

GPA Group plc

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F = FOLDOUT PAGE
32
MAY 20/09

D633N632

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CHAPTER 80 - STARTING

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Component Location			
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80-CONTENTS

FAULT CODE	LOG BOOK REPORT	FAULT ISOLATION REFERENCE
80 11 XA --	(01=L,02=R) Starting problem was encountered by the flight crew which is not covered by the fault code diagrams.	SSM 80-00-00, SSM 80-11-01, SSM 80-11-02
80 11 XB --	(01=L,02=R) Starting problem was encountered by the flight crew which is not covered by the fault code diagrams.	SSM 80-00-00, SSM 80-11-01, SSM 80-11-02
80 11 XC --	(01=L,02=R) Starting problem was encountered by the flight crew which is not covered by the fault code diagrams.	SSM 80-00-00, SSM 80-11-01, SSM 80-11-02
80 11 01 --	(01=L,02=R) Engine N3 failed to rotate with start selector in GND, start VALVE light was off and duct pressure was normal.	FIM 80-11-00/101, Fig. 103, Block 1
80 11 02 --	(01=L,02=R) Engine max N3 motoring speed low during start, duct pressure was normal with start valve open.	FIM 80-11-00/101, Fig. 104, Block 1
80 11 03 --	(01=L,02=R) Engine start VALVE light (failed to, remained) on and EICAS msg: (L,R) ENG STARTER (did not, did) displ with start selector in GND, eng failed to rotate.	FIM 80-11-00/101, Fig. 105, Block 1
80 11 04 --	(01=L,02=R) Engine start selector sw failed to hold in GND during start, eng rotated normal when held in GND.	FIM 80-11-00/101, Fig. 106, Block 1
80 11 05 --	(01=L,02=R) Engine start selector sw failed to hold in GND during start, eng failed to rotate when held in GND.	FIM 80-11-00/101, Fig. 106, Block 1
80 11 08 --	(01=L,02=R) Engine start VALVE light remained on and EICAS msg (L/R) STARTER CUTOUT displayed during start when start selector returned to AUTO.	FIM 80-11-00/101, Fig. 107, Block 1

EFFECTIVITY

ALL

80-FAULT CODE INDEX

R02

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FAULT CODE	LOG BOOK REPORT	FAULT ISOLATION REFERENCE
80 11 11 --	(01=L,02=R) Engine start selector returned to AUTO before 47% N3, _____% during start.	FIM 80-11-00/101, Fig. 106, Block 1
80 11 12 --	(01=L,02=R) Engine start selector failed to return to AUTO at 47% N3 during start. Manually selected to AUTO.	FIM 80-11-00/101, Fig. 108, Block 1
80 11 13 --	(01=L,02=R) Engine had impending hot start. Starter cutout early at _____% N3.	FIM 80-11-00/101, Fig. 106, Block 1
80 11 15 --	(01=L,02=R) Engine start VALVE light (failed to, remained) on and EICAS msg (L,R) ENG STARTER (did not, did) display with start selector in GND. Engine rotation was normal.	FIM 80-11-00/101, Fig. 105, Block 22

EFFECTIVITY

ALL

80-FAULT CODE INDEX

R01

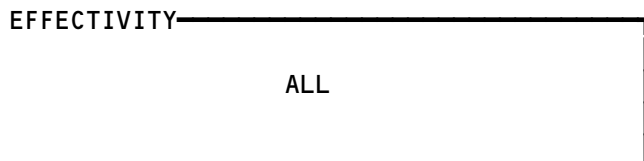
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ENGINE STARTING SYSTEM

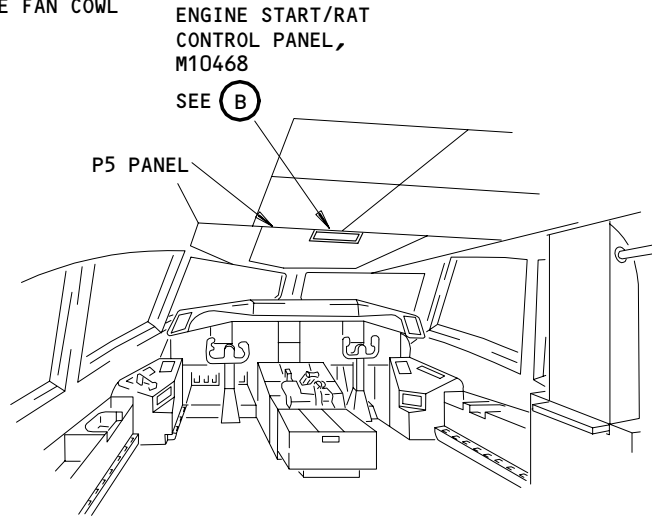
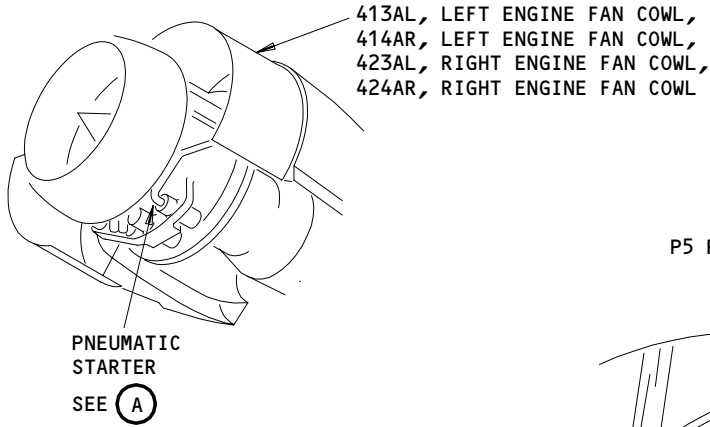
COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	REFERENCE
ADAPTER - STARTER QAD	--	2	413AL,414AR, LEFT ENGINE FAN COWL, 423AL,424AR, RIGHT ENGINE FAN COWL	80-11-07
FILTER - STARTER CONTROL VALVE	--	2	413AL,414AR, LEFT ENGINE FAN COWL, 423AL,424AR, RIGHT ENGINE FAN COWL	80-11-08
PANEL - ENG START/RAT CONT, M10468 RELAYS - (31-01-36/101) LEFT ENGINE CONTROLS POWER, K10208 LEFT ENGINE START DISAGREE, K10209 LEFT ENGINE START 2, K10247 LEFT ENGINE START 3, K10248 LEFT ENGINE START TO STOP, K10212 RELAYS - (31-01-37/101) RIGHT ENGINE CONTROLS POWER, K10220 RIGHT ENGINE START DISAGREE, K10221 RIGHT ENGINE START 2, K10250 RIGHT ENGINE START 3, K10251 RIGHT ENGINE START TO STOP, K10224		1	FLIGHT COMPARTMENT, P5	*
STARTER - PNEUMATIC	--	2	413AL,414AR, LEFT ENGINE FAN COWL, 423AL,424AR, RIGHT ENGINE FAN COWL	80-11-01
SWITCH - LEFT ENGINE START, S3	--	1	FLIGHT COMPARTMENT, P5, ENGINE START/RAT CONTROL PANEL, M10468	*
SWITCH - RIGHT ENGINE START, S4	--	1	FLIGHT COMPARTMENT, P5, ENGINE START/RAT CONTROL PANEL, M10468	*
VALVE - STARTER CONTROL, V10008	--	2	413AL,414AR, LEFT ENGINE FAN COWL, 423AL,424AR, RIGHT ENGINE FAN COWL	80-11-08

* SEE THE WDM EQUIPMENT LIST

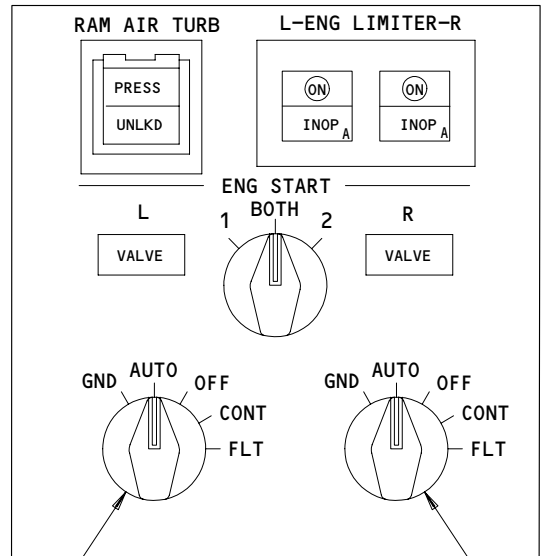
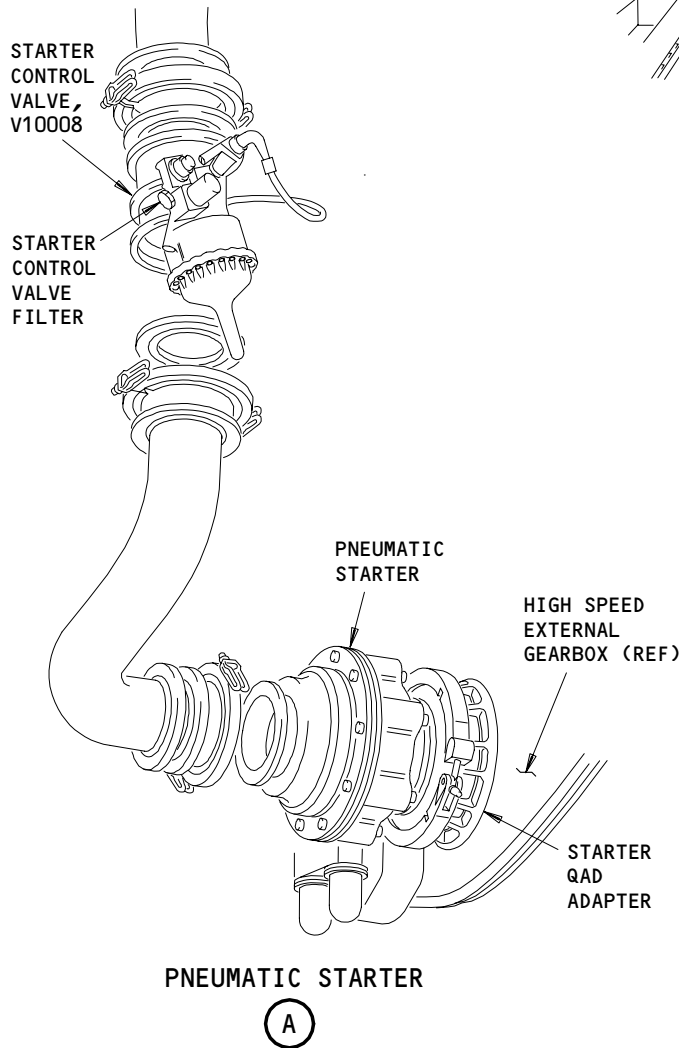
Engine Starting System - Component Index
Figure 101



80-11-00



FLIGHT COMPARTMENT



ENGINE START/RAT CONTROL PANEL, M10468
(B)

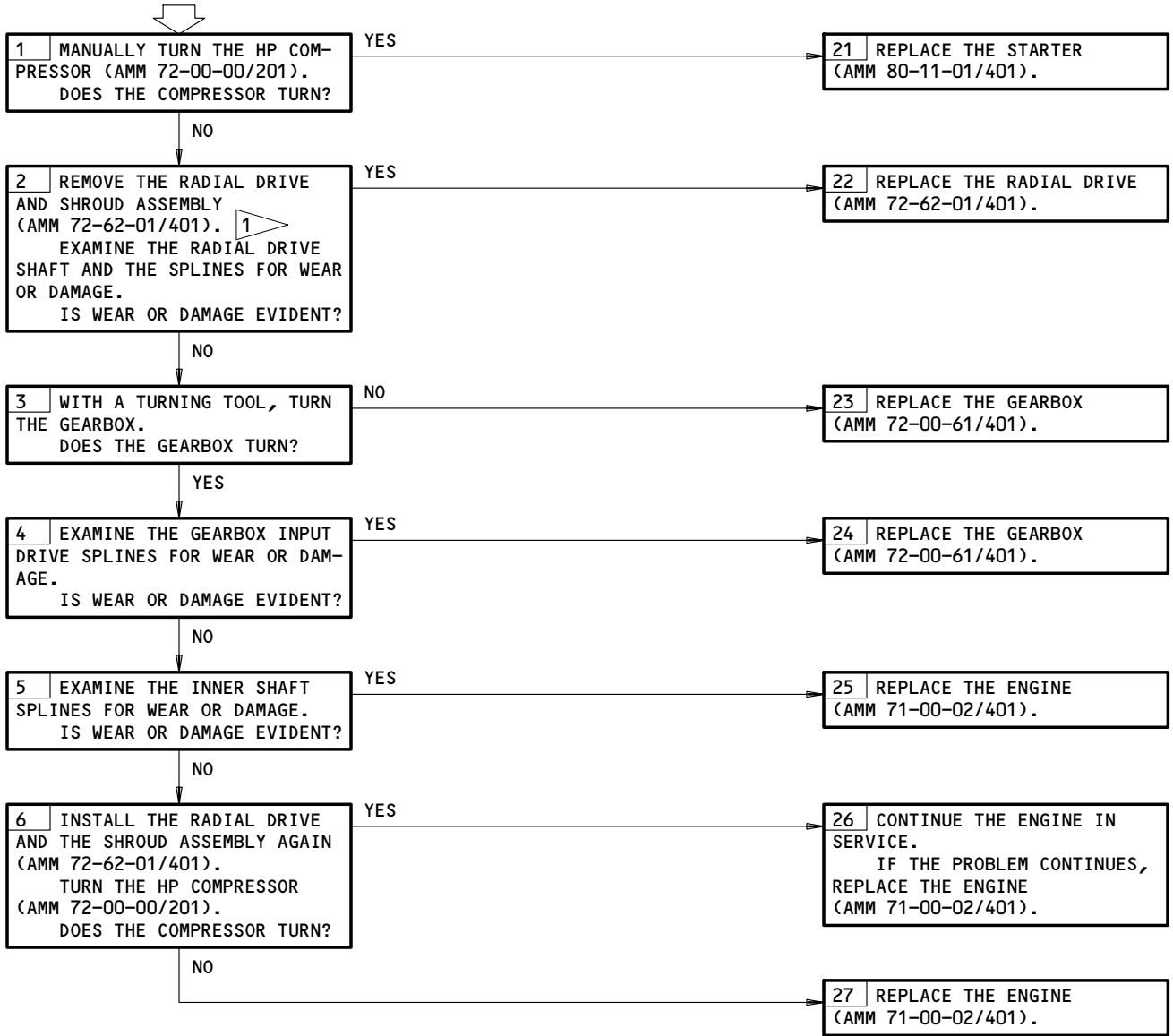
Engine Starting System - Component Location
Figure 102

EFFECTIVITY	ALL
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80-11-00

PREREQUISITES
NONE

NO N3 ROTATION



1 IF A STARTER ASSISTED RELIGHT OR A GROUND START OF THE ENGINE RESULTS IN A FAILED RADIAL DRIVE, THERE CAN BE OIL LEAKS INTO THE HP DRUM. REPLACE THE ENGINE.

No N3 Rotation
Figure 103

EFFECTIVITY

ALL

80-11-00

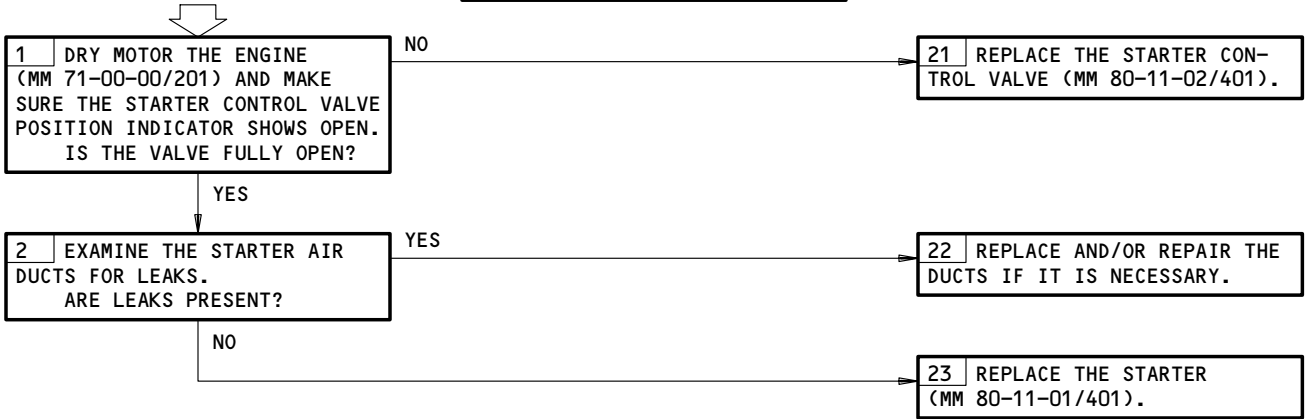
R01

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70740

LOW MAX MOTORING

PREREQUISITES
NONE



Low Max Motoring
Figure 104

EFFECTIVITY ————
ALL

80-11-00

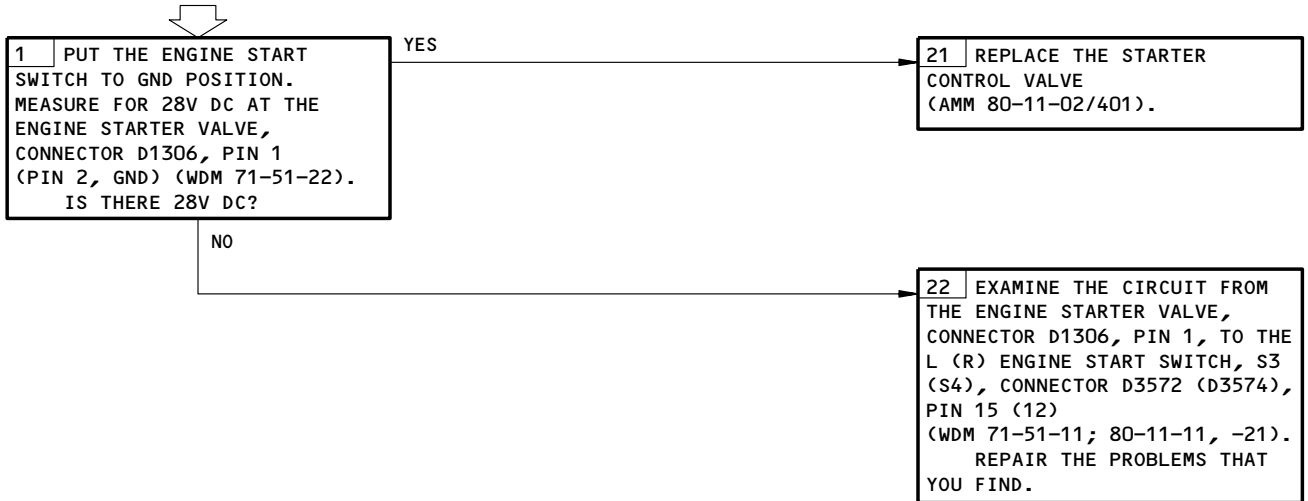
A76343

PREREQUISITES

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11D19 (11D20)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)

**STARTER "VALVE"
LIGHT ON**



Starter VALVE Light On
Figure 105

EFFECTIVITY	ALL
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80-11-00

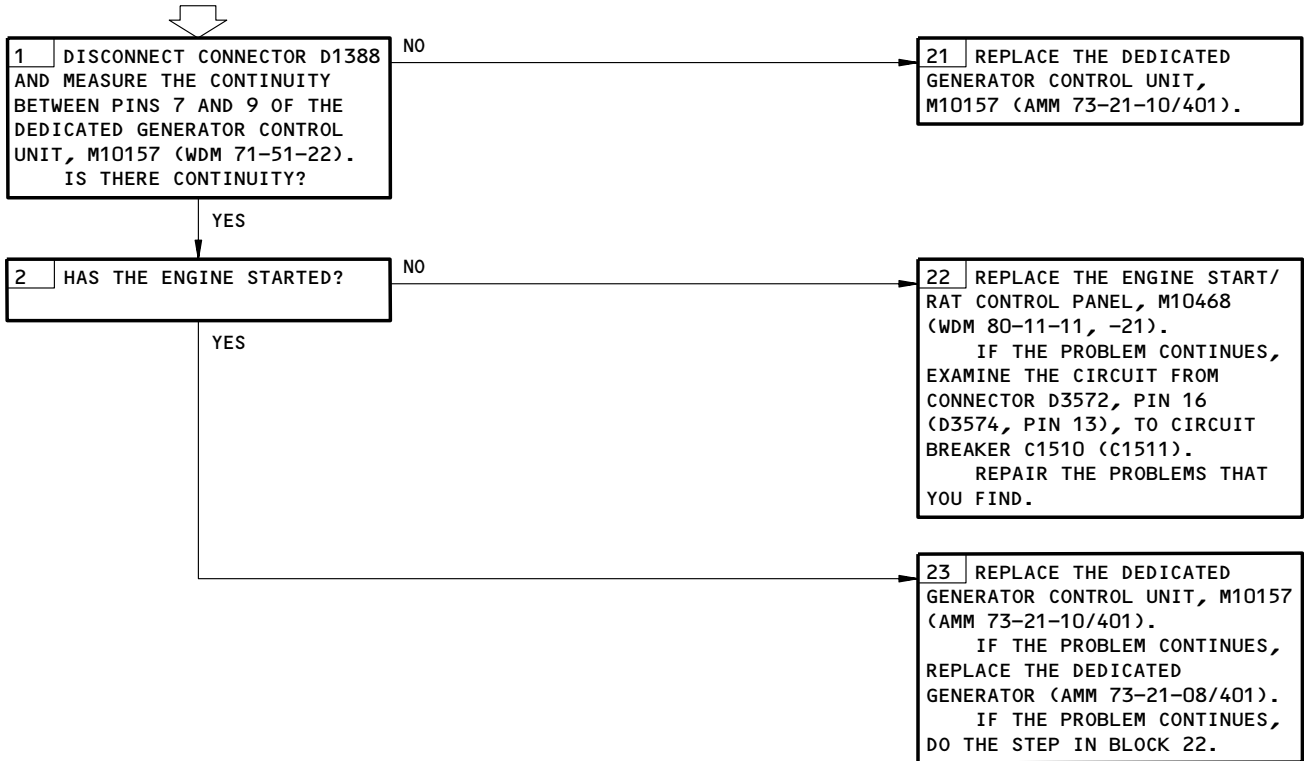
R03

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70741

PREREQUISITES
MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11D19 (11D20)
MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)

START SWITCH FAILED TO HOLD IN "GND"



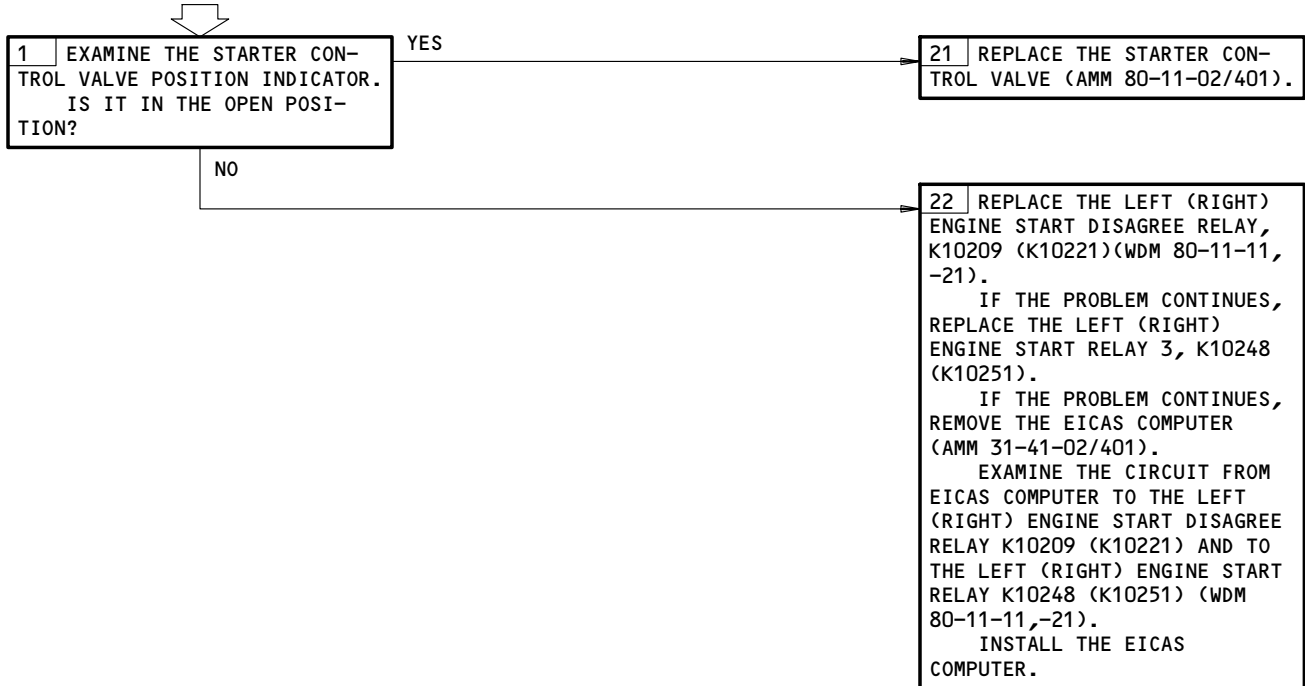
Start Switch Failed to Hold in GND
Figure 106

EFFECTIVITY
ALL

80-11-00

STARTER "VALVE"
LIGHT ON AFTER
START SWITCH
RETURNED TO "AUTO"

PREREQUISITES
NONE



Starter VALVE Light on After Start Switch Returned to AUTO
Figure 107

EFFECTIVITY	ALL
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80-11-00

START SWITCH FAILED
TO RETURN TO "AUTO"
AT 47% N3 1

PREREQUISITES

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11D19 (11D20)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)

1 REMOVE THE LEFT (RIGHT) ENGINE START RELAY 2, K10247 (K10250), LEFT (RIGHT) ENGINE START RELAY 3, K10248 (K10251) AND LEFT (RIGHT) ENGINE CONTROLS POWER RELAY, K10208 (K10220).
DISCONNECT CONNECTOR D1306 AT THE ENGINE STARTER VALVE, V10008.
PUT THE LEFT (RIGHT) ENGINE START SWITCH, S3 (S4), TO GND.
DISCONNECT CONNECTOR D1388.
MAKE SURE THE START SW MOVES TO AUTO.
CONNECT CONNECTORS D1388 AND D1306.
INSTALL RELAYS K10247 (K10250), K10248 (K10251), AND K10208 (K10220) (WDM 80-11-11, WDM 80-11-21).
DID THE START SWITCH MOVE TO AUTO?

NO

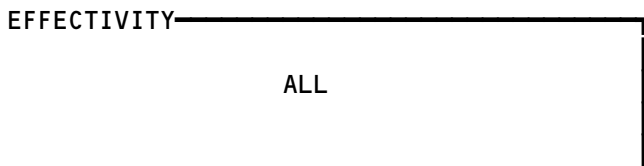
21 REPLACE THE ENGINE START/RAM AIR TURBINE CONTROL PANEL, M10468 (WDM 80-11-11, WDM 80-11-21).

YES

22 REPLACE THE DEDICATED GENERATOR CONTROL UNIT, M10157 (AMM 73-21-10/401).
IF THE PROBLEM CONTINUES, REPLACE THE DEDICATED GENERATOR (AMM 73-21-08/401).

1 IT IS ACCEPTABLE IF THE START SWITCH DOES NOT RETURN TO "AUTO" BY 47% N3, PROVIDED THAT THE START SWITCH DOES RETURN TO "AUTO" BY IDLE SPEED AND THE "EICAS" CAUTION MESSAGE "L (R) STARTER CUTOUT" DOES NOT DISPLAY.

Start Switch Failed to Return to AUTO at 47% N3
Figure 108



80-11-00