DOUGLAS AIRCRAFT COMPANY
McDONNELL DOUGLAS CORPORATION

3855 Lakewood Boulevard
Long Beach, California 90801

DC-9

REFERENCE:
BULLETIN 24-69

SERVICE BULLETIN SUMMARY

NOTE: This summary is for information only and is not FAA approved for modification of aircraft.

SUBJECT: ELECTRICAL POWER - Electrical Load Distribution - Replace Lavatory Flush Pump Motor Circuit Breakers.

NOTE

The applicable group for affected aircraft is to be determined by the operator as follows:

Group I

Applicable to aircraft equipped with one lavatory.

Group II

Applicable to aircraft equipped with two lavatories.

Group III

Applicable to aircraft equipped with three lavatories.

ANALYSIS: Seven operators have reported overheating of the lavatory flush pump motor. The overheating may occur when the motor is exposed to either single-phase power or power with a locked rotor for an extended period of time. If not corrected, unscheduled maintenance of the lavatory flush pump motor may be required.

MODIFICATION DESCRIPTION: Replaces the 5-amp lavatory system flush pump motor circuit breakers with 1-amp circuit breakers on the ground service bus circuit breaker panel, on the left console or electrical power center, as applicable. Accomplishment of this modification, which installs a circuit breaker incorporating a unique current-time characteristic, will provide the maximum overheat protection without causing circuit breaker trips.

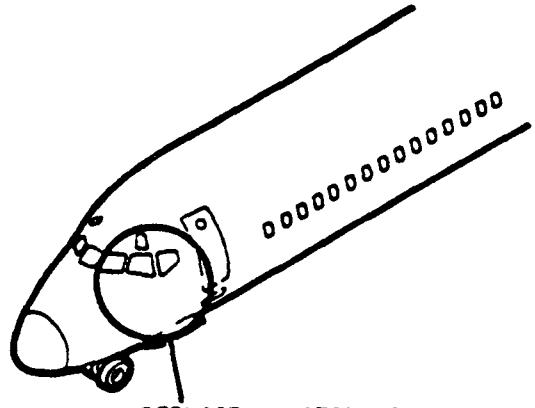
EFFECTIVITY: DC-9 Series 10, 20, 30, 40, 50, C-9, MD-81, and MD-82 aircraft. (See Service Bulletin 24-69 for detailed effectivity.)

COMPLIANCE: Recommended. To be accomplished at operator's convenience.

MANPOWER:

	Group I	II	III
Total Man-Hours	1.5	2.0	2.2
Total Elapsed Hours	1.5	2.0	2.2

MATERIAL INFORMATION: DAC parts required to accomplish this modification are to be purchased from DAC as end item spares. Remaining parts are to be procured from operator's stock or supplier.



REPLACE LAVATORY FLUSH PUMP MOTOR CIRCUIT BREAKERS

DOUGLAS AIRCRAFT COMPANY
MCDONNELL DOUGLAS CORPORATION

DC-9

3855 Lakewood Boulevard
Long Beach, California 90801

BULLETIN 24-69

SERVICE BULLETIN

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Applicable to aircraft equipped with two lavatories.

Group III

Applicable to aircraft equipped with three lavatories.

1. Planning Information:

A. Effectivity:

(1) Aircraft Affected:

DC-9, Series 10, 20, 30, 40, 50, C-9, MD-81, and MD-82

(a) Operator and Aircraft Number:

Operator	Factory Serial No.	Operator	Factory Serial No.
AA	49145	AC (cont)	47024
	49155		47069
	49158 and 49159		47071
	49161 thru 49163		47195
	49167 and 49168		47198 and 47199
	49171 thru 49181		47265 and 47266
			47289 and 47290
AC	45845		47292 thru 47294
	47019		47340 thru 47342
	47021 and 47022		47348 thru 47350

Operator	Factory Serial No.
AC (cont)	47353 and 47354
	47422
	47485
	47546
	47554
	47557
	47560
	47592
	47598
	47611
AL	45868
	47026
	47050 thru 47054
	47057 and 47058
	47066
	47099
	47130
	47146
	47188 and 47189
	47207 thru 47210
	47212
	47216
	47310
	47332
	47334 thru 47336
	47351 and 47352
	47371 thru 47375
	47420 and 47421
	47429
	47505 thru 47508
	47564
	47574
	47576
	47583
	47588
	47590
	47593
	48114 thru 48120
	48131
	48138 thru 48147
	48154 thru 48159
AM	45785
	47006
	47059
	47085
	47106
	47122 and 47123
	47125 thru 47127
	47356
	47394

Operator	Factory Serial No.
AM (cont)	47594
	47602
	47607
	47609
	47650
	48067 thru 48069
	48083
	48125 thru 48130
	48150 and 48151
	49149
AO	47080
	47091 and 47092
	47556
	47637
	47640
	47642 thru 47644
	47675
	47678
	47702
	47704
	47706 and 47707
	48103 thru 48106
AU	48024 and 48025
	48050
AY	45711
	45725
	45729
	47044 and 47045
	47604 thru 47606
	47613 and 47614
	47694 thru 47696
	47736 thru 47738
	47771 thru 47773
	48134 thru 48136
	49150 thru 49152
AZ	47038 and 47039
	47046 and 47047
	47101
	47128 and 47129
	47222 and 47223
	47225
	47231
	47233 thru 47236
	47238
	47283
	47311
	47339
	49192 thru 49194

Operator	Factory Serial No.			Operator	Factory Serial No.		
BD	45712	and	45713	CO (cont)	47524		
	45719				47535		
	45738	and	45739		47539		
	47048				47765		
	47430				47788		
	47468				47797	thru	47799
					48111	thru	48113
BM	47224						
	47226			DL	47176	and	47177
	47228				47257	thru	47262
	47232				47273	thru	47278
	47431	thru	47438		47284	and	47285
	47474				47317	thru	47323
	47477				47358	and	47359
	47502				47377	thru	47379
	47518				47443	thru	47445
	47533						
	47544			EA	45733	and	45734
	47575				45833	thru	45840
	47641				45863	thru	45867
					45869		
BQ	47229	and	47230		45871	thru	45876
	47237				47036		
	47519				47074		
	47553				47098		
	47591				47119	thru	47121
	47653				47140	thru	47143
					47157		
BW	47742	and	47743		47161		
	47752				47165	thru	47167
	47796				47181		
	48122				47184		
					47186	and	47187
BX	47458				47214	and	47215
					47217		
CA	49140	and	49141		47268	thru	47272
					47327	thru	47331
CO	45714	thru	45716		47399		
	45726	and	45727		47401	thru	47403
	45735	and	45736		47665		
	45742	and	45743		47676	and	47677
	45786				47679		
	45788				47682	and	47683
	45791				47685	and	47686
	45844				47688	and	47689
	45847				47692	and	47693
	47043				47728		
	47062				47731	thru	47733
	47110	thru	47112		47745	and	47746
	47218	and	47219		47749		
	47281				47751		
	47521				47753		

Operator	Factory Serial No.
EZ	47220 and 47221
	47355
FL	49102
	49114
	49116 thru 49118
GA	47385 and 47386
	47481
	47561
	47569
	47601
	47635 and 47636
	47701
	47722
	47730
	47740 and 47741
	47744
	47789 thru 47795
GB	45717 and 45718
	45728
	47002
	47008
	47040
	47072
	47147
	47203
	47380 and 47381
	47426 and 47427
GH	47755
HA	47763 and 47764
	48044 and 48045
	48051
	48058
IB	47037
	47076
	47079
	47084
	47088 thru 47090
	47093
	47312 thru 47314
	47364 and 47365
	47368
	47428
	47446 and 47447
	47452 thru 47456

Operator	Factory Serial No.
IB (cont)	47461
	47496
	47504
	47522
	47542 and 47543
	47545
	47565
IG	47713 thru 47715
IW	45696
	45841
I1	47408
JD	47608
	47612
	47615 and 47616
	47619 and 47620
	47759 thru 47762
	47767 and 47768
	47780 and 47781
	48029 thru 48033
	48070 thru 48072
JK	45695
	45795
	45842
JU	47425
	47460
	47469 and 47470
	47472 and 47473
	47532
	47562 and 47563
	47567 and 47568
	47571
	47582
KL	45720
	47102
	47131 thru 47133
	47168 thru 47170
	47190 thru 47194
	47201
	47279
	47462
	47514
	48132 and 48133
KQ	47478

Operator	Factory Serial No.
LM	47648
	47666
	49123 and 49124
LV	47703
	47705
	47712
	47719 thru 47721
	47727
	47770
	47782
MC	47363
	47659 and 47660
	48056 and 48057
	49120 thru 49122
	49125
ML	45737
	45741
	45776
	45778 thru 45781
	45783 and 45784
	47005
	47202
	47527
	47547 thru 47549
	48026
	48049
NI	47148
	47175
	47291
	47465
	47639
	48073 and 48074
NY	45789
	45792 and 45793
	47067
	47094
	47113
	47315 and 47316
	47423 and 47424
	47487
	47490
	47520
	47531
	47638
	49126 and 49127

Operator	Factory Serial No.
OC	48027 and 48028
	48062 and 48063
	48066
	49112 and 49113
OD	45698 and 45699
	45730
	47010
	47015
	47060
	47152
OQ	45843
OS	47484
	47555
	47559
	47651 and 47652
	47726
	47735
	47756
	48015 thru 48021
	48059
OZ	45772 and 45773
	45798 and 45799
	47001
	47027 thru 47030
	47033
	47035
	47082
	47095 and 47096
	47107 thru 47109
	47134 thru 47137
	47172 thru 47174
	47248 thru 47251
	47324
	47343 thru 47345
	47357
	47409
	47411 and 47412
	47491
	47589
	47603
	47617 and 47618
	47669
	47734
	48123 and 48124

Operator	Factory Serial No.
PS	45846
	47020
	47023
	47068
	48034 thru 48043
	48052 and 48053
	48092 thru 48099
	49119
	49138 and 49139
	49142 and 49143
RC	45701
	45703 thru 45705
	45707 thru 45709
	45723
	45744 thru 45749
	45770
	45787
	45825
	45827 thru 45832
	47016 thru 47018
	47031
	47041 and 47042
	47049
	47063 and 47064
	47073
	47078
	47083
	47086
	47103
	47138 and 47139
	47144 and 47145
	47149 and 47150
	47153
	47155 and 47156
	47158
	47160
	47162 thru 47164
	47171
	47182 and 47183
	47185
	47204 thru 47206
	47240
	47244
	47246 and 47247
	47252 thru 47256
	47263 and 47264
	47280
	47337 and 47338

Operator	Factory Serial No.
RC (cont)	47346 and 47347
	47362
	47369 and 47370
	47376
	47382
	47389 thru 47391
	47404 thru 47406
	47415 thru 47417
	47439 and 47440
	47450
	47459
	47517
	47566
	47572 and 47573
	47647
	47664
	47708 thru 47710
	47716 thru 47718
	47724
	47729
	47739
	47757 and 47758
	47769
	47774 thru 47776
	47785 thru 47787
	48054 and 48055
	48086
	48088 thru 48091
	48100 thru 48102
	48107 thru 48110
	48121
	48148 and 48149
SI	48079 and 48080
	49110 and 49111
SK	47114 thru 47117
	47178 thru 47180
	47286 thru 47288
	47301 thru 47303
	47305 thru 47308
	47360 and 47361
	47395 and 47396
	47413 and 47414
	47464
	47492 thru 47494
	47497 thru 47499
	47509 thru 47513
	47596 and 47597

Operator	Factory Serial No.	Operator	Factory Serial No.
SK (cont)	47599	XZD	45826
	47610		47011
	47623 thru 47634		
	47646	YA	45732
	47725		
	47747 and 47748	YBB	47479
	47750		47711
	47754		49101
	47766		49277
	47777 thru 47779		
		YJP	47239
SR	45790		47392
	47282		47530
	47383 and 47384		47570
	47480		47697
	47523		48046
	47654 thru 47658		48048
	47661 thru 47663		48087
	47783 and 47784		
	48002 thru 48014	YLL	47672 and 47673
	49100		47680
TK	45774	YMP	48022
	47397		49144
	47442		
	47451	ZAF	47241 and 47242
	47488 and 47489		47295
	47534		47297 thru 47300
	47674		47366 and 47367
	47723		47448 and 47449
			47467
TN	47007		47471
	47009		47475
	47326		47495
	47418 and 47419		47536 thru 47538
	47528		47540 and 47541
	47550 thru 47552		47668
			47670 and 47671
TW	49153 and 49154		
	49156 and 49157	ZBM	47087
	49160		47154
	49165 and 49166		
	49169 and 49170	ZCA	47061
	49182 thru 49187		
		ZCP	47151
VA	49103 and 49104		
		ZDF	45721 and 45722
VE	45710		
	47104 and 47105	ZGM	45782

Operator	Factory Serial No.
ZGU	45740
ZIG	47595 47600
ZKA	47309
ZKD	45775
ZKG	47690 and 47691
ZNV	47003 and 47004 47065 47325 47410 47476 47577 and 47578 47580 and 47581 47584 thru 47587 47681 47684 47687 47698 thru 47700 48137 48165 and 48166
ZNX	45706
ZN3	47012 47014 47055
ZRS	45797
ZSP	47013
ZVB	47000
ZWH	45731 47466 47486 47516 47525 47529
ZYO	45702
2C	47070

(b) Other Aircraft:

Factory Serial No.

47501
47526
48000

NOTE: Aircraft listed under Other Aircraft are affected by this Service Bulletin but were not assigned to any specific operator at time of Service Bulletin issue.

This modification will be incorporated prior to delivery on all applicable DC-9, Series MD-80 aircraft, manufacturer's fuselage number 1135 and subsequent.

(2) Spares Affected:

None.

B. Reason:

Seven operators have reported overheating of the lavatory flush pump motor. The overheating may occur when the motor is exposed to either single-phase power or power with a locked rotor for an extended period of time. If not corrected, unscheduled maintenance of the lavatory flush pump motor may be required. Replacing the 5-amp circuit breakers in the flush pump circuit with a 1-amp circuit breaker incorporating a unique current-time characteristic will provide the maximum overheat protection without causing circuit breaker trips.

C. Description:

All Groups

This modification replaces the 5-amp lavatory system flush pump motor circuit breakers with 1-amp circuit breakers on the ground service bus circuit breaker panel, on the left console or electrical power center, as applicable.

D. Compliance:

Recommended. To be accomplished at operator's convenience.

E. Approval:

The resultant modification described in paragraph 1.C has been shown to comply with the applicable Federal Aviation Regulations and is FAA approved for the affected aircraft listed in paragraph 1.A.

F. Manpower:

This modification may be accomplished in the following approximate man-hours or elapsed hours per aircraft:

	Man-Hours		
	Group		
Work Phases	I	II	III
Gain Access	0.2	0.2	0.2
Modify (Aircraft)	1.0	1.5	1.7
Close Up	0.3	0.3	0.3
Total Man-Hours	1.5	2.0	2.2
Total Elapsed Hours	1.5	2.0	2.2

NOTE: Man-hour estimates are calculated based on the assumption that the aircraft/unit has been placed in a maintenance status. The man-hour/elapsed time estimates do not include:

1. Preparation for the modification: Examples; defueling, purging, placing work stands, opening standard access doors, obtaining tools, and jacking when not essential to the modification.

2. Nonproductive elapsed time: Examples; sealant or adhesive cure time, cleaning, paint drying time, lunch and/or rest periods, and quality assurance inspections.

3. Administrative functions: Examples; planning, engineering liaison, parts requisition, shift change coordination, and report writing.

Operators should take the above into consideration when scheduling this modification.

G. Material - Cost and Availability:

(1) Aircraft:

Parts required to accomplish this modification are listed in paragraph 3.A and are to be procured as indicated. Parts with unit net prices are proprietary parts and must be purchased as end item spares from the Douglas Aircraft Company under the spare parts article of the purchase agreement. Unit net prices are subject to change by current pricing policies. Douglas Aircraft Company proprietary parts will be available in approximately 150 days after receipt of purchase order. Availability of supplier parts is to be negotiated between operator and supplier.

The purchase order must specify this Service Bulletin number and only parts listed herein. Direct purchase order to:

Douglas Aircraft Company
P.O. Box 1771
Long Beach, California 90801
Attn: Parts Sales - Commercial 7-21
(DC-9 Service Bulletin 24-69)

(2) Spares:

Not applicable.

H. Tooling - Price and Availability:

None.

I. Weight and Balance:

None.

J. References:

(1) Douglas letter C1-75-41/TS/RWW (AOL 9-481), dated July 15, 1970, ATA File Code 9-38-30.

(2) Douglas letter C1-750-226/TS/DA (AOL 9-1486), dated November 18, 1983, ATA File Code 9-38-30-0.

(3) Douglas letter C1-750-254/TS/DA (AOL 9-1490), dated December 2, 1983, ATA File Code 9-24-0/9-38-30.

(4) Douglas letter C1-750-254/TS/DA (AOL 9-1490A), dated January 27, 1984, ATA File Code 9-24-0/9-38-30.

(5) Douglas letter C1-750-254/TS/DA (AOL 9-1490B), dated April 6, 1984, ATA File Code 9-24-0/9-38-30.

(6) Data used in preparation of this Service Bulletin:

Data Identification	Change	Type of Data
7930620	HU, Memo 52	Drawing
*38-31-00		Wiring Diagram

*Page number will vary with operators.

K. Publications Affected:

The modification outlined in this Service Bulletin affects the following DAC DC-9 aircraft publications:

Publication	Chapter and/or Section
Illustrated Parts Catalog	24-50
Wiring Diagram Equipment List Wiring Diagram Manual	38-31

2. Accomplishment Instructions:

WARNING: TO AVOID INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT, MAKE CERTAIN ADEQUATE PRECAUTIONS ARE TAKEN WHILE PERFORMING ANY WORK IF ELECTRICAL POWER IS APPLIED TO THE AIRCRAFT.

CAUTION: ELECTRICALLY GROUND THE AIRCRAFT.

All Groups

A. Replace lavatory flush system pump motor circuit breakers as follows:

Left Console - Figure 1
Electrical Power Center - Figure 2

B. Close applicable circuit breakers and energize aircraft buses.

C. Push toilet flush button in lavatory and check for proper operation of lavatory flush system.

D. Change existing wiring diagram to reflect this modification.

GROUP I

(1) REPLACE 7274-55-5 CIRCUIT BREAKERS (ITEMS B1-373, B1-374, AND B1-375) WITH S00475-1 CIRCUIT BREAKERS.

(2) INSTALL THREE S7918246-1 REPAIR NAMEPLATES.

GROUP II

(3) REPLACE 7274-55-5 CIRCUIT BREAKERS (ITEMS B1-373, B1-523, B1-374, B1-524, B1-375, AND B1-525) WITH S00475-1 CIRCUIT BREAKERS.

OR

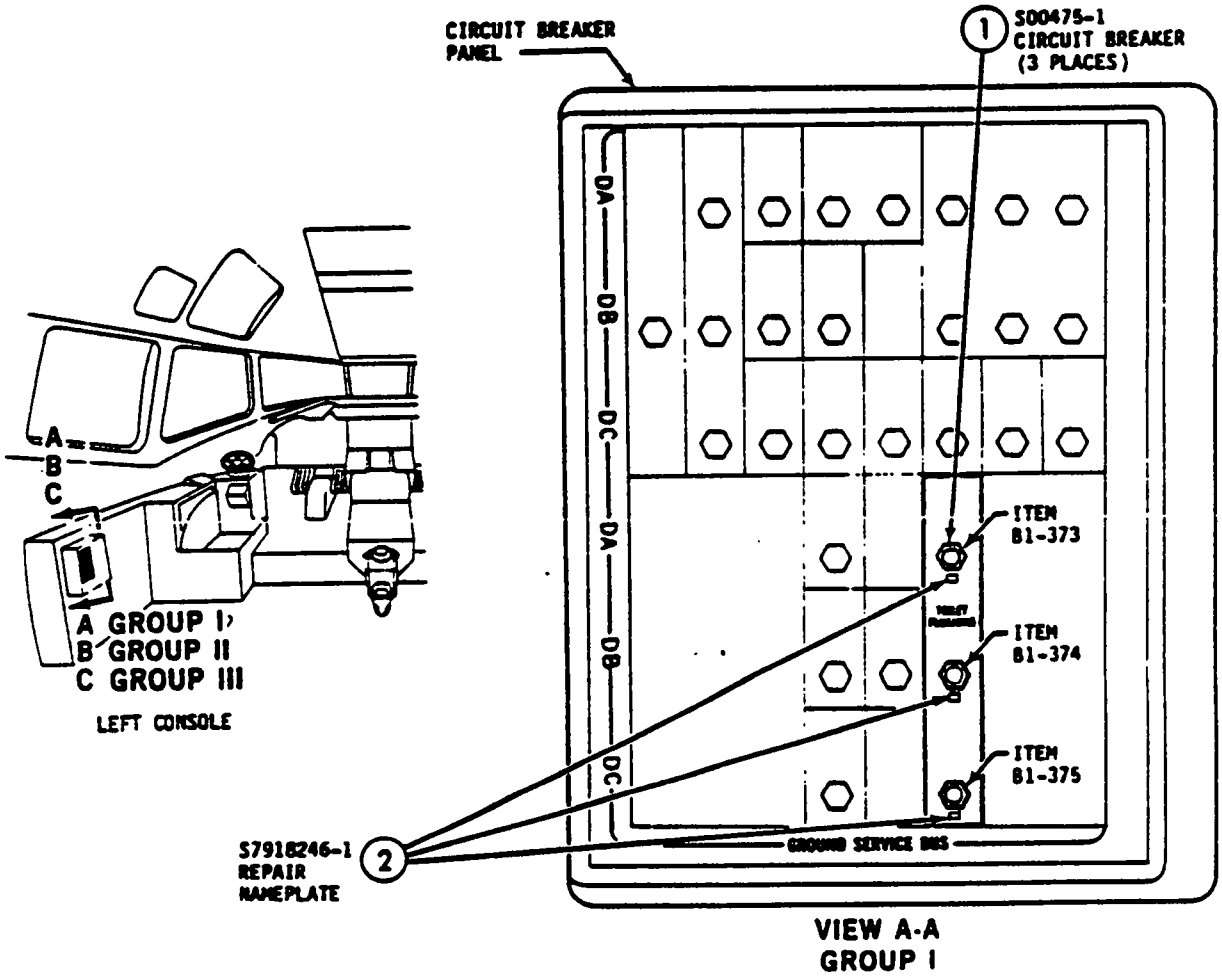
REPLACE 7274-55-5 CIRCUIT BREAKERS (ITEMS B1-373, B1-370, B1-374, B1-371, B1-375, AND B1-372) WITH S00475-1 CIRCUIT BREAKERS.

(4) INSTALL SIX S7918246-1 REPAIR NAMEPLATES.

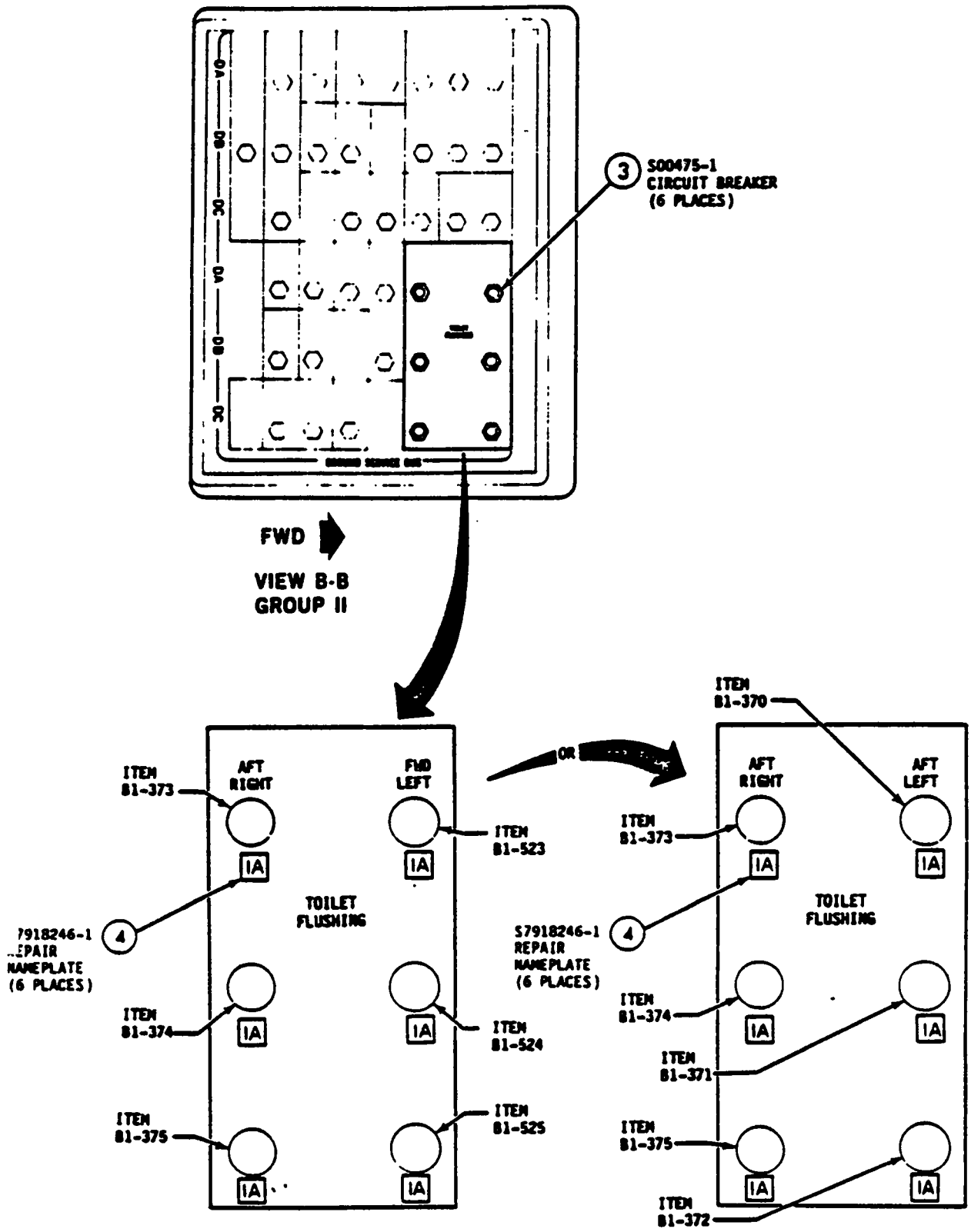
GROUP III

(5) REPLACE 7274-55-5 CIRCUIT BREAKERS (ITEMS B1-373, B1-370, B1-523, B1-374, B1-371, B1-524, B1-375, B1-372, AND B1-525) WITH S00475-1 CIRCUIT BREAKERS.

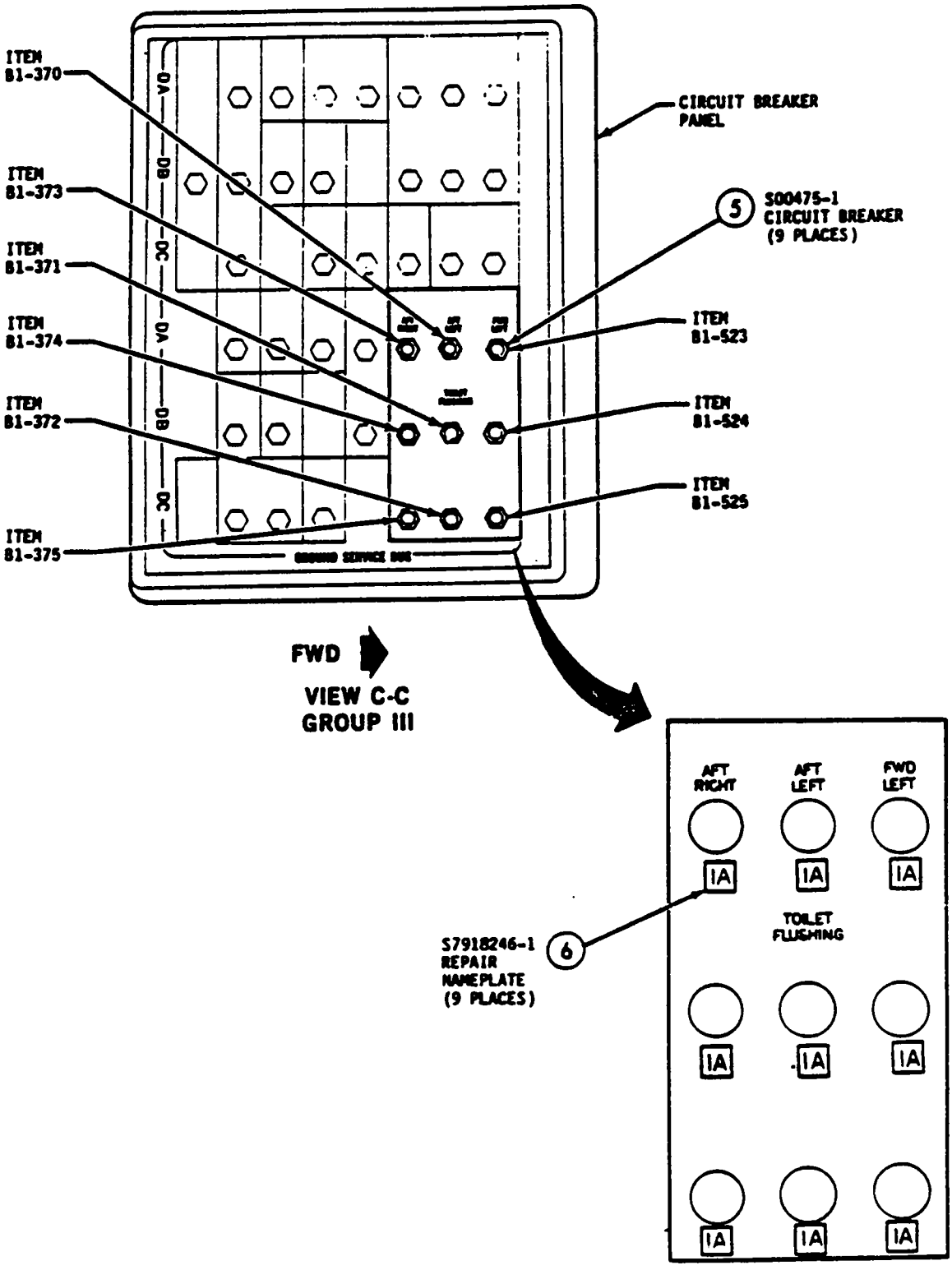
(6) INSTALL NINE S7918246-1 REPAIR NAMEPLATES.



LAVATORY FLUSH PUMP MOTOR CIRCUIT BREAKER - REPLACEMENT



LAVATORY FLUSH PUMP MOTOR CIRCUIT BREAKER - REPLACEMENT



LAVATORY FLUSH PUMP MOTOR CIRCUIT BREAKER - REPLACEMENT

GROUP I

(1) REPLACE 7274-55-5 CIRCUIT BREAKERS (ITEMS B1-373, B1-374, AND B1-375) WITH S00475-1 CIRCUIT BREAKERS.

(2) INSTALL THREE S7918246-1 REPAIR NAMEPLATES.

GROUP II

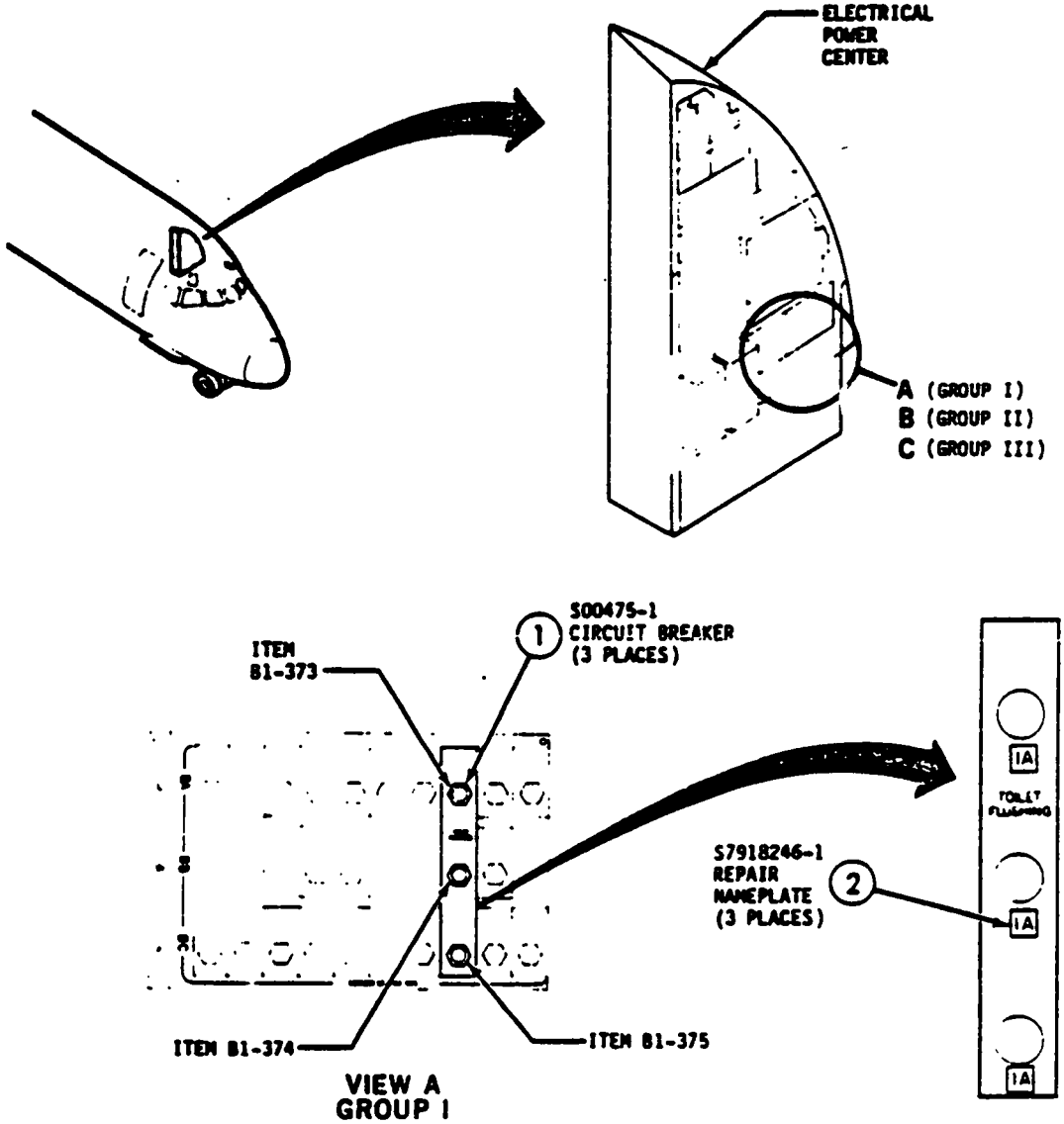
(3) REPLACE 7274-55-5 CIRCUIT BREAKERS (ITEMS B1-373, B1-370, B1-374, B1-371, B1-375, AND B1-372) WITH S00475-1 CIRCUIT BREAKERS.

(4) INSTALL SIX S7918246-1 REPAIR NAMEPLATES.

GROUP III

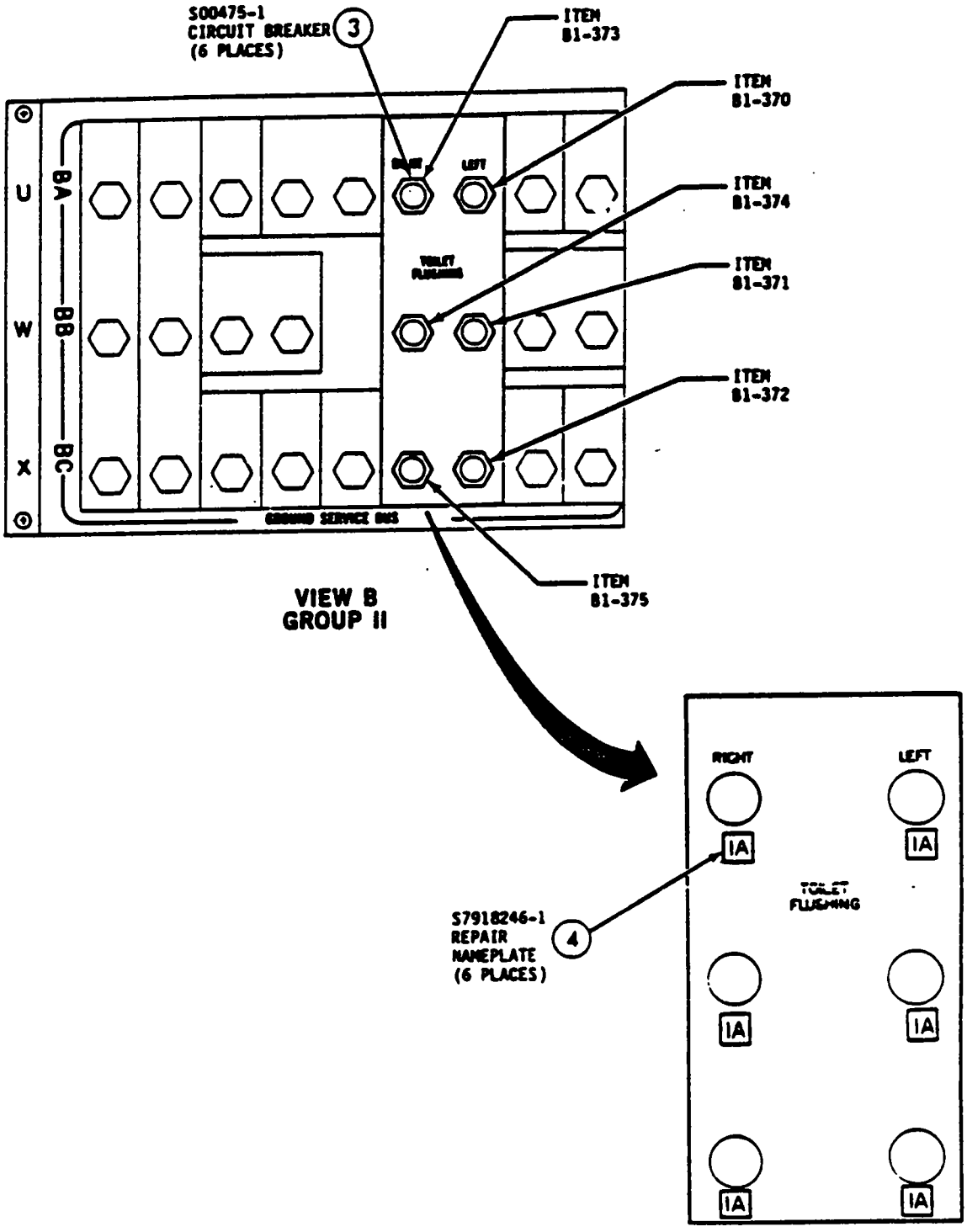
(5) REPLACE 7274-55-5 CIRCUIT BREAKERS (ITEMS B1-373, B1-370, B1-523, B1-374, B1-371, B1-524, B1-375, B1-372, AND B1-525) WITH S00475-1 CIRCUIT BREAKERS.

(6) INSTALL NINE S7918246-1 REPAIR NAMEPLATES.

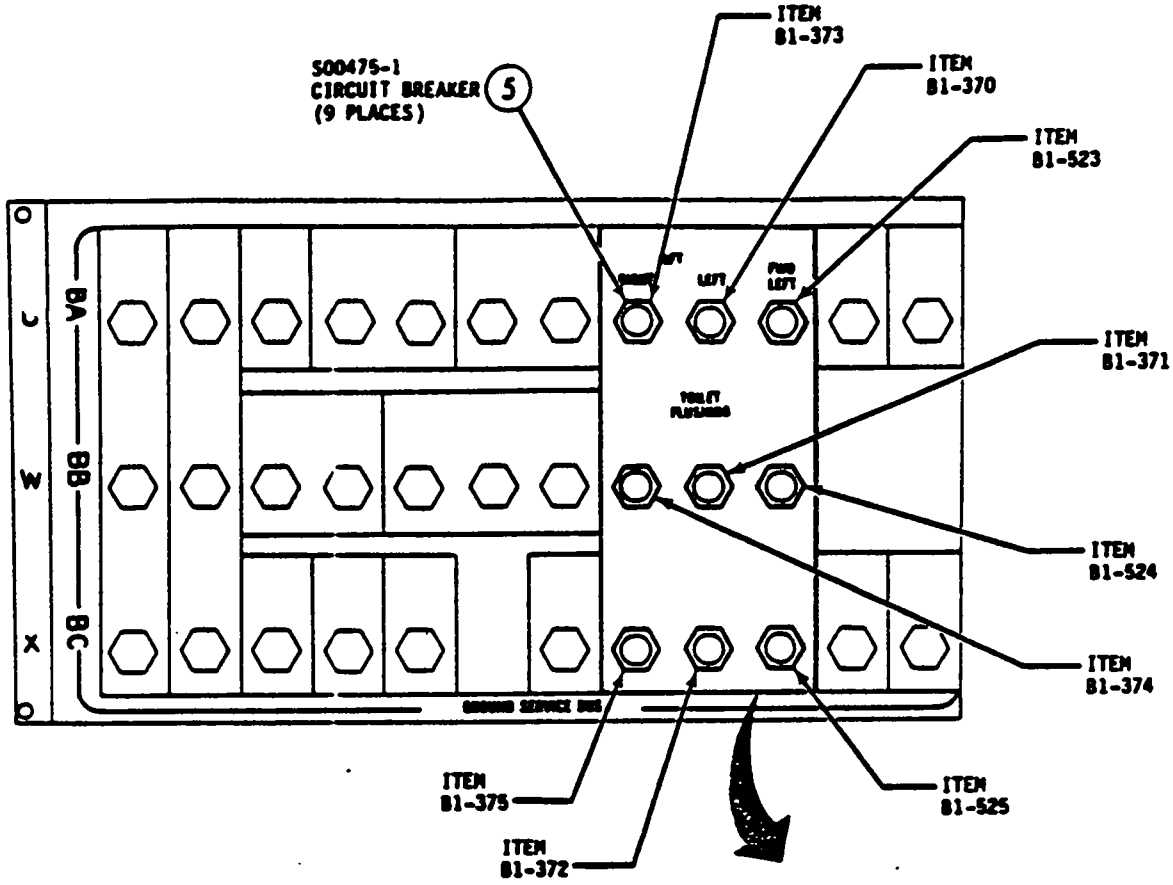


LAVATORY FLUSH PUMP MOTOR CIRCUIT BREAKER - REPLACEMENT

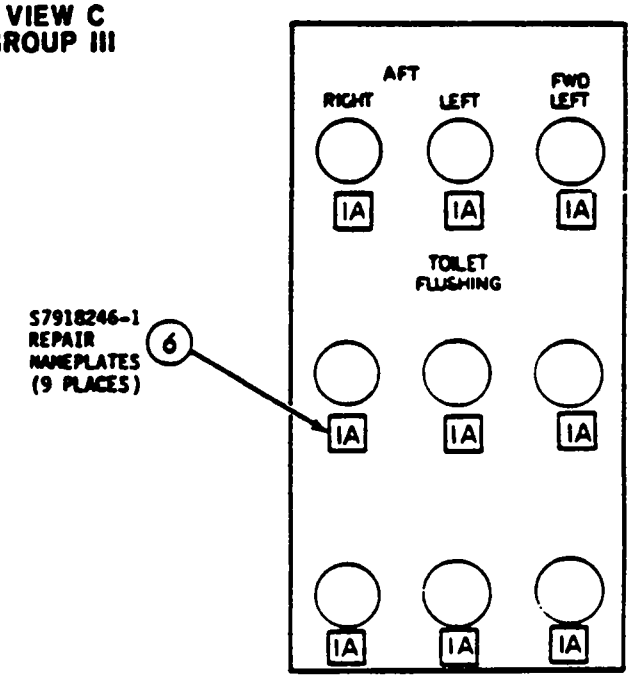
FIGURE 2 (SHEET 1 OF 3)



LAVATORY FLUSH PUMP MOTOR CIRCUIT BREAKER - REPLACEMENT



VIEW C
GROUP III



LAVATORY FLUSH PUMP MOTOR CIRCUIT BREAKER - REPLACEMENT

3. Material Information:

A. The basis for the following material data is per aircraft.

(1) Parts to be purchased as end item spares.

Part No.	Qty Per Group I	II	III	Unit Net Price	Key Word
S7918246-1	3	6	9	$17.10	Repair Nameplate

(2) Parts to be procured from operator's stock or supplier.

NOTE: FSCM indicates Federal Supply Code for Manufacturers.

New Part No.	Qty Per Group I	II	III	Key Word	Old Part No.	Instructions-Disposition	
S00475-1	3	6	9	Circuit Breaker	7274-55-5	1/	2/

1/ May be purchased from: Mechanical Products Incorporated FSCM 76374
Subsidiary of Amstar Technical Products Incorporated
1824 River Street
Jackson, Michigan 49204

2/ Return old parts to stock if serviceable.

B. The basis for the following material data is per spares.

None.

LL
JEM