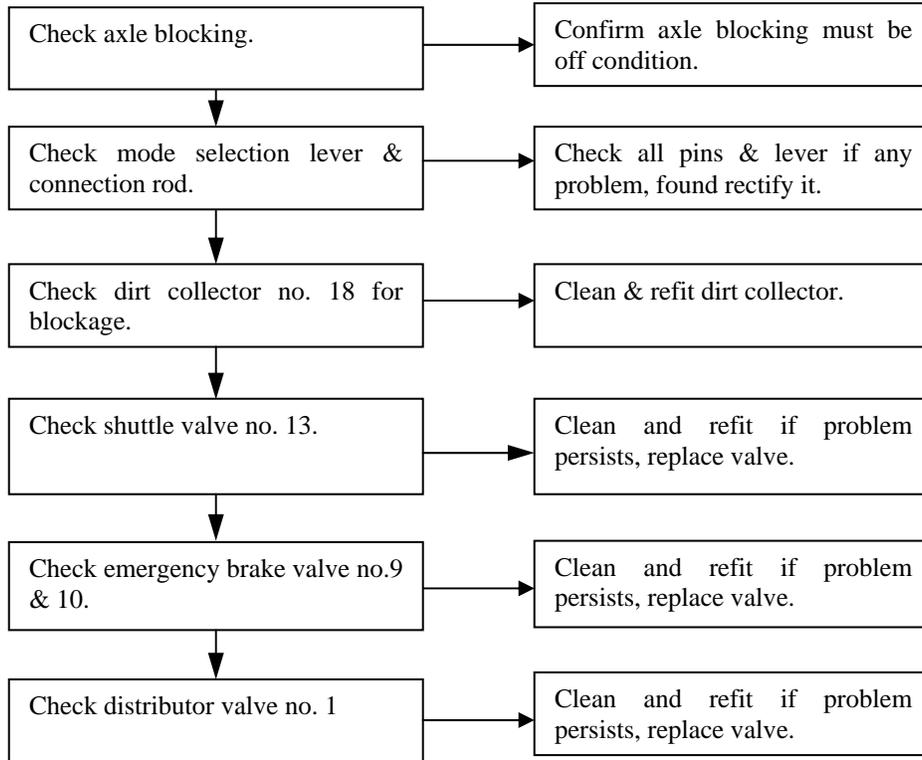


**MALFUNCTIONING OF SERVICE BRAKE (APPLICATION / RELEASE  
 IN SERVICE BRAKE MODE) (AIR MODE) 2.5 P 1/2**

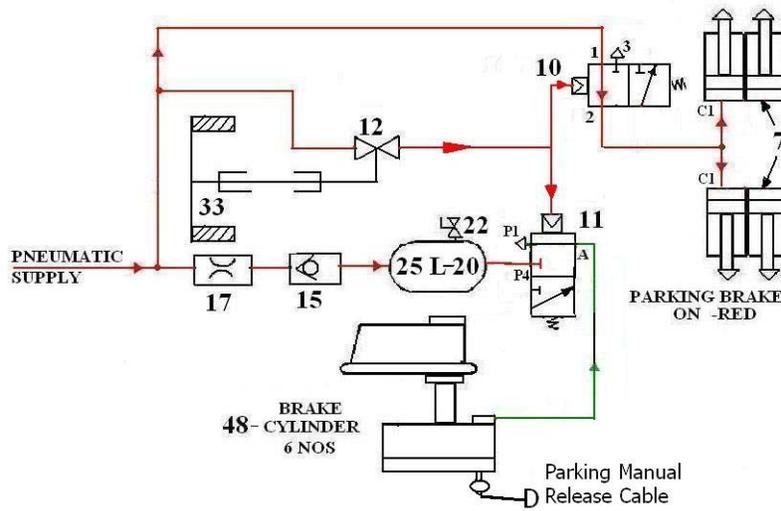
**Train Brake Circuit**



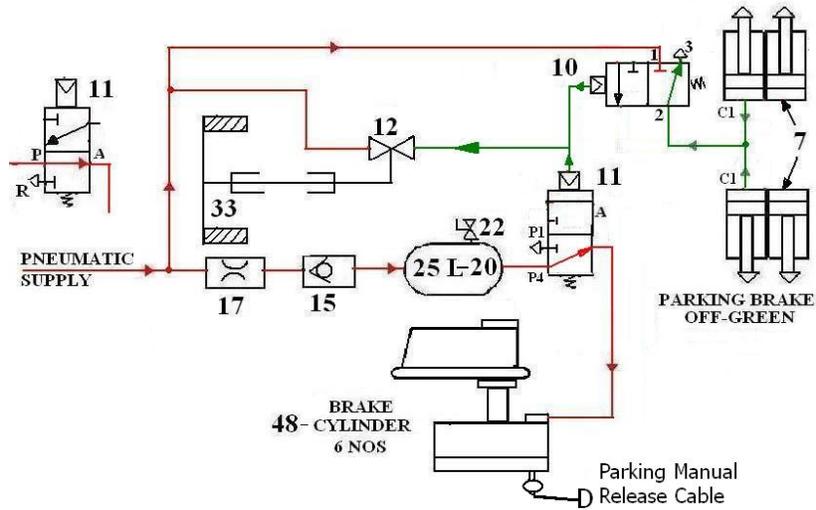
**MALFUNCTIONING OF SERVICE BRAKE (APPLICATION / RELEASE  
IN SERVICE BRAKE MODE) (AIR MODE) 2.5 P 2/2**

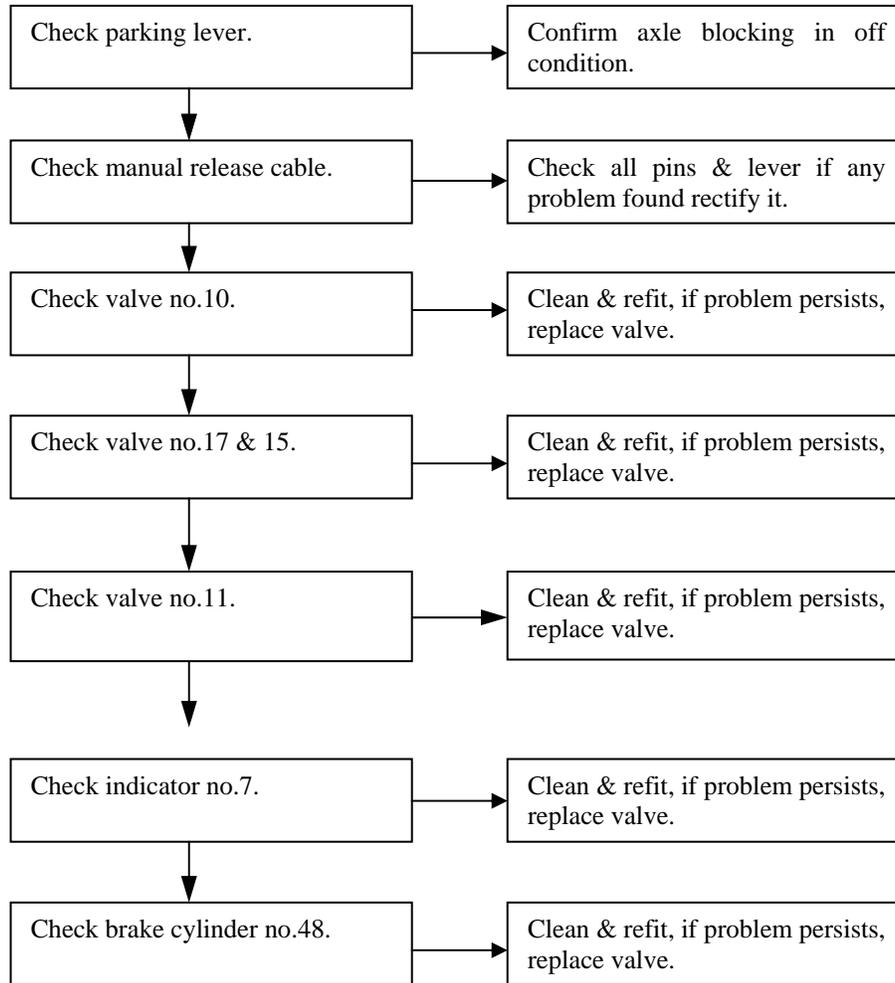


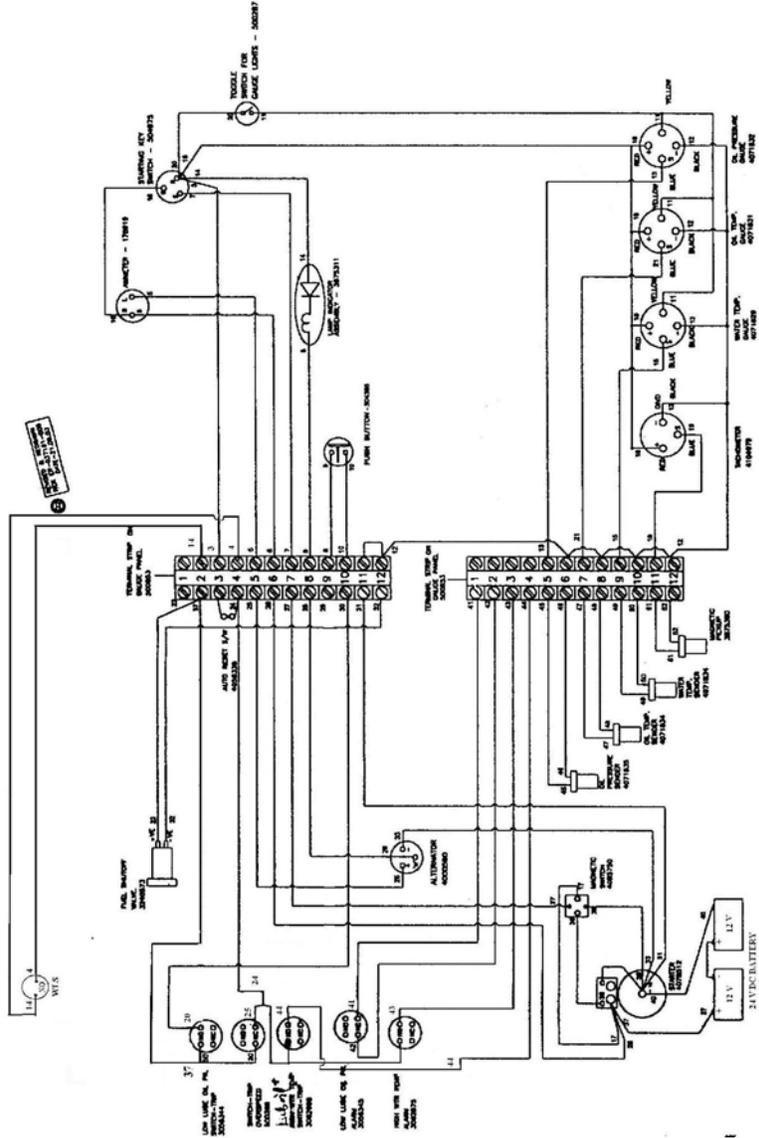
**Parking Brake Application Circuit**

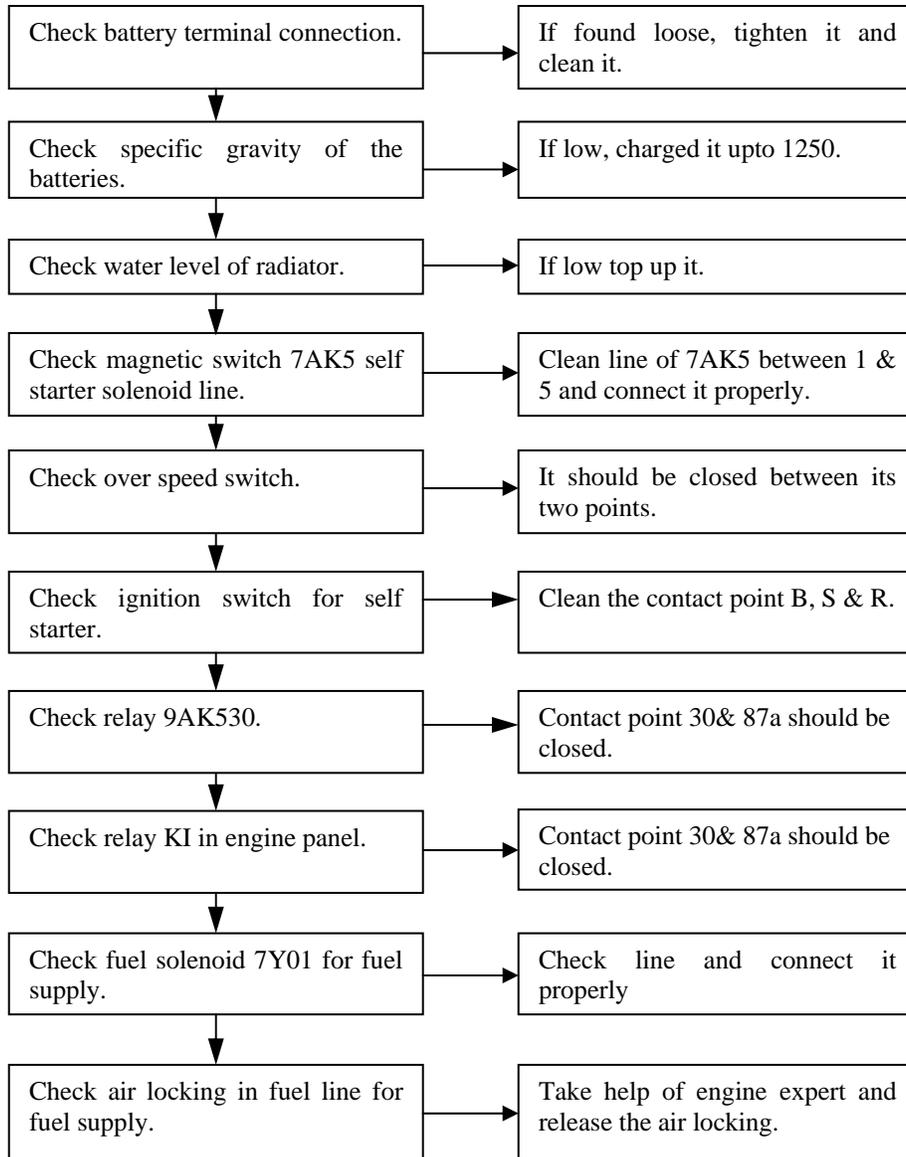


**Parking Brake Release Circuit**



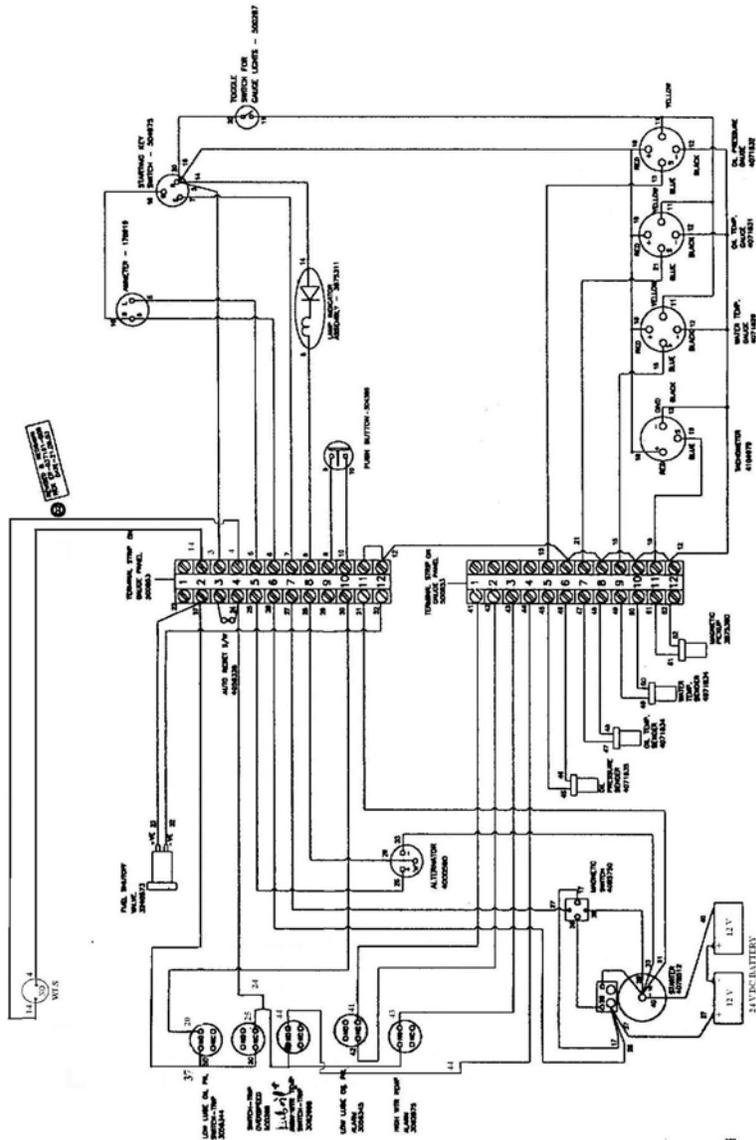






**GUAGE NOT SHOW PROPER READING (WATER TEMP,  
 OIL TEMP AND OIL PRESSURE)**

3.2 P 1/2



**GAUGE NOT SHOW PROPER READING  
(WATER TEMP, OIL TEMP AND OIL PRESSURE)**

3.2 P 2/2

