**International Aero Engines****RR-DERBY**

400 MAIN STREET, MAIL STOP 121-10  
 EAST HARTFORD, CT 06108, USA.  
 TELEPHONE: 860 565 5515  
 FAX: 860 565 0600

P.O. BOX 31, DERBY  
 TELEGRAMS - 'ROYCAR' DERBY  
 TELEX - 37645  
 TELEPHONE - DERBY 242424

DATE **Jun.27/00**

Printed in Great Britain

**V2500-D5 SERIES PROPULSION SYSTEMS SERVICE BULLETIN**

This document transmits Revision 1 to Service Bulletin EV2500-79-0040

**Document History**

Service Bulletin Revision Status  
 Initial Issue                      Nov.7/97

Supplement Revision Status

**Bulletin Revision 1**

Remove  
 All pages of the  
 Service Bulletin

Incorporate  
 Pages 1 to 42 of the  
 Service Bulletin

Reason for change  
 To correct Part No. in  
 Section 2. Material  
 Information

**V2500-ENG-79-0040**

Transmittal - Page 1 of 2

CHECK THAT ALL PREVIOUS TRANSMITTALS HAVE BEEN INCORPORATED

If any have not been received please advise Publication Services, Rolls-Royce plc, Derby, England

© Rolls-Royce plc (date as above) Printed in Great Britain

# LIST OF EFFECTIVE PAGES

The effective pages to this Service Bulletin following incorporation of Revision 1 are as follows:

<u>Page</u>	<u>Revision Number</u>	<u>Revision Date</u>
Bulletin		
R 1	1	Jun.27/00
R 2	1	Jun.27/00
R 3	1	Jun.27/00
R 4	1	Jun.27/00
R 5	1	Jun.27/00
R 6	1	Jun.27/00
R 7	1	Jun.27/00
R 8	1	Jun.27/00
R 9	1	Jun.27/00
R 10	1	Jun.27/00
R 11	1	Jun.27/00
R 12	1	Jun.27/00
R 13	1	Jun.27/00
R 14	1	Jun.27/00
R 15	1	Jun.27/00
R 16	1	Jun.27/00
R 17	1	Jun.27/00
R 18	1	Jun.27/00
R 19	1	Jun.27/00
R 20	1	Jun.27/00
R 21	1	Jun.27/00
R 22	1	Jun.27/00
R 23	1	Jun.27/00
R 24	1	Jun.27/00
R 25	1	Jun.27/00
R 26	1	Jun.27/00
R 27	1	Jun.27/00
R 28	1	Jun.27/00
R 29	1	Jun.27/00
R 30	1	Jun.27/00
R 31	1	Jun.27/00
R 32	1	Jun.27/00
R 33	1	Jun.27/00
R 34	1	Jun.27/00
R 35	1	Jun.27/00
R 36	1	Jun.27/00
R 37	1	Jun.27/00
R 38	1	Jun.27/00
R 39	1	Jun.27/00
R 40	1	Jun.27/00
R 41	1	Jun.27/00
R 42	1	Jun.27/00

Printed in Great Britain



OIL - SCAVENGE OIL TUBES - ENGINE - INTRODUCTION OF REVISED SCAVENGE TUBES AND  
CLIPPING FOR THE NO.4 BEARING

1. Planning Information

A. Effectivity

- (1) Boeing Long Beach Division MD-90  
V2525-D5, V2528-D5 Engines prior to Serial No.V20007
- (2) ATA Location  
79-00-00

B. Concurrent Requirements

None.

C. Reason

(1) Condition

Oil leaks can occur from the No.4 bearing chamber at engine speeds below idle during start-up, shut-down and windmilling.

The problem is caused by poor scavenge of oil from the No.4 bearing chamber. When the engine is not level, oil collects in the bearing chamber and because the seals are not pressurized, the oil can flow past them.

(2) Background

The problem has been found on flight test engines.

(3) Objective

The purpose of this Service Bulletin is to maintain reliability.

(4) Substantiation

A satisfactory engineering analysis has been done on the changes in this Service Bulletin. Tests and a satisfactory trial installation, have also been done on flight-test certification engines.

(5) Effect of Bulletin on Workshop Procedures:

(a) Removal/Installation

Affected



(b) Disassembly/Assembly

Not affected

(c) Cleaning

Not affected

(d) Inspection/Check

Not affected

(e) Repair

Not affected

(f) Testing

Not affected

D. Supplemental Information

IAE V2500 Modification 93VN301 is incorporated within this Service Bulletin.

E. Description

(1) This Service Bulletin includes different tube assemblies for the No.4 bearing scavenge-line. To make the scavenge system better, the head of the scavenge line has decreased by approximately 225 mm (10in.)

(2) The changes introduced are:

(a) The tube assembly between the No.4 bearing and the scavenge-valve has changed. It replaces the tube assembly between the disconnect point and the scavenge-valve and the disconnect-point to disconnect-point tube assembly.

(b) The length of the No.4 bearing pressure-transducer tube has increased.

(c) To hold the tube assemblies and harnesses, a raceway assembly is added to replace the initial tube assemblies.

(d) Two brackets are added to hold the additional tube assemblies.

(e) So that it can hold additional tube assemblies, the clip bracket mounted on the fixing flange of the No.4 bearing scavenge-valve has changed.

(f) The following clip points are added:

CP2635, CP2636, CP2638, CP2639, CP2640, CP2641



(g) The following clip points have changed:

CP2111, CP2117, CP2118, CP2122, CP2124, CP2345, CP2557

(h) Clip point CP2115 is removed and discarded.

(i) Bonding point B115 has changed.

(j) Rohr clamps and hardware have been added to give sufficient clearance between the No.4 bearing scavenge-line and the VSCF harness.

F. Approval

The part number changes and/or part modifications are given in Section 2 and 3 of this Service Bulletin. They obey the applicable Federal Aviation Regulations and are FAA-APPROVED for the engine model listed.

G. Compliance

Category Code 7

This Service Bulletin can be done when there are no initial parts remaining.

H. Manpower

Estimated manhours to incorporate the full intent of this bulletin:

(1) In Service

Not applicable

(2) At Overhaul

No additional time is necessary to do this Service Bulletin

NOTE: The parts affected by this Service Bulletin are accessible at Overhaul.

I. Material – Price and Availability

(1) A Modification Kit is not necessary.

(2) Refer to 2. Material Information for prices and availability of future spares.

J. Tooling – Price and Availability

Special tools are not necessary.



K. Weight and Balance

(1) Weight change

None

(2) Moment arm

No effect

(3) Datum

Engine front mount centreline Power Plant Station (PPS) 100

L. Electrical Load Data

This Service Bulletin has no effect on the aircraft electrical load.

M. References

(1) Internal Reference No.

IAE Engineering Change Number 93VR077

N. Other Publications Affected

(1) Illustrated Parts Catalogue (IPC), Chapter/Section 24-21-46, 71-51-50, 71-51-51, 75-22-49, 79-22-49 and 79-23-51.

(2) V2500-D5 Component Maintenance Manual (CMM), Chapter/Section 79-22-49, Cleaning.

(3) MD-90 Aircraft Maintenance Manual (AMM), Chapter/Section 79-22-49, Inspection/Check and 79-22-51, Removal/Installation.



## 2. Material Information

### A. Kits associated with this Bulletin:

None.

### B. New production parts:

PART NO.	QTY	UNIT PRICE
AN906C10L	1	0.07
6A6033	1	997.00
AS20907	1	3.67
AS62416	1	26.50
4W0043	1	2.47
AS20907	1	3.67
AS62416	1	26.50
K8831	1	0.19
4W0001	1	2.67
AS20908	1	4.63
6A4608	1	33.00
AS21010	2	3.38
4W0002	2	8.88
6A4849	1	36.30
6A4835	1	37.20
6A4837	1	86.10
AS21011	2	3.38
AS20908	1	4.63
6A5874	1	99.70
AS20917	1	3.82
AS62405	1	21.50
UP10480	1	11.60
AS62405	1	21.50
4W0001	1	2.67
6A6032	1	636.00
AS20907	1	3.67
AS62404	1	21.50
6A6031	1	1613.00
6A5875	1	99.70
AS21013	2	3.38
AS20918	1	5.04
6A4836	1	39.90
AS21012	1	3.66
4W0002	2	8.88
6A5876	1	138.00

**NOTE:** The unit prices shown are an estimate and they are given for the purpose of planning only. For information about actual prices, refer to the IAE Price Catalogue or contact IAE's spare parts sales department.

C. Parts affected by this Bulletin:

Applicability: For each V2500 engine to incorporate this Bulletin:

24-21-46

FIG ITEM NO.	NEW PART NO.	QTY	PART TITLE	OLD PART NO.	INSTR DISP
01-145	MS21043-3	1	Nut, self locking (Rohr)	-	(A)(B)
01-146	AN906C10L	1	Washer, flat (Rohr)	-	(A)(B)
01-147	TA027029-02	1	Clamp (Rohr)	-	(A)(B)
01-148	NAS1802-3-8	1	Screw (Rohr)	-	(A)(B)
01-200	TA027029-08	1	Clamp (Rohr)	TA027029-10	(A)(S1)(1D)
01-213	TA027029-10	1	Clamp (Rohr)	-	(A)(B)
01-214	-	1	Clamp (Rohr)	TA027029-10	(2D)
02-153	-	2	Spacer (Rohr)	NAS1057T3-050	(C)(1D)
02-221	MS21043-3	1	Nut, self locking (Rohr)	-	(A)(B)
02-223	AN960C10L	1	Washer, flat (Rohr)	-	(A)(B)
02-225	TA027029-02	1	Clamp (Rohr)	-	(A)(B)
02-227	NAS1802-3-8	1	Screw (Rohr)	-	(A)(B)
02-293	TA027029-10	1	Clamp (Rohr)	-	(A)(B)
02-295	-	1	Clamp (Rohr)	TA027029-10	(3D)

71-51-50

FIG ITEM NO.	NEW PART NO.	QTY	PART TITLE	OLD PART NO.	INSTR DISP
06-100	6A6033	1	Tube - Assembly of - Raceway	-	(A)(B)
06-125	AS20907	1	Bolt, bihex hd (0.190in. x 0.438in.) (CP2117)	-	(5D)
06-128	AS62416	1	Clip (1.000in. dia) (CP2117)	-	(6D)
06-132	4W0043	1	Nut - Assembly of, self locking (0.190in. dia) (CP2117)	-	(7D)
06-133	AS20907	1	Bolt, bihex hd (0.190in. dia x 0.438in.) (CP2118)	-	(8D)
06-136	AS62416	1	Clip (1.000in. dia) (CP2118)	-	(9D)

Printed in Great Britain





FIG ITEM NO.	NEW PART NO.	QTY	PART TITLE	OLD PART NO.	INSTR DISP
06-140	4W0043	1	Nut - Assembly of, self locking (0.190in. dia) (CP2118)	-	(10D)
06-141	AS20907	1	Bolt, bihex hd (0.190in. dia x 0.438in.) (CP2122)	-	(11D)
06-144	AS62416	1	Clip (1.000in. dia) (CP2122)	-	(12D)
06-148	4W0043	1	Nut - Assembly of, self locking (0.190in. dia) (CP2122)	-	(13D)
06-149	AS20907	1	Bolt, bihex hd (0.190in. dia x 0.438in.) (CP2345)	-	(14D)
06-150	K8831	1	Washer (CP2345)	-	(A)(B)
06-152	AS62416	1	Clip (1.000in. dia) (CP2345)	-	(15D)
06-156	4W0001	1	Nut, self locking dbl hex (0.190in. dia) (CP2345)	-	(A)(B)
06-157	AS20908	1	Bolt, bihex hd (0.190in. dia x 0.500in.) (CP2124)	-	(16D)
06-160	AS62416	1	Clip (1.000in. dia) (CP2124)	-	(17D)
06-164	4W0043	1	Nut - Assembly of self locking (0.190in. dia) (CP2124)	-	(18D)
06-250	6A4608	1	Bracket - Clipping	-	(19D)
06-252	AS21010	2	Bolt, bihex hd (0.250in. dia x 0.625in.)	-	(20D)
06-254	4W0002	2	Nut, self locking dbl hex (0.250in. dia)	-	(21D)
06-260	6A4849	1	Bracket	-	(22D)
06-262	AS21010	2	Bolt, bihex hd (0.250in. dia x 0.625in.)	-	(23D)
06-264	4W0002	2	Nut, self locking dbl hex (0.250in. dia)	-	(24D)
06-270	6A4835	1	Bracket	-	(25D)
06-272	AS21010	2	Bolt, bihex hd (0.250in. dia x 0.625in.)	-	(26D)
06-274	4W0002	2	Nut, self locking dbl hex (0.250in. dia)	-	(27D)
06-280	6A4837	1	Bracket	-	(28D)
06-282	AS21011	2	Bolt, bihex hd (0.250in. dia x 0.688in.)	-	(29D)
06-284	4W0002	2	Nut, self locking dbl hex (0.250in. dia)	-	(30D)

71-51-51

FIG ITEM NO.	NEW PART NO.	QTY	PART TITLE	OLD PART NO.	INSTR DISP
01-957	AS20908	1	Bolt, bihex hd (0.190in. dia x 0.500in.) (CP2557)	-	(A)(B)



FIG ITEM NO.	NEW PART NO.	QTY	PART TITLE	OLD PART NO.	INSTR DISP
01-964	4W0043	1	Nut - Assembly of self locking (0.190in. dia) (CP2557)	-	(A)(B)
05-307	-	1	Washer (B115)	4W2622	(1D)(4D)
05-320	6A5874	1	Bracket	-	(A)(B)

## 75-22-49

FIG ITEM NO.	NEW PART NO.	QTY	PART TITLE	OLD PART NO.	INSTR DISP
07-125	-	1	Bolt, bihex hd (0.190in. dia x 0.812in.) (CP2115)	AS20913	(C)(1D)
07-128	-	1	Clip (0.312in. dia) (CP2115)	AS62405	(C)(1D)
07-130	-	1	Spacer (10 mm) (CP2115)	UP10479	(C)(1D)
07-132	-	1	Nut - Assembly of self locking (0.190in. dia) (CP2115)	4W0043	(C)(1D)
07-165	AS20917	1	Bolt, bihex hd (0.190in. dia x 1.062in.) (CP2635)	-	(A)(B)
07-168	AS62405	1	Clip (0.312in. dia) (CP2635)	-	(A)(B)
07-170	UP10480	1	Spacer (15 mm) (CP2635)	-	(A)(B)
07-172	4W0043	1	Nut - Assembly of self locking (0.190in. dia)	-	(A)(B)
07-565	AS20908	1	Bolt, bihex hd (0.190in. dia x 0.500in.) (CP2649)	-	(A)(B)
07-568	AS62405	1	Clip (0.312in. dia) (CP2640)	-	(A)(B)
07-572	4W0001	1	Nut, self locking dbl hex (0.190in. dia) (CP2640)	-	(A)(B)

## 79-22-49

FIG ITEM NO.	NEW PART NO.	QTY	PART TITLE	OLD PART NO.	INSTR DISP
04-300	-	1	Tube - Assembly of - Oil - Disconnect to scavenge valve	6A5229	(C)(E)
04-500	-	1	Tube - Assembly of - Oil Disconnect to disconnect - Scavenge	6A5295	(C)(E)
04-536	-	1	Clip (1.000in. dia) (CP2111)	AS62416	(C)(1D)
04-548	-	1	Nut - Assembly of self locking (0.190in. dia) (CP2345)	4W0043	(C)(1D)
04-557	-	1	Bolt, machine double hex (0.190in. dia x 0.500in.) (CP2557)	4W0103	(C)(1D)
04-560	-	1	Clip (1.000in. dia) (CP2557)	AS62416	(C)(1D)



FIG ITEM NO.	NEW PART NO.	QTY	PART TITLE	OLD PART NO.	INSTR DISP
04-564	-	1	Nut, self locking dbl hex (0.190in. dia) (CP2557)	4W0001	(C)(1D)
05-100	6A6032	1	Tube - Assembly of - Oil - Tee to No.4 bearing pressure switch	6A5080	(A)(E)(S2)
05-141	AS20907	1	Bolt, bihex hd (0.190in. dia x 0.438in.) (CP2641)	-	(A)(B)
05-144	AS62404	1	Clip (0.250in. dia) (CP2641)	-	(A)(B)
05-148	4W0043	1	Nut - Assembly of self (0.190in. dia) (CP2641)	-	(A)(B)
06-100	6A6031	1	Tube - Assembly of - No.4 bearing to bearing scavenge valve	-	(A)(B)
06-125	AS20908	1	Bolt, bihex hd (0.190in. dia x 0.500in.) (CP2646)	-	(A)(B)
06-128	AS62416	1	Clip (1.000in. dia) (CP2636)	-	(A)(B)
06-132	4W0043	1	Nut - Assembly of self locking (0.190in. dia) (CP2636)	-	(A)(B)
06-133	AS20908	1	Bolt, bihex hd (0.190in. dia x 0.500in.) (CP2638)	-	(A)(B)
06-136	AS62416	1	Clip (1.000in. dia) (CP2638)	-	(A)(B)
06-140	4W0043	1	Nut - Assembly of self locking (0.190in. dia) (CP2638)	-	(A)(B)
06-141	AS20908	1	Bolt, bihex hd (0.190in. dia x 0.500in.) (CP2639)	-	(A)(B)
06-144	AS62416	1	Clip (1.000in. dia) (CP2639)	-	(A)(B)
06-148	4W0043	1	Nut - Assembly of self locking (0.190in. dia) (CP2639)	-	(A)(B)
06-250	6A5875	1	Bracket	-	(A)(B)
06-252	AS21013	2	Bolt, bihex hd (0.250in. dia x 0.812in.)	-	(A)(B)
10-541	AS20918	1	Bolt, bihex hd (0.190in. dia x 1.125in.) (CP2111)	-	(31D)
10-546	UP10480	1	Spacer (15 mm) (CP2111)	-	(32D)
10-548	4W0001	1	Nut, self locking dbl hex (0.190in. dia) (CP2111)	-	(33D)
10-660	6A4836	1	Bracket	-	(34D)
10-662	AS21010	1	Bolt, bihex hd (0.250in. dia x 0.625)	-	(35D)
10-663	AS21012	1	Bolt, bihex hd (0.250in. dia x 0.750in.)	-	(36D)
10-664	4W0002	2	Nut, self locking dbl hex (0.250in. dia)	-	(37D)



79-23-51

FIG ITEM NO.	NEW PART NO.	QTY	PART TITLE	OLD PART NO.	INSTR DISP
01-125	6A5876	1	Bracket	6A4807	(A)(E)(S2)

**D. Instruction Disposition Codes**

- (A) New part is currently available
- (B) Additional
- (C) Redundant part
- (E) Old part will be discontinued
- (S1) New part may be used in place of old part but not the other way around
- (S2) Old and new parts are not interchangeable
- (1D) Old part may be used up on other applications
- (2D) Quantity decreased from 3 to 2
- (3D) Quantity decreased from 4 to 3
- (4D) Quantity decreased from 2 to 1
- (5D) Transferred from ATA 79-22-49 Fig Item 04-333
- (6D) Transferred from ATA 79-22-49 Fig Item 04-336
- (7D) Transferred from ATA 79-22-49 Fig Item 04-340
- (8D) Transferred from ATA 79-22-49 Fig Item 04-341
- (9D) Transferred from ATA 79-22-49 Fig Item 04-344
- (10D) Transferred from ATA 79-22-49 Fig Item 04-348
- (11D) Transferred from ATA 79-22-49 Fig Item 04-525
- (12D) Transferred from ATA 79-22-49 Fig Item 04-528
- (13D) Transferred from ATA 79-22-49 Fig Item 04-532
- (14D) Transferred from ATA 79-22-49 Fig Item 04-541
- (15D) Transferred from ATA 79-22-49 Fig Item 04-544

Printed in Great Britain



- (16D) Transferred from ATA 79-22-49 Fig Item 04-549
- (17D) Transferred from ATA 79-22-49 Fig Item 04-552
- (18D) Transferred from ATA 79-22-49 Fig Item 04-556
- (19D) Transferred from ATA 79-22-49 Fig Item 04-370
- (20D) Transferred from ATA 79-22-49 Fig Item 04-372
- (21D) Transferred from ATA 79-22-49 Fig Item 04-374
- (22D) Transferred from ATA 79-22-49 Fig Item 04-375
- (23D) Transferred from ATA 79-22-49 Fig Item 04-377
- (24D) Transferred from ATA 79-22-49 Fig Item 04-379
- (25D) Transferred from ATA 79-22-49 Fig Item 04-575
- (26D) Transferred from ATA 79-22-49 Fig Item 04-577
- (27D) Transferred from ATA 79-22-49 Fig Item 04-579
- (28D) Transferred from ATA 79-22-49 Fig Item 04-580
- (29D) Transferred from ATA 79-22-49 Fig Item 04-582
- (30D) Transferred from ATA 79-22-49 Fig Item 04-584
- (31D) Transferred from ATA 79-22-49 Fig Item 04-533
- (32D) Transferred from ATA 79-22-49 Fig Item 04-538
- (33D) Transferred from ATA 79-22-49 Fig Item 04-540
- (34D) Transferred from ATA 79-22-49 Fig Item 04-570
- (35D) Transferred from ATA 79-22-49 Fig Item 04-572
- (36D) Transferred from ATA 79-22-49 Fig Item 04-573
- (37D) Transferred from ATA 79-22-49 Fig Item 04-574



### 3. Accomplishment Instructions

#### A. Rework Instructions

None.

#### B. Assembly Instructions

PROCEDURE	RELATED DATA
(1) Remove and discard clip point CP2115	Refer to Figure 1 and Figure 8
(2) Remove and discard tube assemblies 6A5080, 6A5229 and 6A5295	Refer to Figure 1, Figure 7, Figure 9 to Figure 17, Figure 20 and Figure 21
(3) Replace tube assemblies 6A5229 and 6A5295 with raceway 6A6033	Refer to Figure 2

PROCEDURE	RELATED DATA
(a) Attach raceway to clip points CP2116, CP2119, CP2120, CP2121, CP2123 and CP2346	Refer to Figure 9, Figure 12, Figure 13, Figure 14, Figure 16 and Figure 21
(b) Attach raceway to changed clip points CP2111, CP2117, CP2118, CP2122, CP2124, CP2345 and CP2557	Refer to Figure 2, Figure 7, Figure 9 to Figure 17, Figure 20 and Figure 24
(c) Attach raceway to additional clip point CP2641	Refer to Figure 29

PROCEDURE	RELATED DATA
(4) Replace bracket 6A4807 with bracket 6A5876	Refer to Figure 5

PROCEDURE	RELATED DATA
(a) Attach clip point CP2349 to bracket 6A5876	Refer to Figure 2 and Figure 23
(b) Attach tube 6A5108 to additional clip point CP2640. Then attach CP2640 to bracket 6A5876	Refer to Figure 2 and Figure 28



PROCEDURE

RELATED DATA

- (5) Install tube assembly 6A6031 to additional clip points CP2635, CP2636, CP2638 and CP2639

Refer to Figure 25 thru to Figure 28

PROCEDURE

RELATED DATA

- (a) Attach CP2636 to additional bracket 6A6874

Refer to Figure 2 and Figure 26

- (b) Attach bracket 6A5875 to gearbox

Refer to Figure 4

- (c) Attach clip point CP2638 to tube 6A6031 and then attach CP2638 to bracket 6A5875

- (6) Install tube assembly 6A6032 between No.4 Bearing and Tee-piece of tube 6A6031

PROCEDURE

RELATED DATA

- (a) Attach tube to clip points CP2130, CP2131 and CP2347

Refer to Figure 2, Figure 18, Figure 19 and Figure 22

- (b) Attach tube to additional clip point CP2641

Refer to Figure 2 and Figure 29

C. Recording Instructions

- (1) A record of accomplishment is necessary.



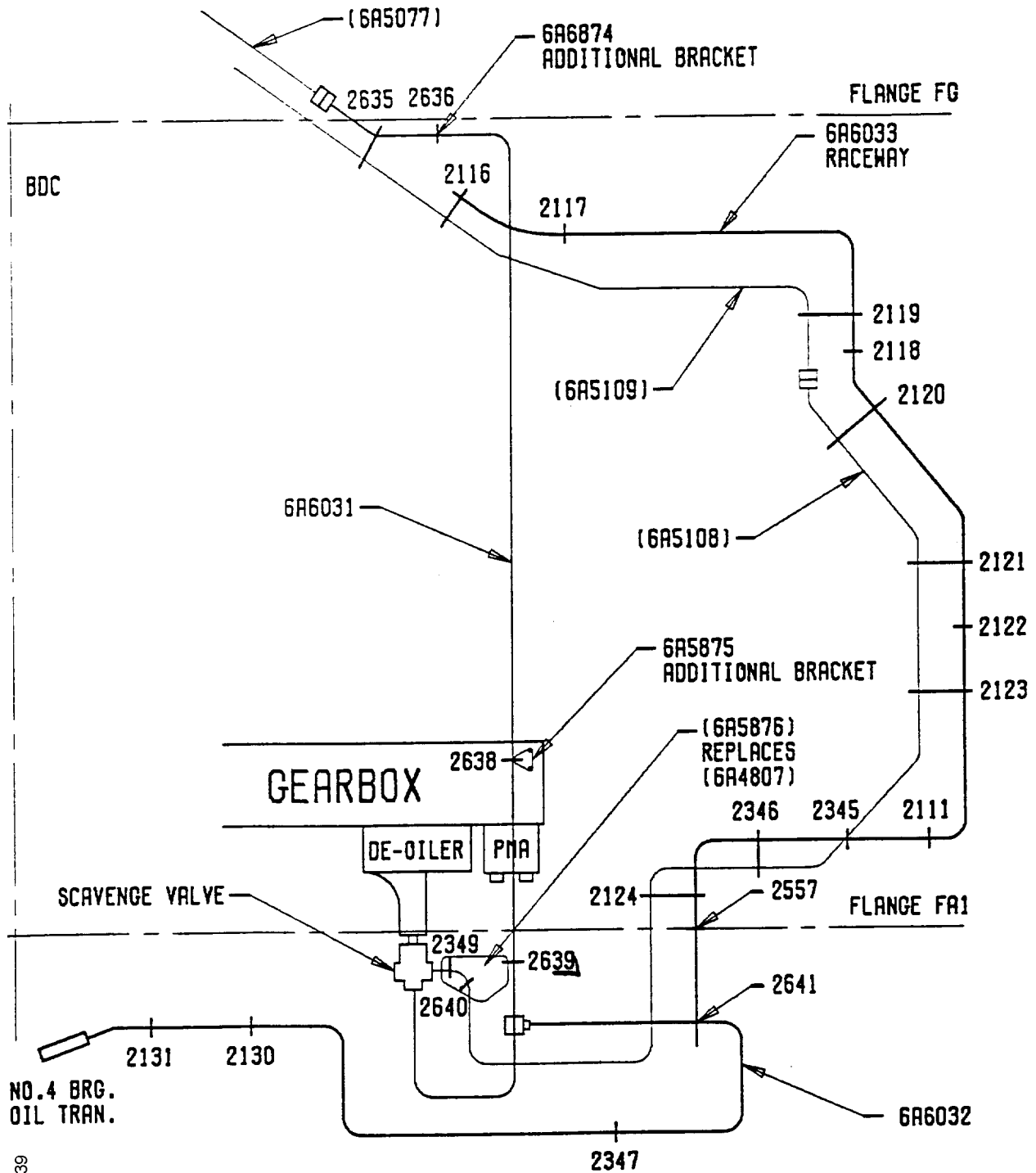
Before alteration  
Figure 1

Page 14



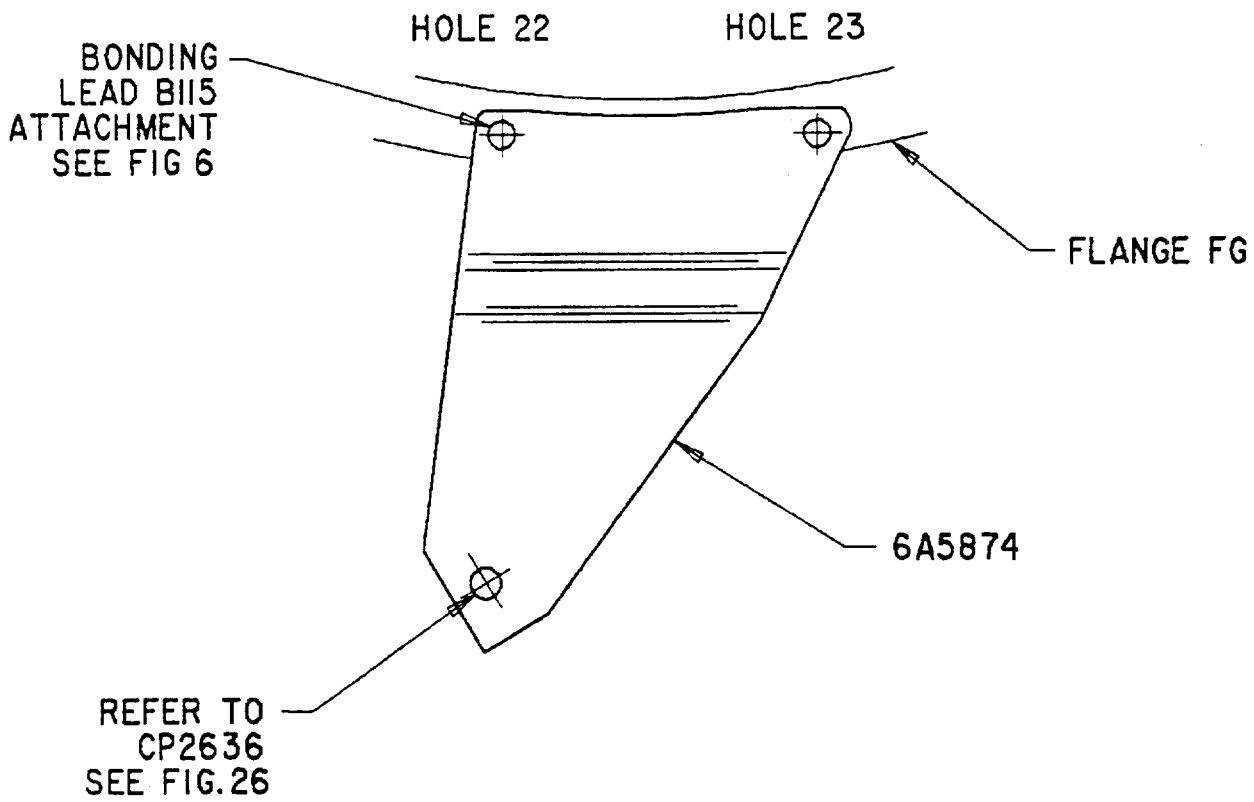


Printed in Great Britain



ded0002239

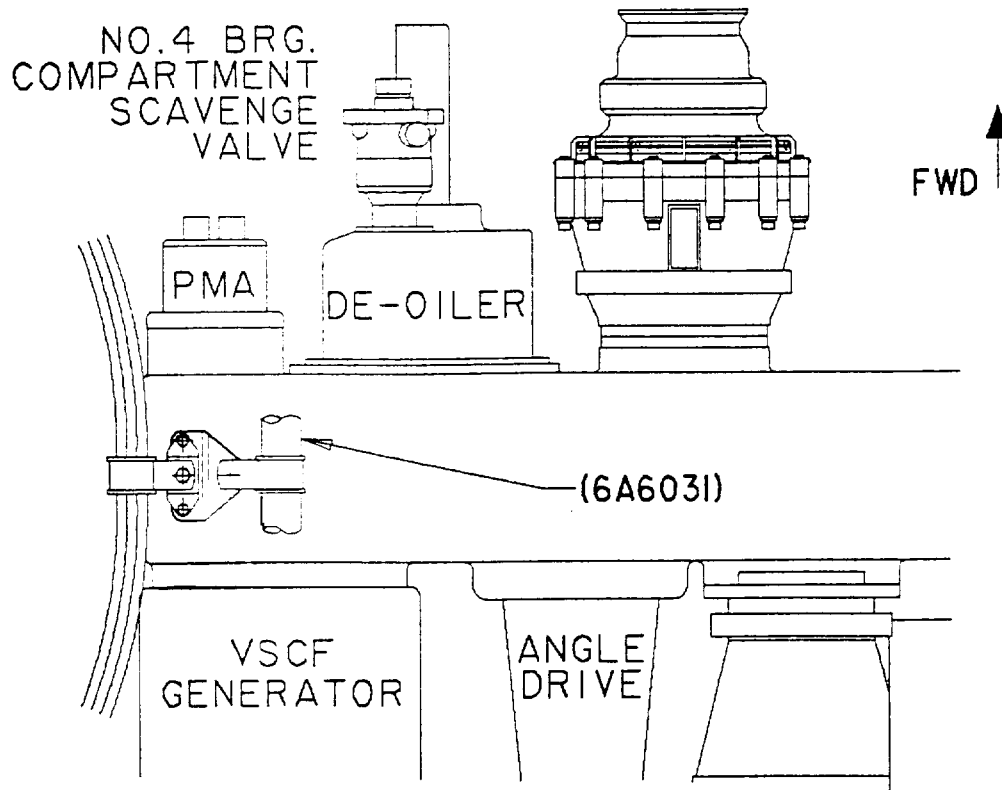
After alteration  
Figure 2



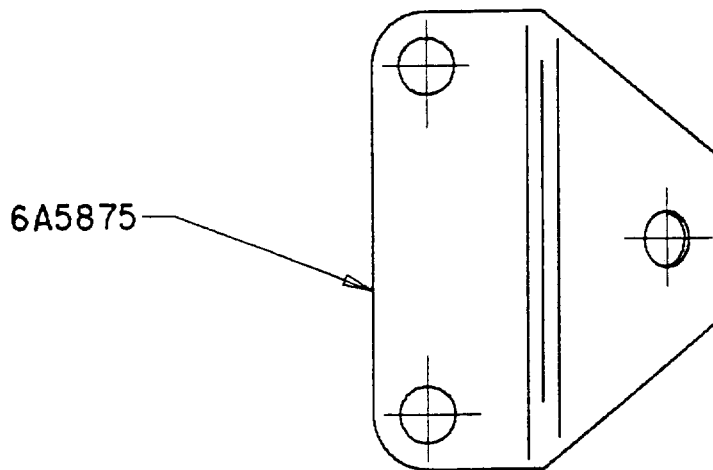
VIEW LOOKING REARWARD

Additional bracket - Refer to CP2636 Figure 26  
Figure 3

ded0002240

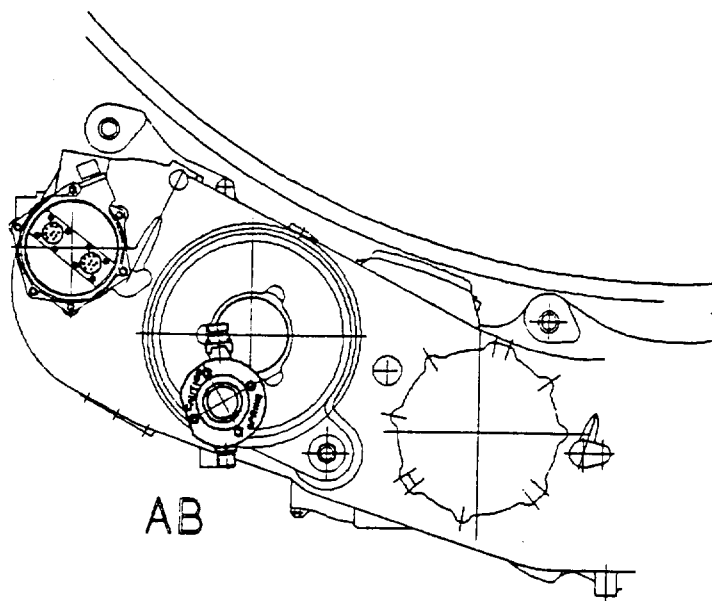


VIEW LOOKING ON BOTTOM OF GEARBOX  
LOCATING BRACKET 6A5875

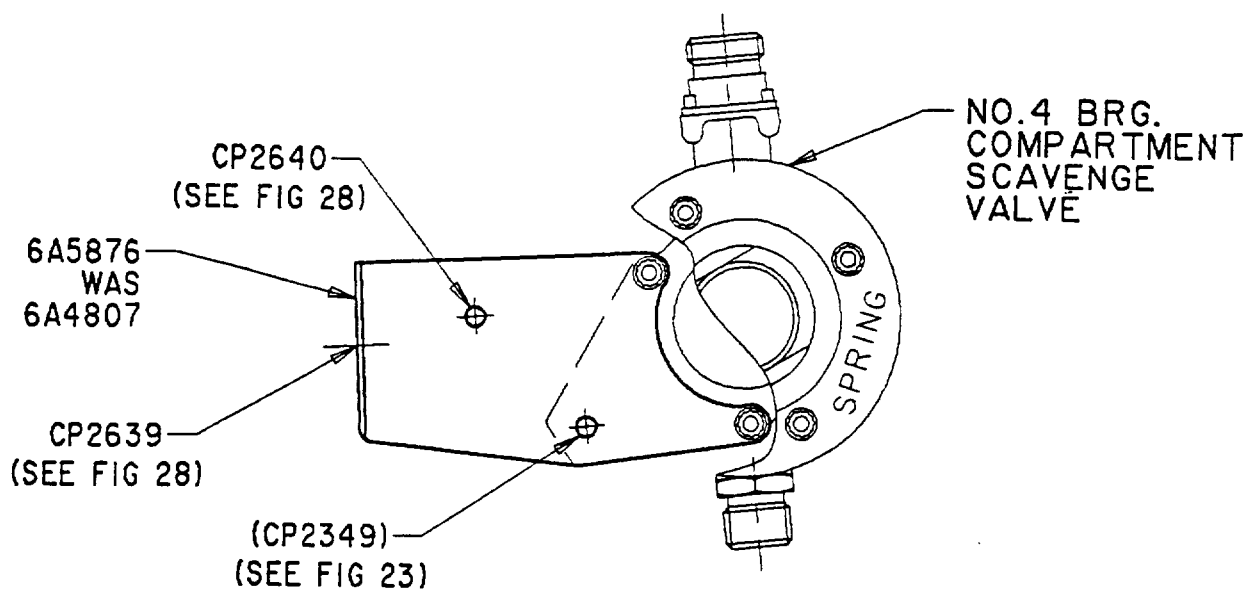


Additional bracket - Refer to CP2638 Figure 27  
Figure 4

ded0002241



VIEW LOOKING REARWARD ON GEARBOX

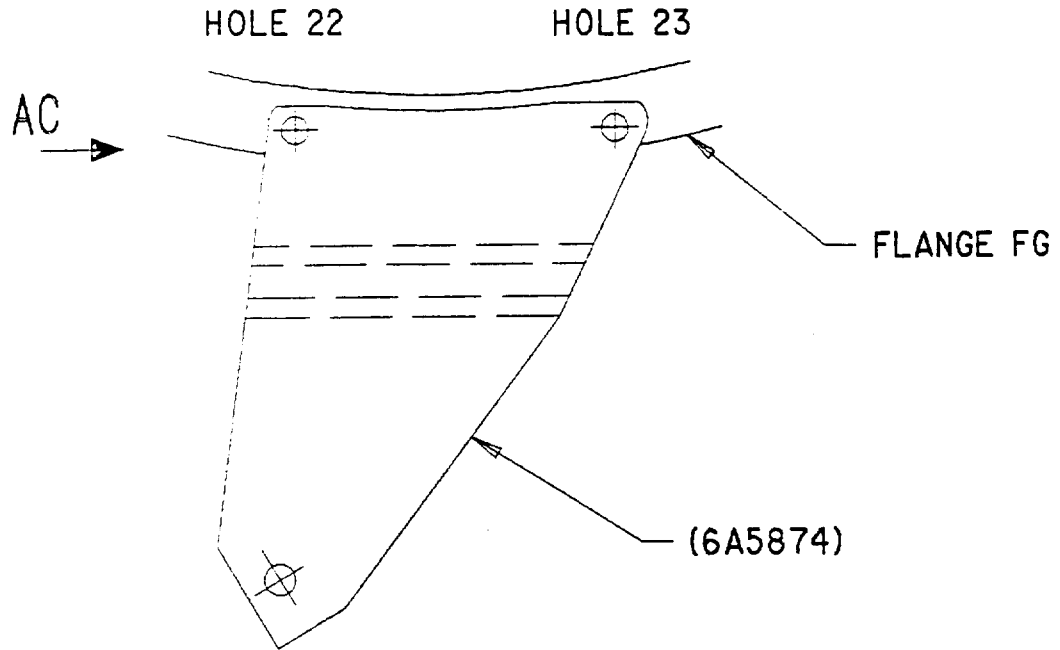


OLD BRACKET SHOWN DASHED

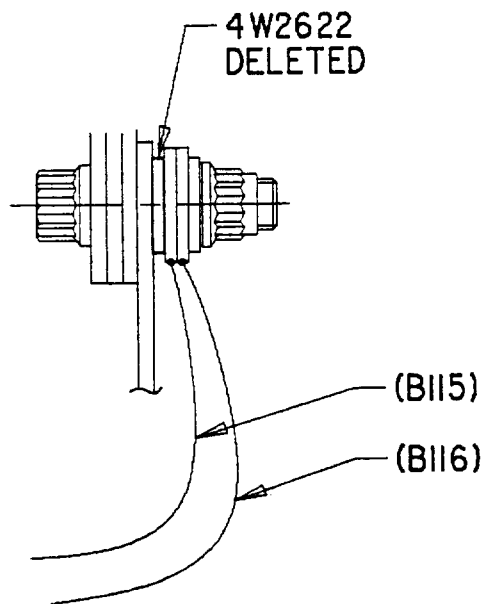
ENLARGED VIEW AT AB

Before and after alteration  
Figure 5

ded0002242

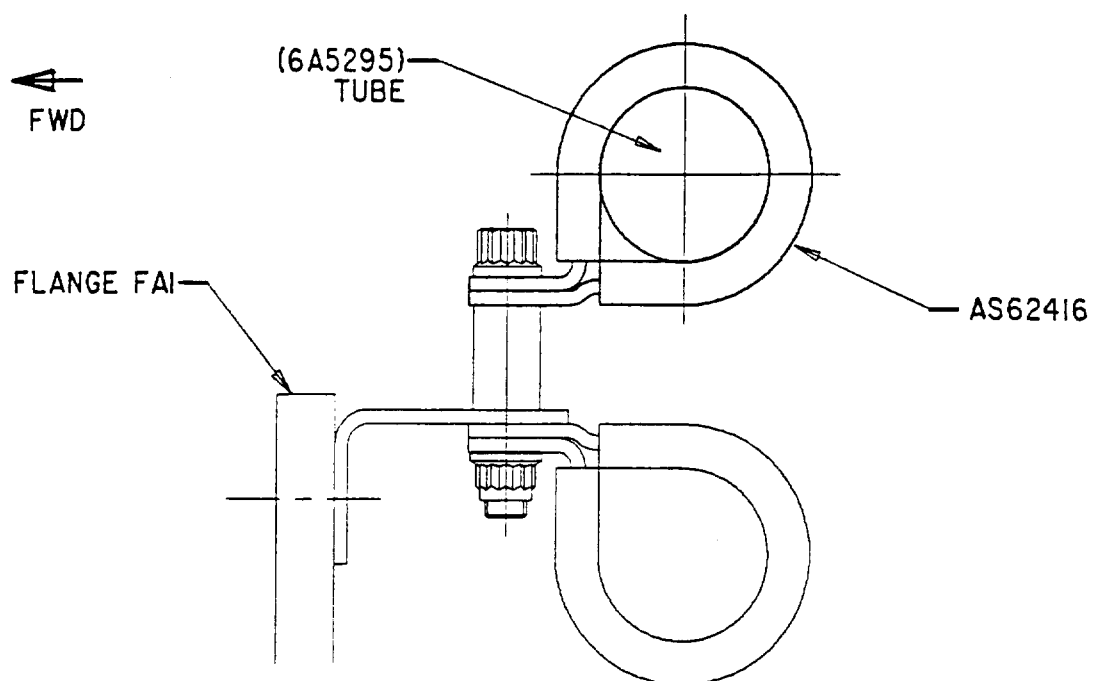


VIEW LOOKING REARWARD

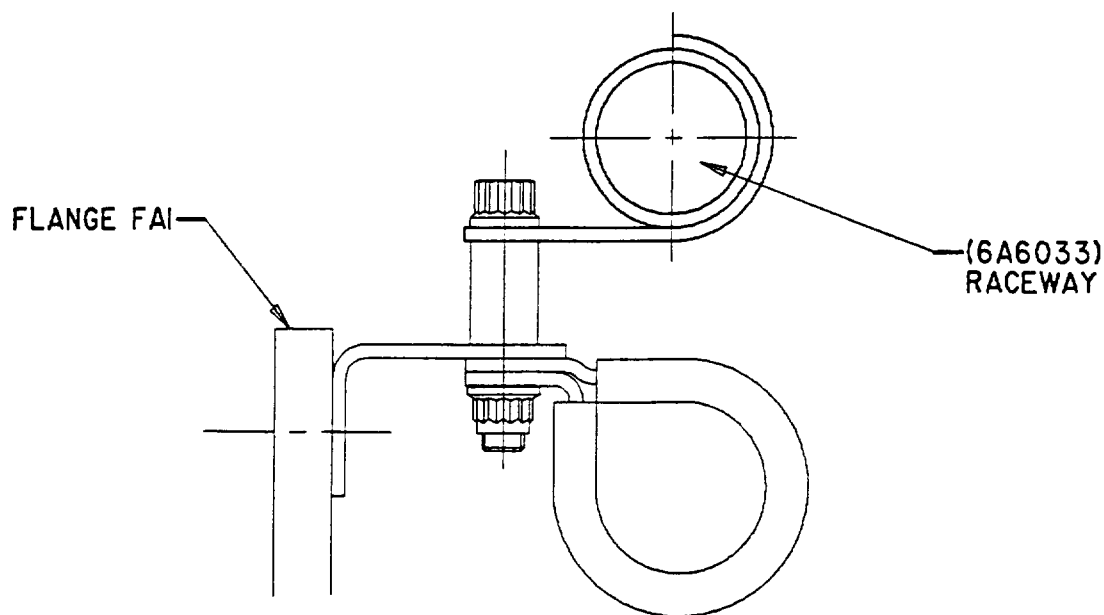


VIEW ON ARROW AC

Bonding lead attachment  
Figure 6

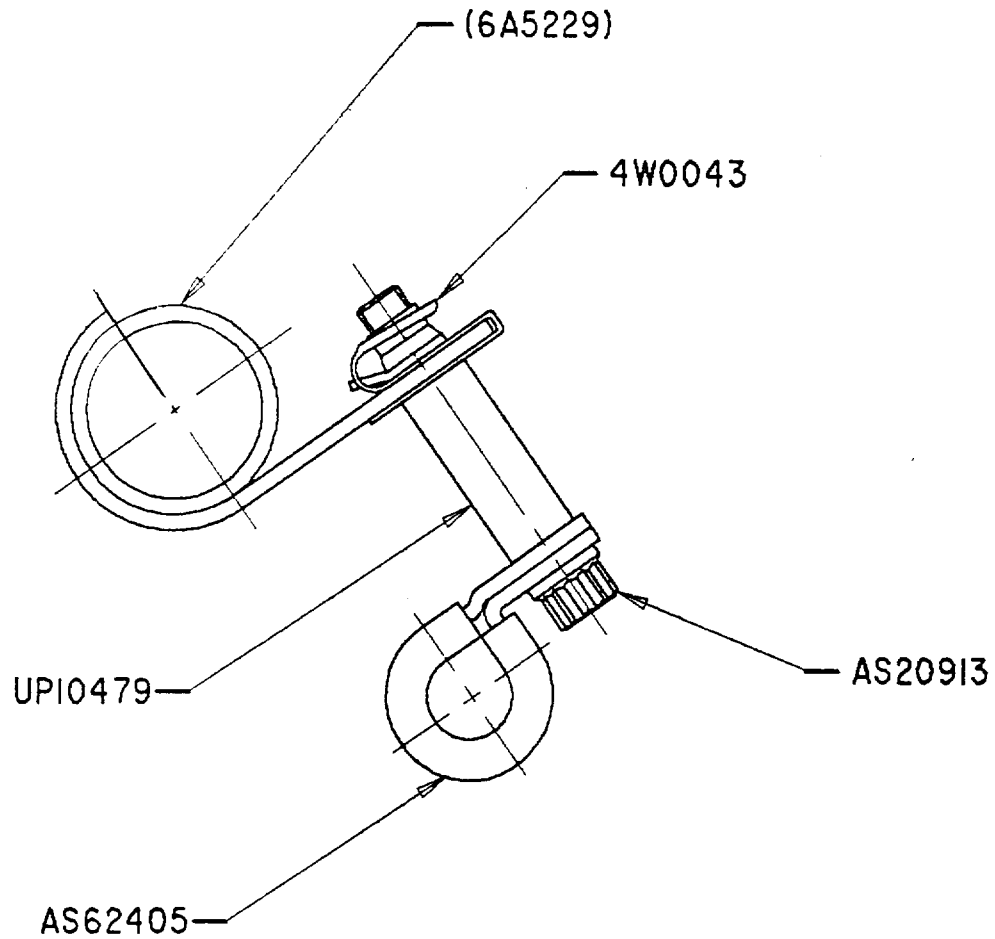


CLIPPING POINT 2III  
BEFORE ALTERATION



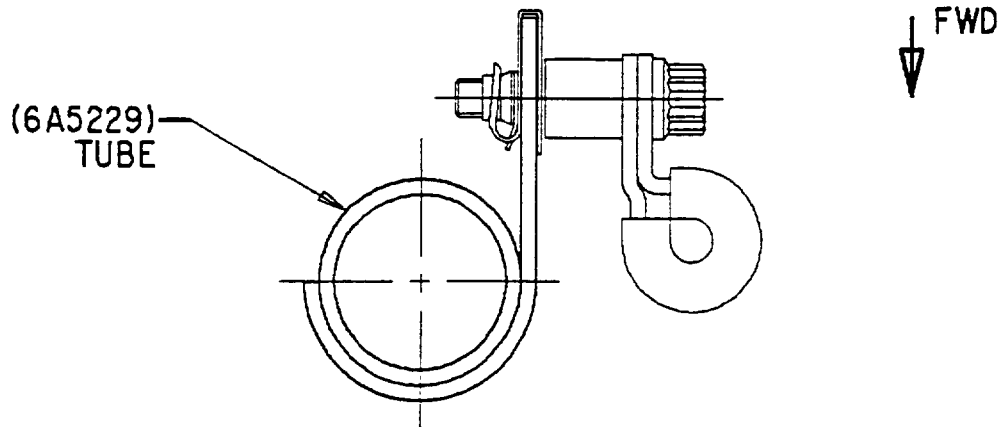
CLIPPING POINT 2III  
AFTER ALTERATION

Clipping Point CP2111 – Before and after alteration  
Figure 7

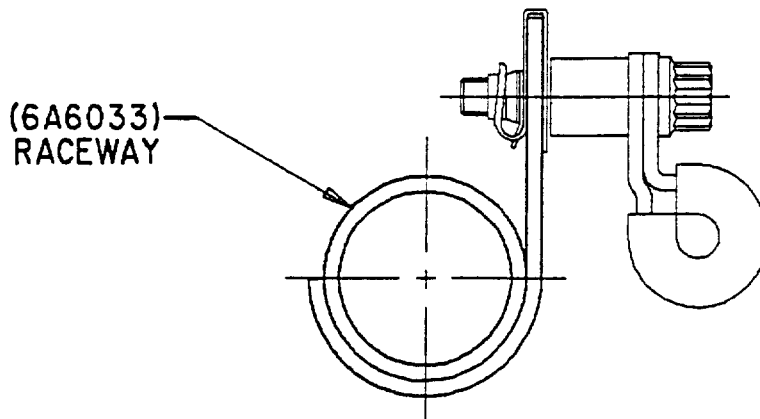


ded0002245

Clipping Point 2115 - Deleted  
Figure 8



CLIPPING POINT 2116  
BEFORE ALTERATION

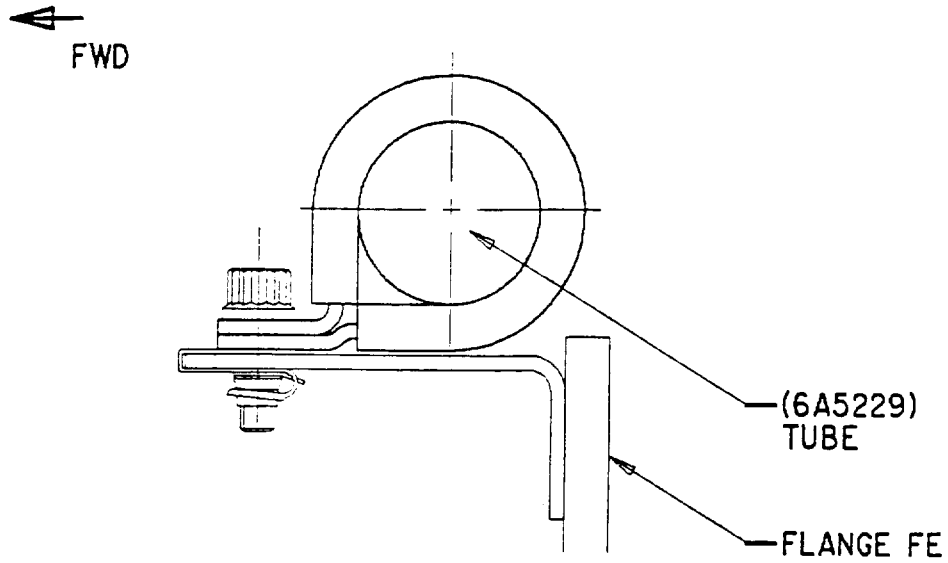


CLIPPING POINT 2116  
AFTER ALTERATION

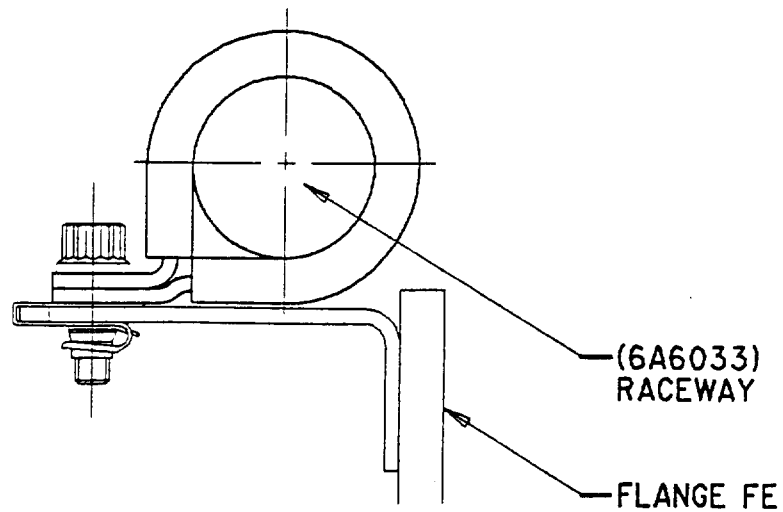
Clipping Point 2116 – Before and after alteration  
Figure 9

ded0002246





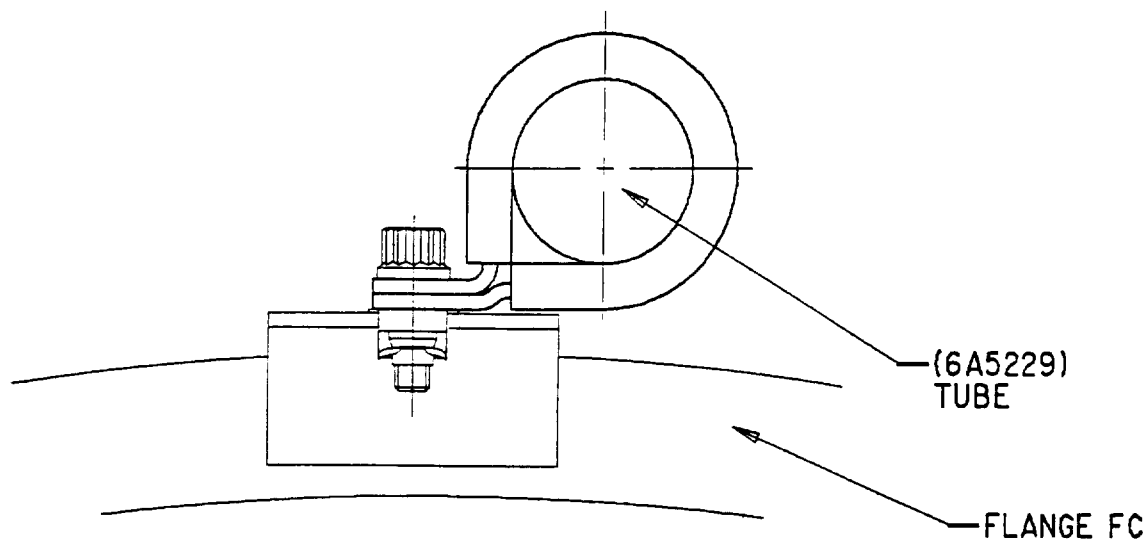
CLIPPING POINT 2117  
BEFORE ALTERATION



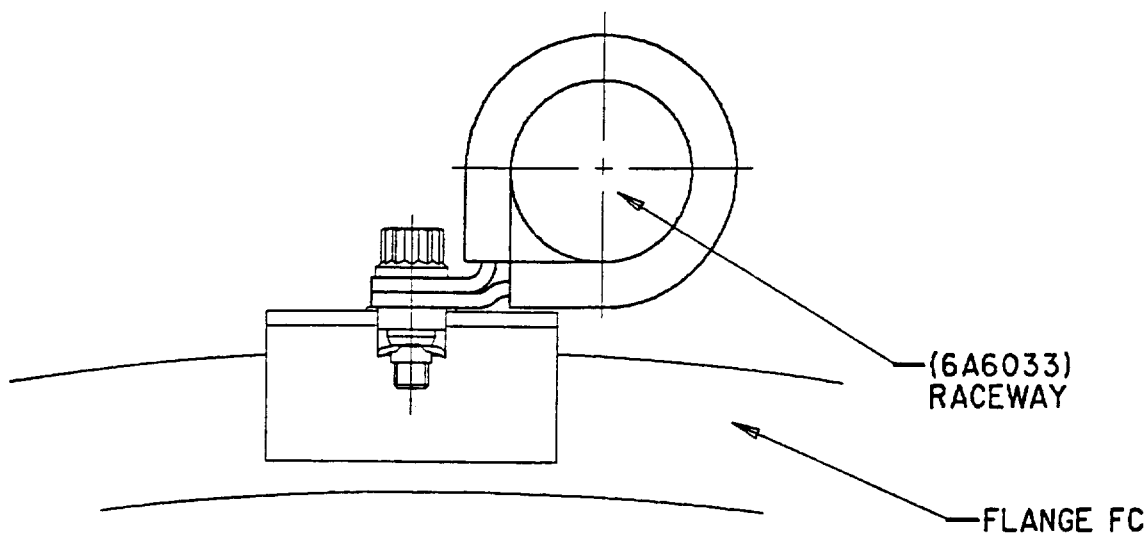
CLIPPING POINT 2117  
AFTER ALTERATION

Clipping Point 2117 - Before and after alteration  
Figure 10

ded0002247



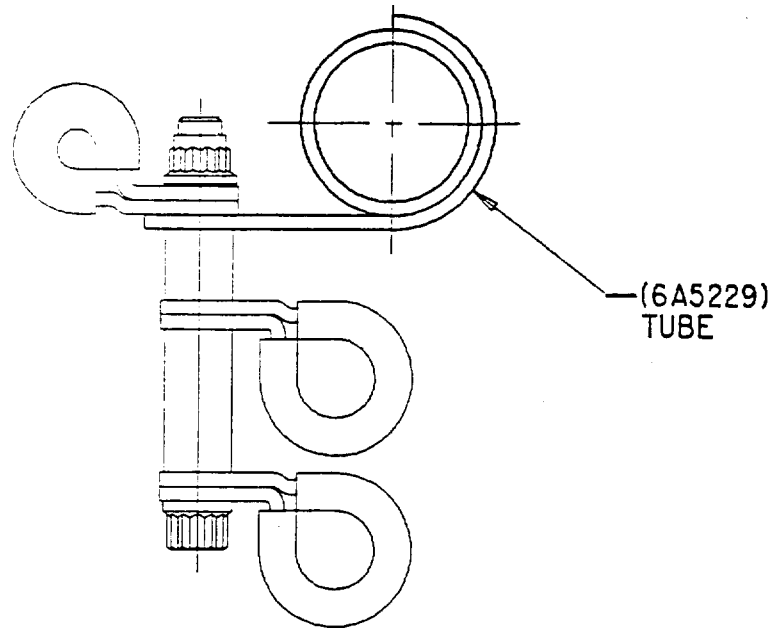
VIEW LOOKING FORWARD  
CLIPPING POINT 2118  
BEFORE ALTERATION



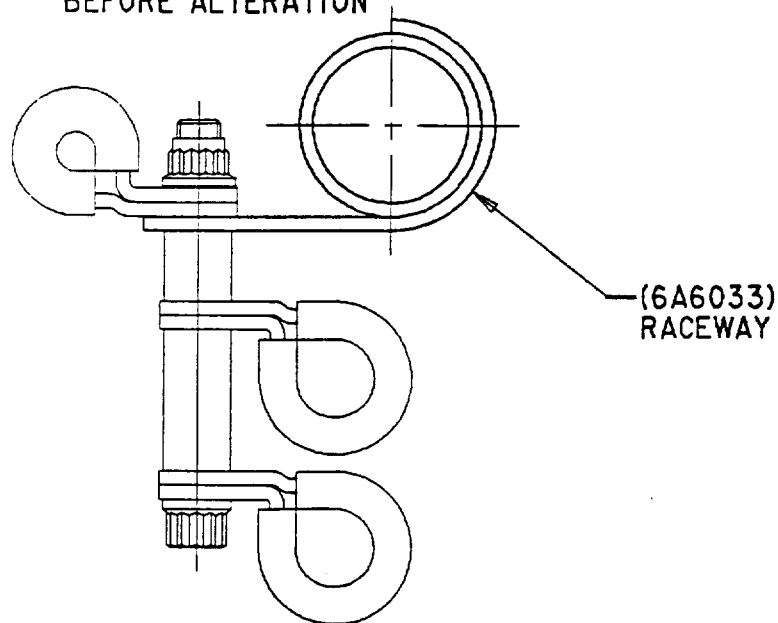
VIEW LOOKING FORWARD  
CLIPPING POINT 2118  
AFTER ALTERATION

Clipping Point 2118 – Before and after alteration  
Figure 11

ded0002248



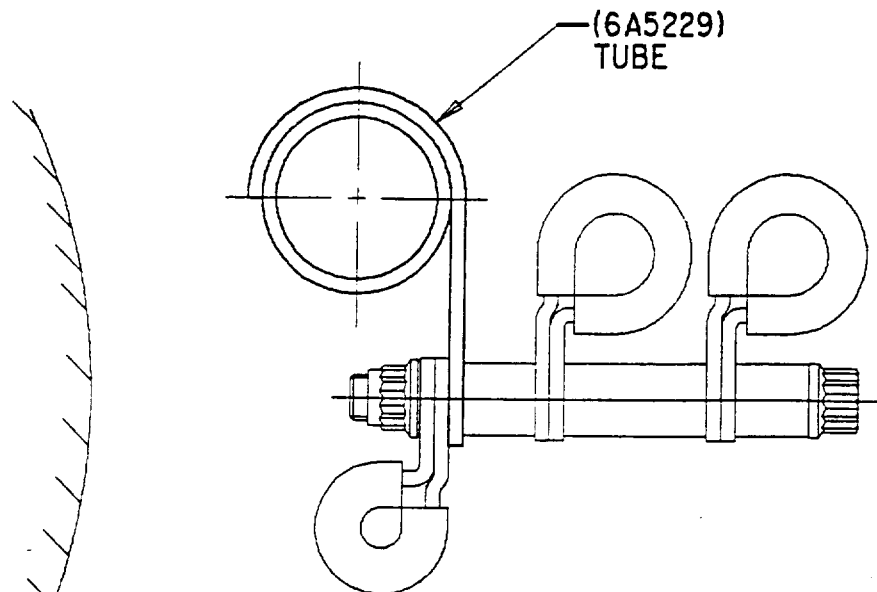
VIEW LOOKING FORWARD  
CLIPPING POINT 2119  
BEFORE ALTERATION



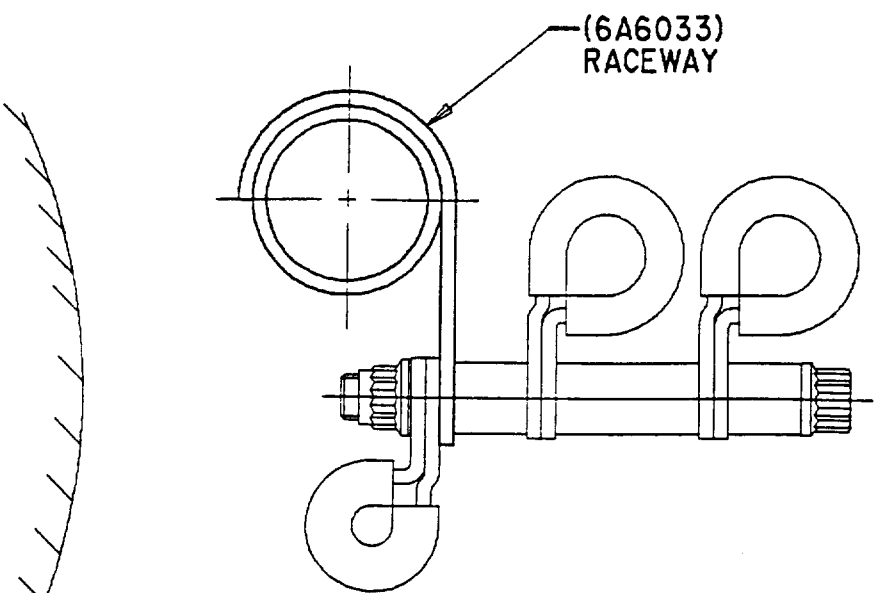
VIEW LOOKING FORWARD  
CLIPPING POINT 2119  
AFTER ALTERATION

Clipping Point 2119 - Before and after alteration  
Figure 12

ded0002249



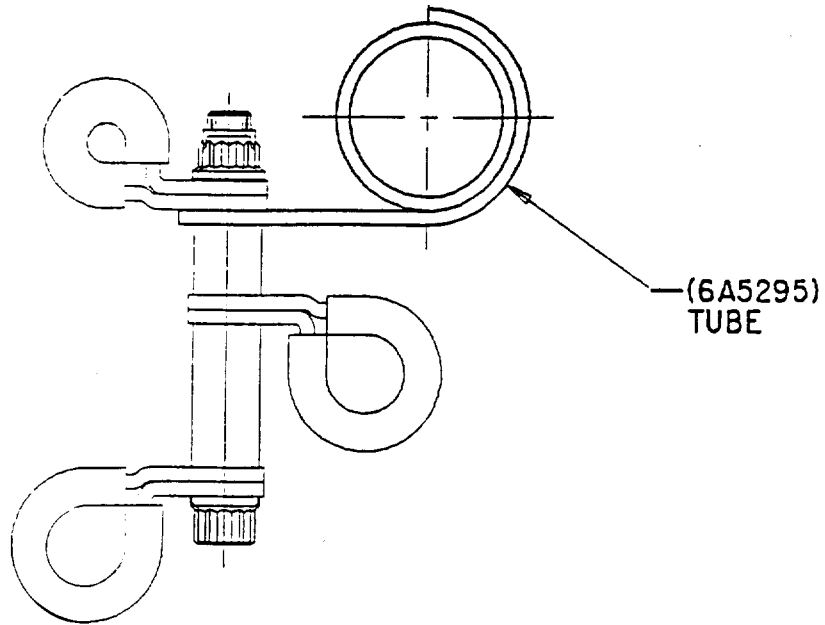
VIEW LOOKING FORWARD  
CLIPPING POINT 2120  
BEFORE ALTERATION



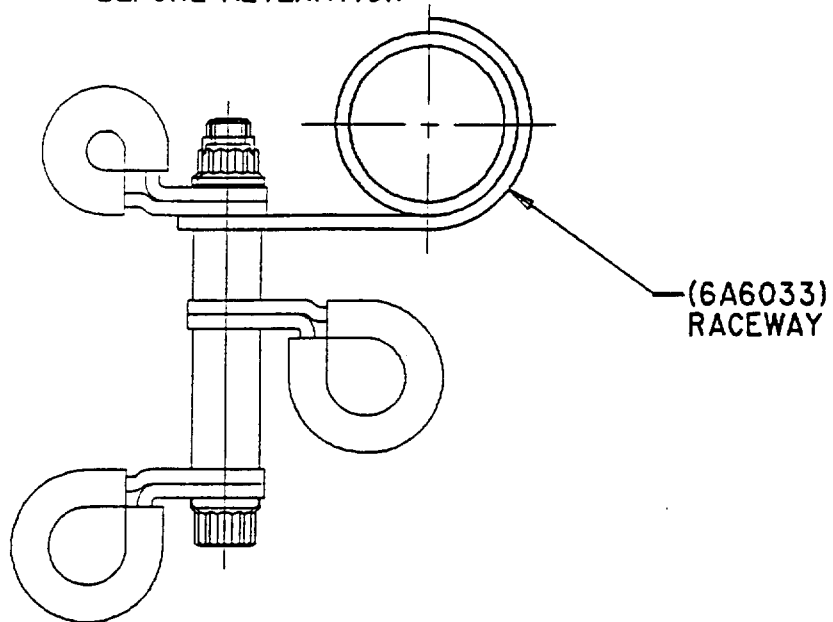
VIEW LOOKING FORWARD  
CLIPPING POINT 2120  
BEFORE ALTERATION

Clipping Point 2120 - Before and after alteration  
Figure 13

ded0002250



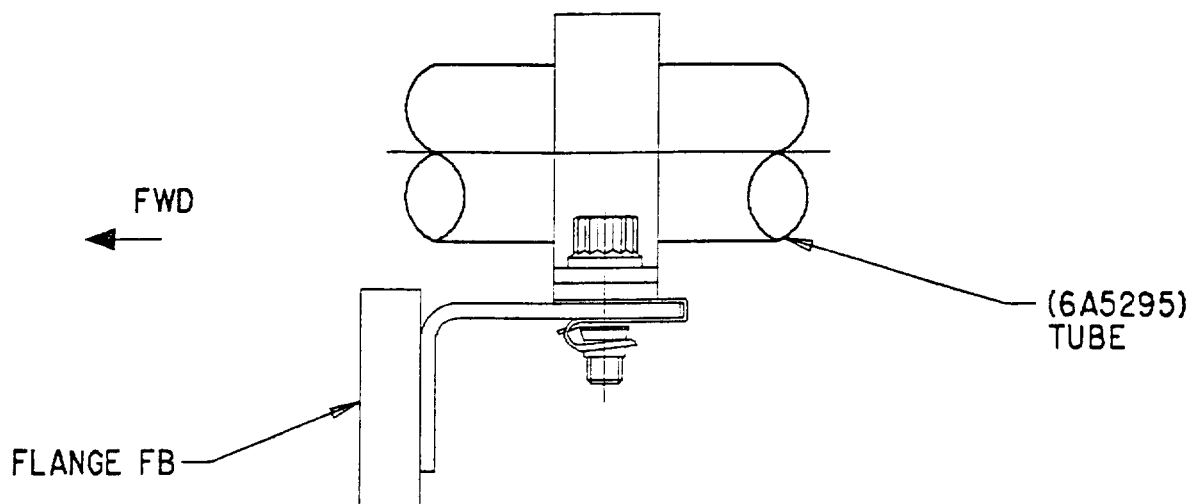
VIEW LOOKING FORWARD  
CLIPPING POINT 2121  
BEFORE ALTERATION



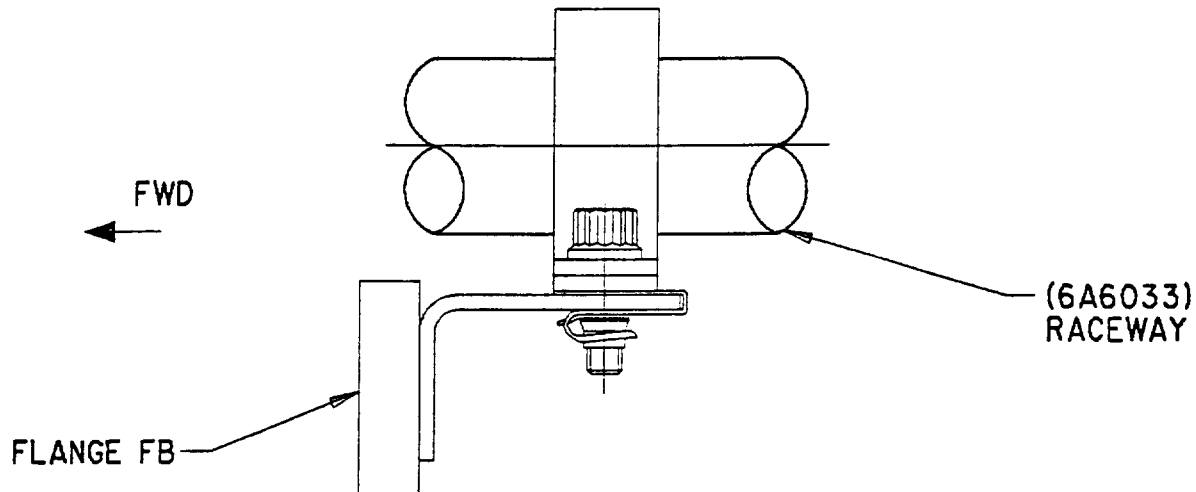
VIEW LOOKING FORWARD  
CLIPPING POINT 2121  
AFTER ALTERATION

Clipping Point 2121 - Before and after alteration  
Figure 14

ded0002251



CLIPPING POINT 2122  
BEFORE ALTERATION

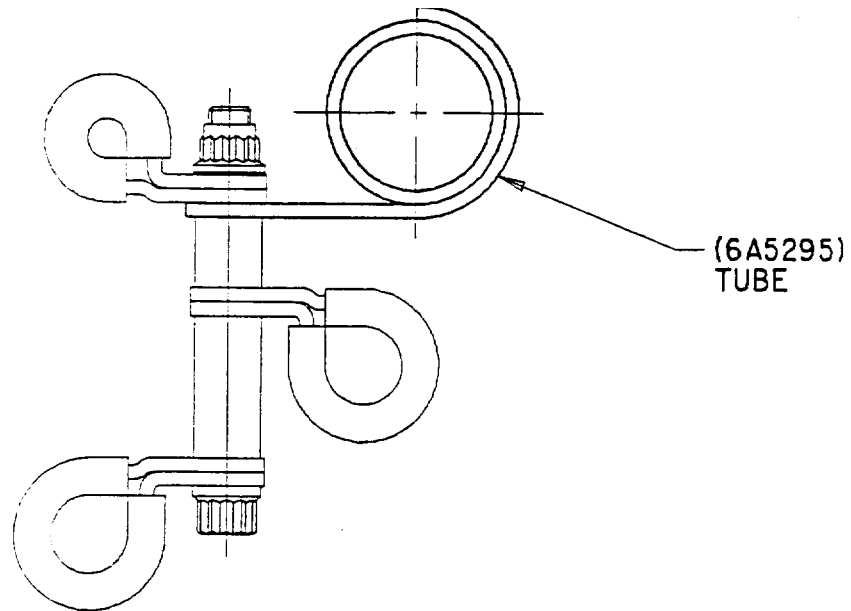


CLIPPING POINT 2122  
AFTER ALTERATION

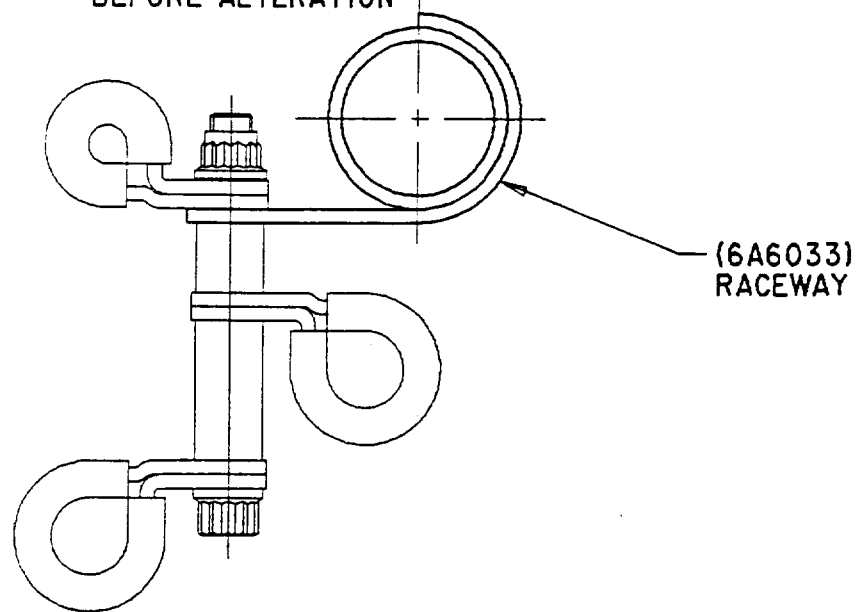
Clipping Point 2122 – Before and after alteration  
Figure 15

Printed in Great Britain

ded00002252



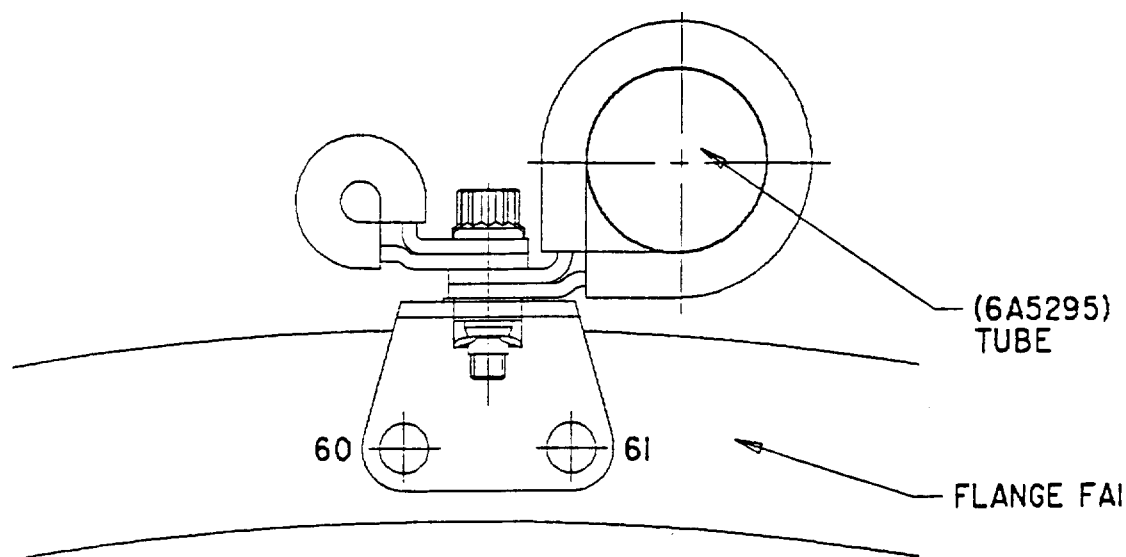
VIEW LOOKING FORWARD  
CLIPPING POINT 2123  
BEFORE ALTERATION



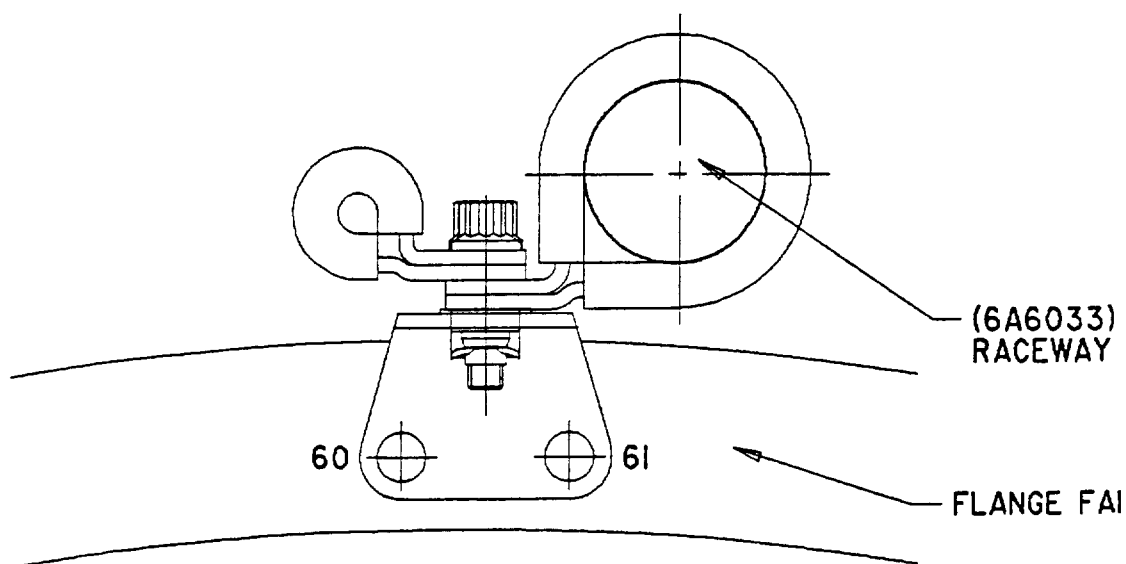
VIEW LOOKING FORWARD  
CLIPPING POINT 2123  
AFTER ALTERATION

Clipping Point 2123 - Before and after alteration  
Figure 16

dec00002253



VIEW LOOKING REARWARDS  
CLIPPING POINT 2124  
BEFORE ALTERATION

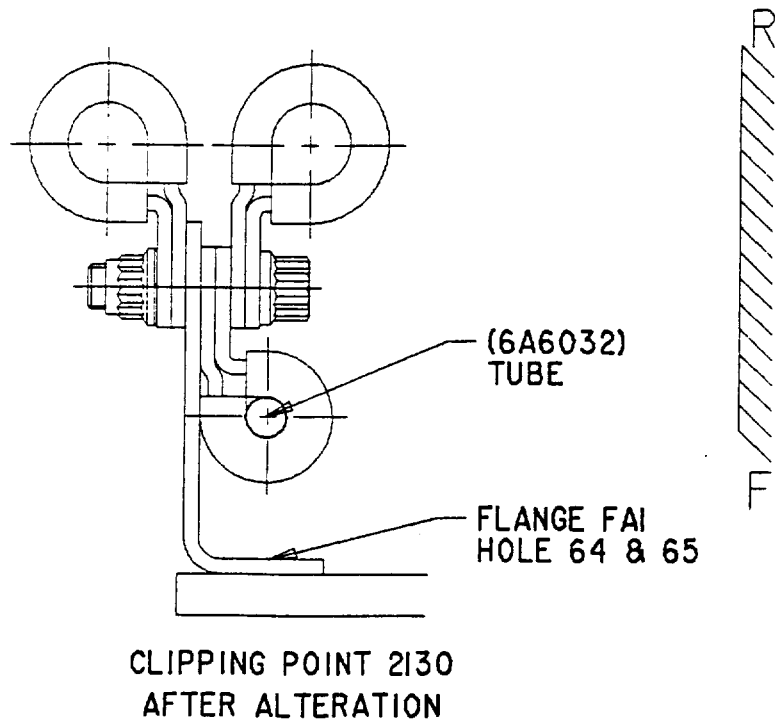
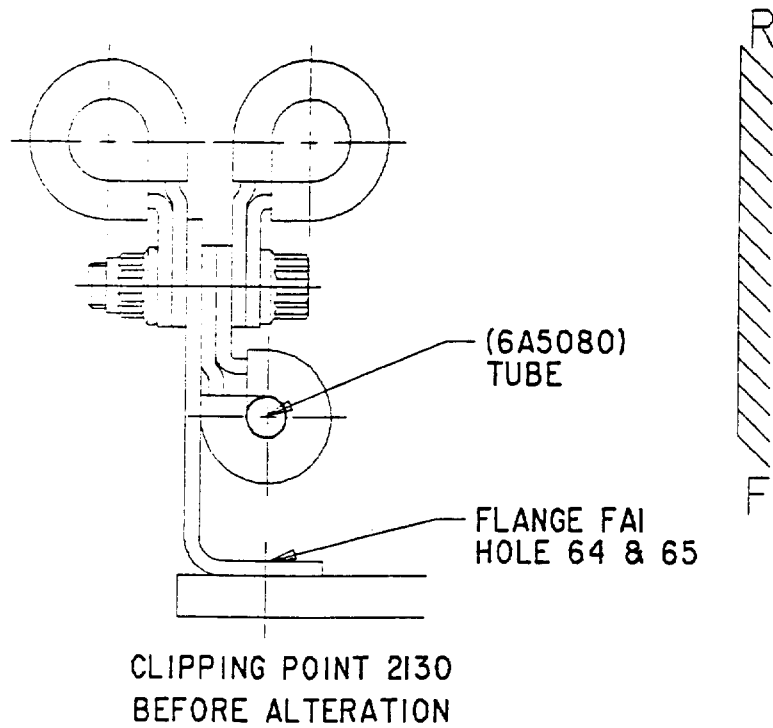


VIEW LOOKING REARWARDS  
CLIPPING POINT 2124  
AFTER ALTERATION

Clipping Point 2124 - Before and after alteration  
Figure 17

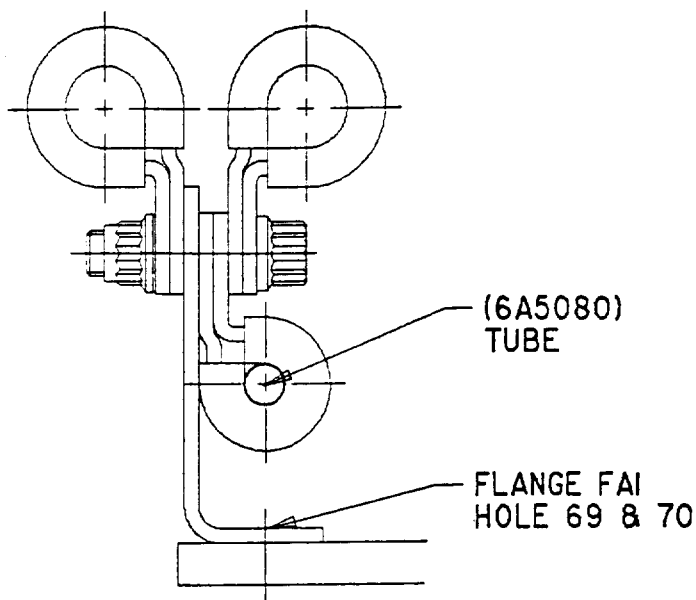
ded0002254



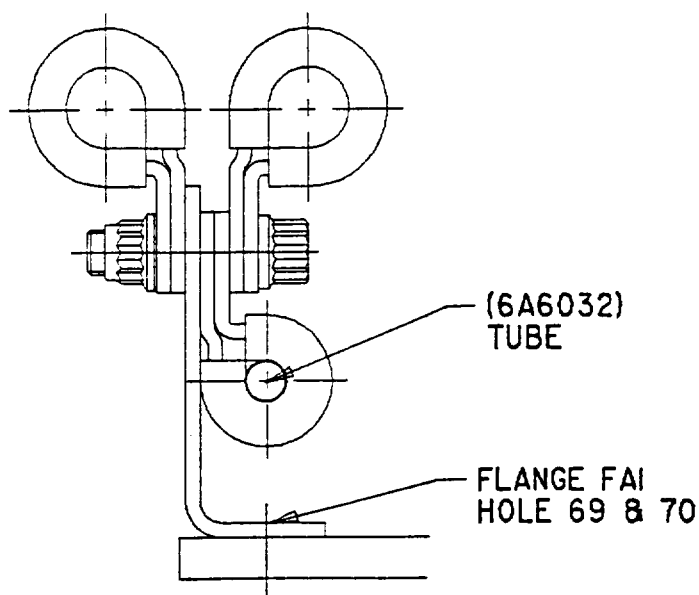


Clipping Point 2130 – Before and after alteration  
Figure 18

ded0002255



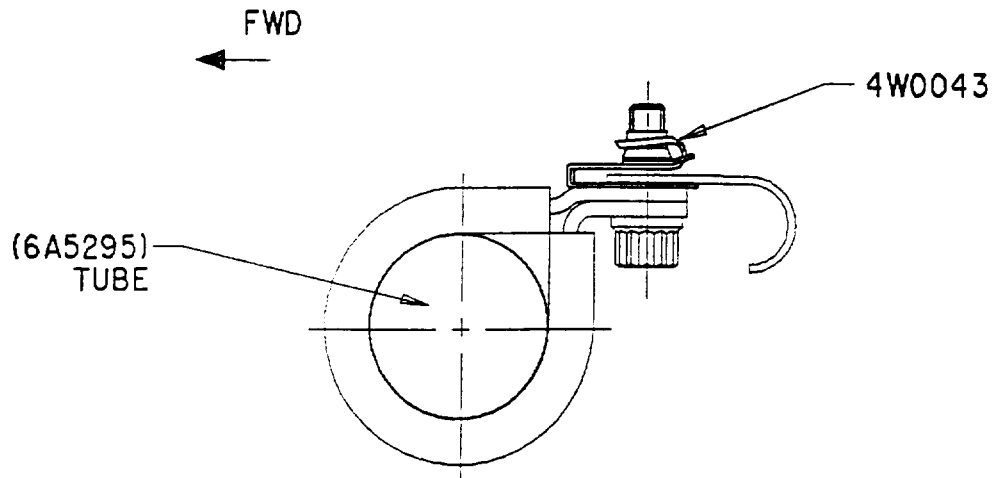
CLIPPING POINT 2131  
BEFORE ALTERATION



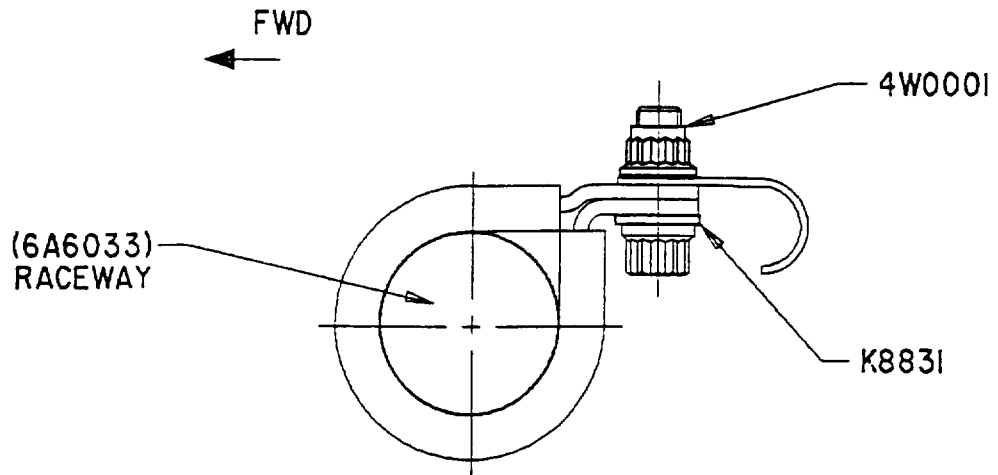
CLIPPING POINT 2131  
AFTER ALTERATION

Clipping Point 2131 - Before and after alteration  
Figure 19

ded0002256



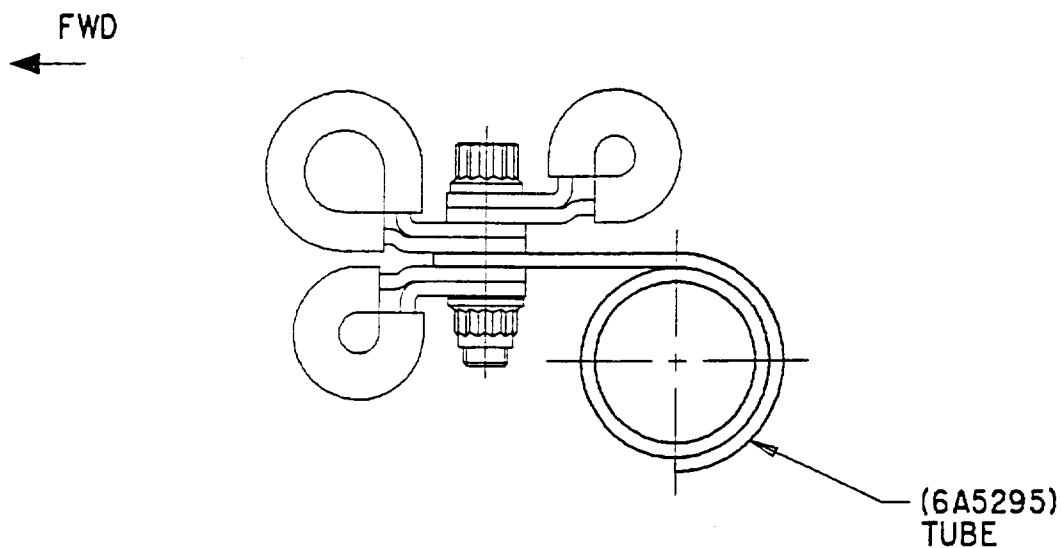
CLIPPING POINT 2345  
BEFORE ALTERATION



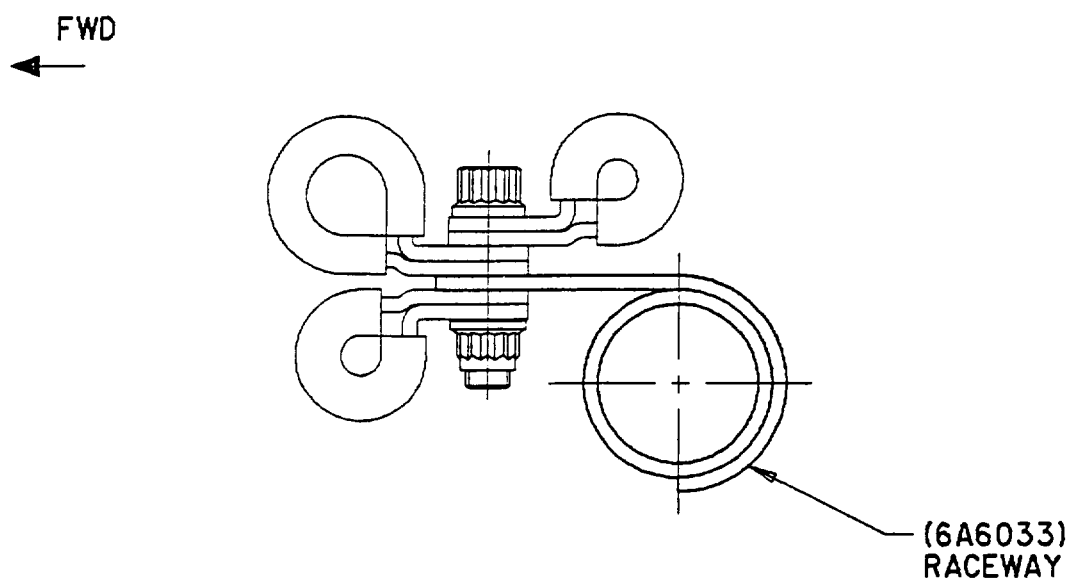
CLIPPING POINT 2345  
AFTER ALTERATION

Clipping Point 2345 – Before and after alteration  
Figure 20

ded0002257



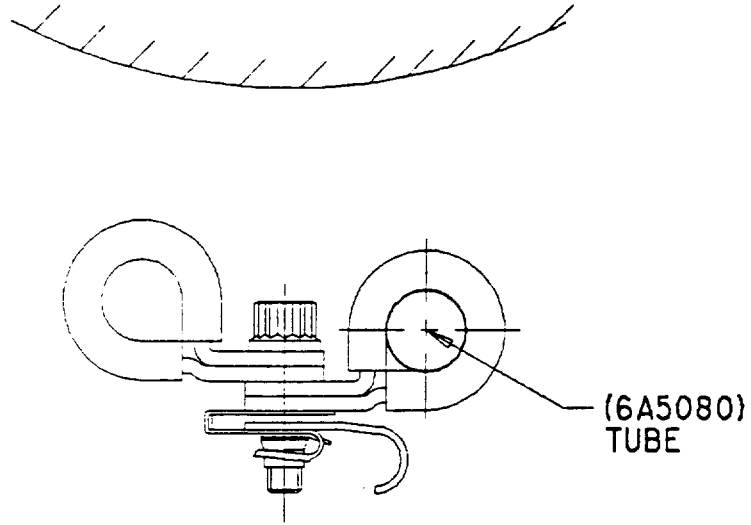
CLIPPING POINT 2346  
BEFORE ALTERATION



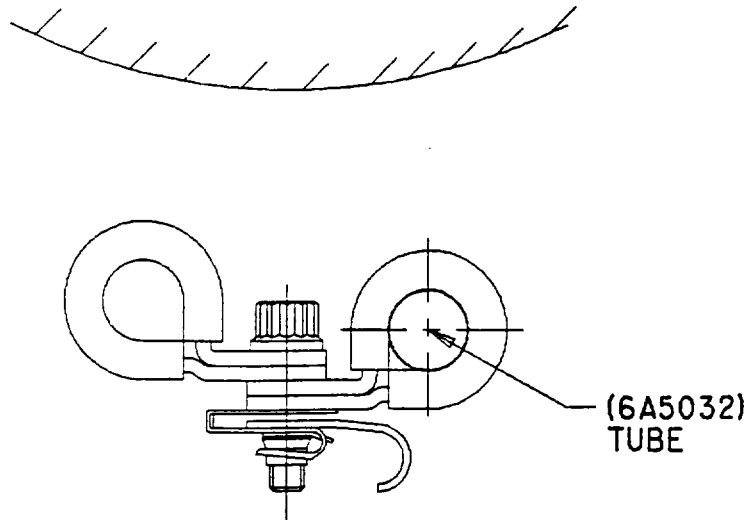
CLIPPING POINT 2346  
AFTER ALTERATION

Clipping Point 2345 – Before and after alteration  
Figure 21

ded0002258



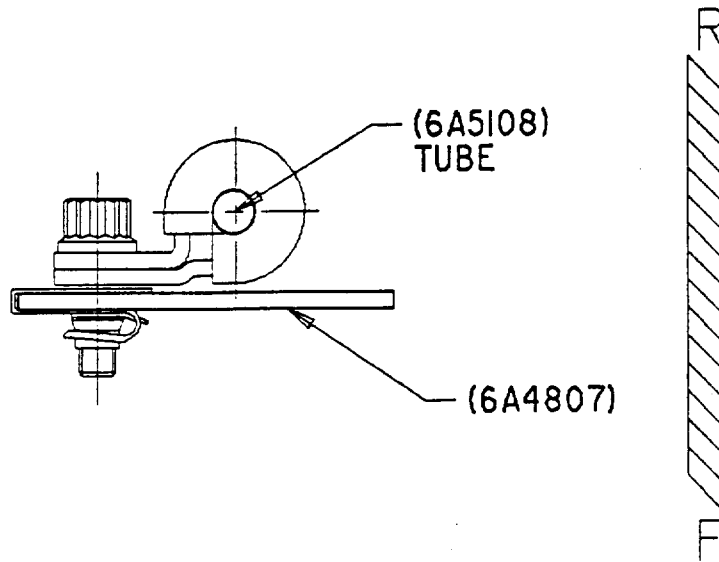
VIEW LOOKING FORWARD  
CLIPPING POINT 2347  
BEFORE ALTERATION



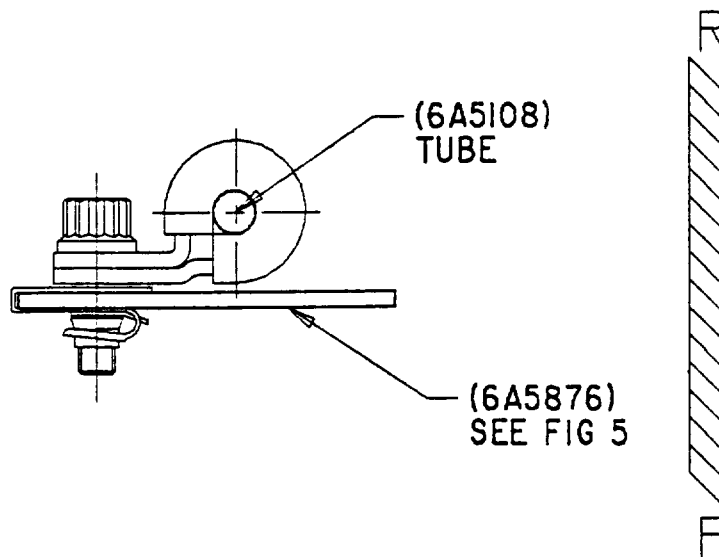
VIEW LOOKING FORWARD  
CLIPPING POINT 2347  
AFTER ALTERATION

ded0002259

Clipping Point 2347 – Before and after alteration  
Figure 22



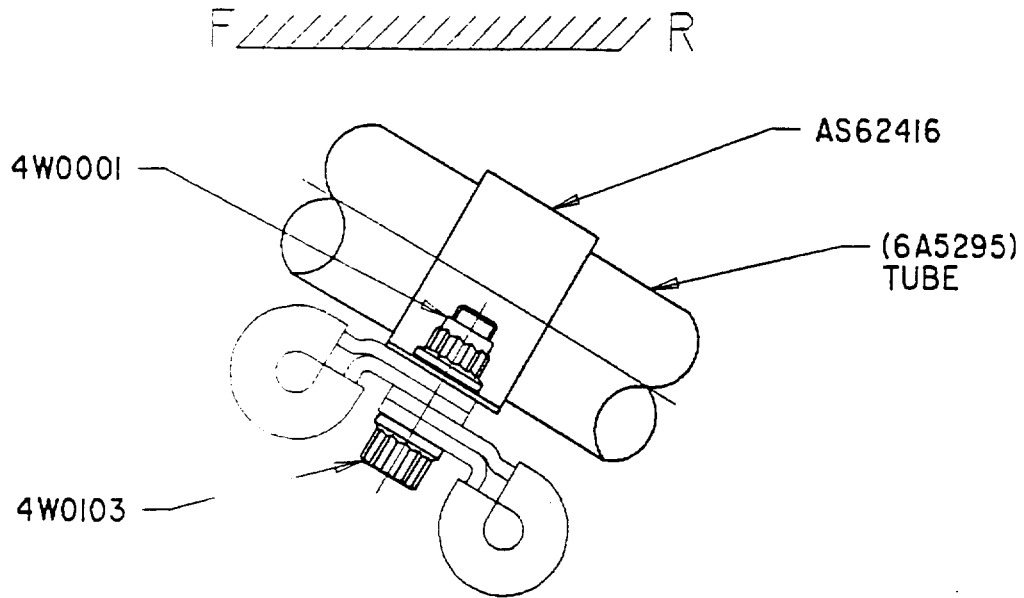
CLIPPING POINT 2349  
BEFORE ALTERATION



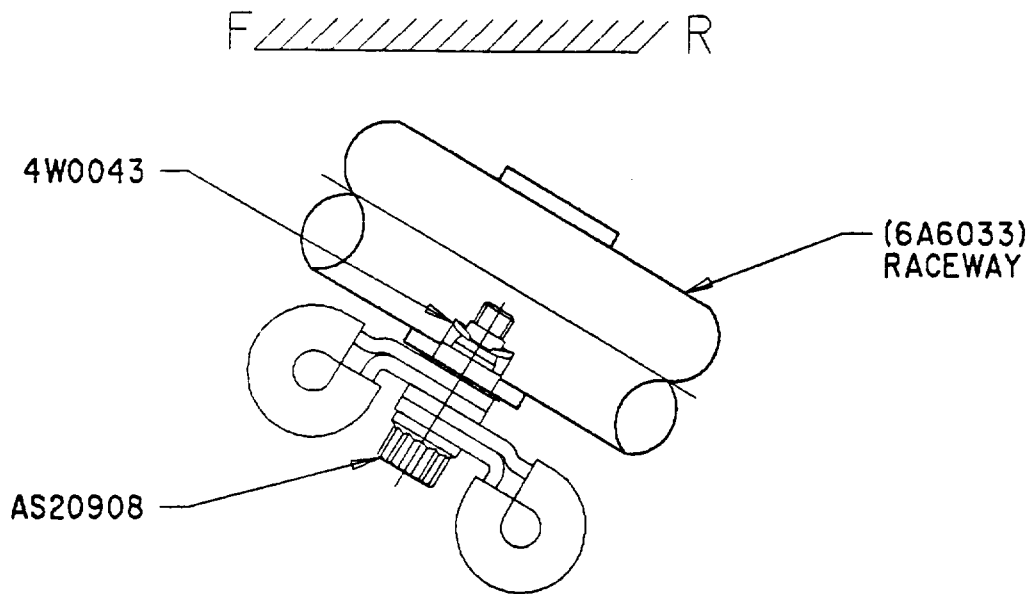
CLIPPING POINT 2349  
AFTER ALTERATION

Clipping Point 2349 – Before and after alteration  
Figure 23

ded0002260



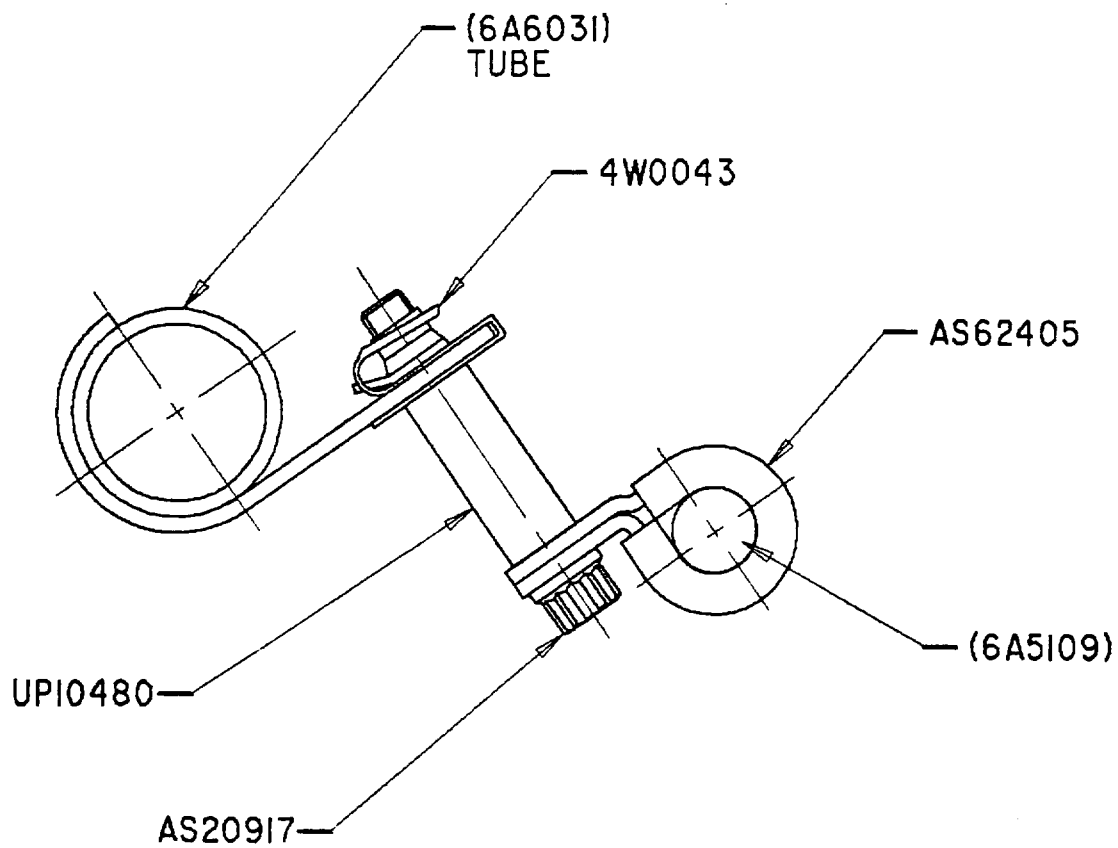
CLIPPING POINT 2557  
BEFORE ALTERATION



CLIPPING POINT 2557  
AFTER ALTERATION

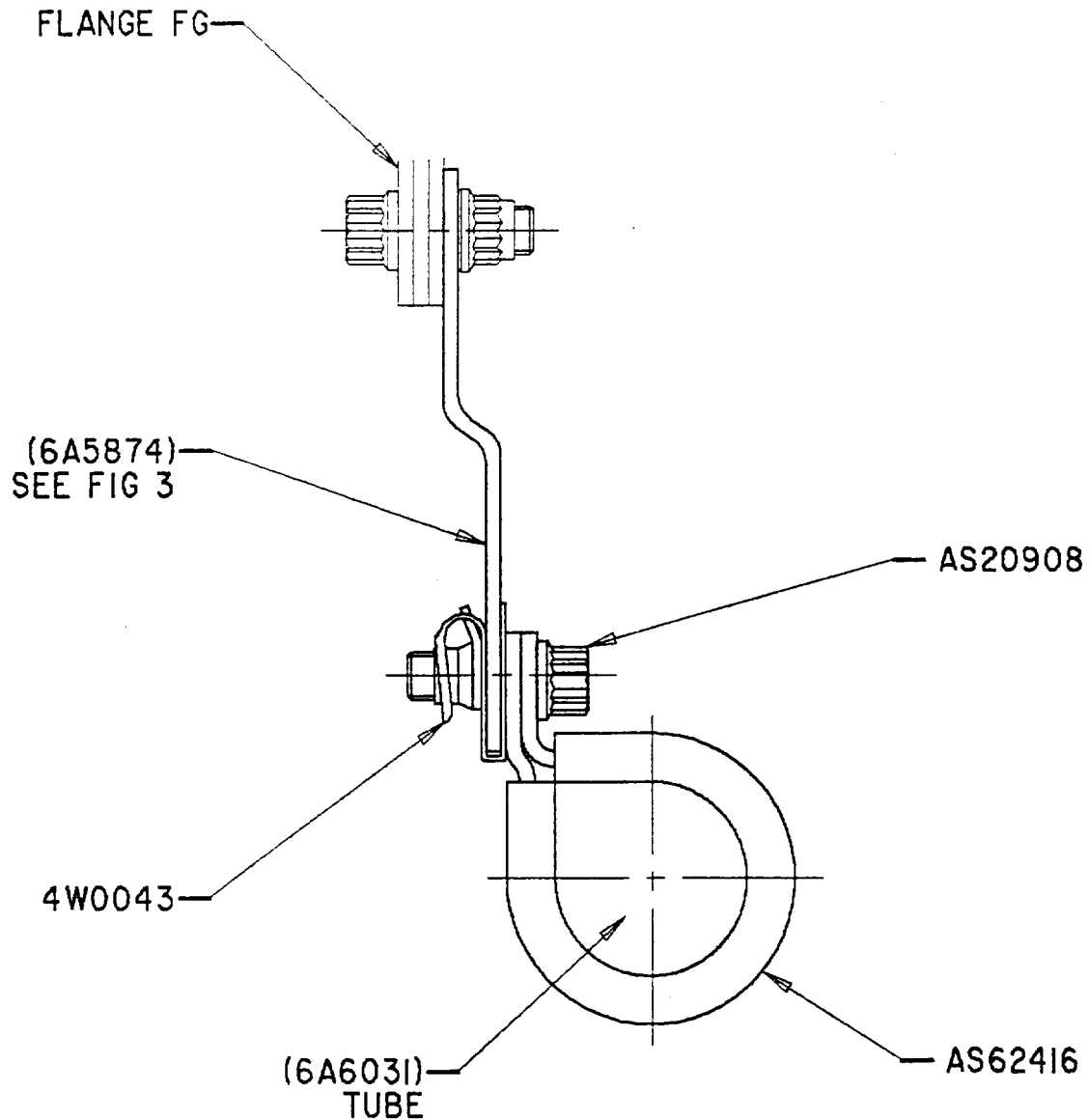
Clipping Point 2557 - Before and after alteration  
Figure 24

ded00002261



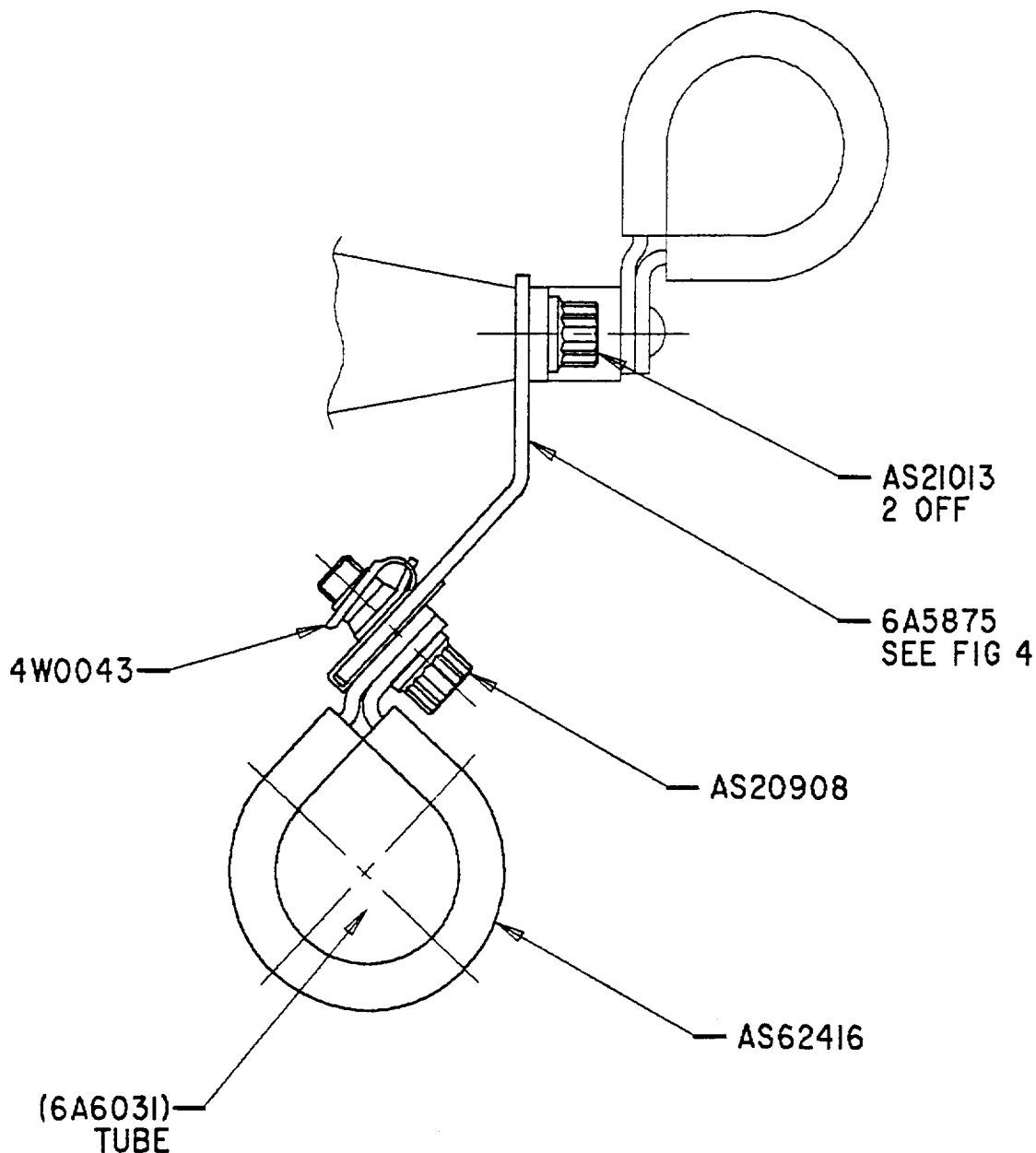
Clipping Point 2635 - Additional  
Figure 25





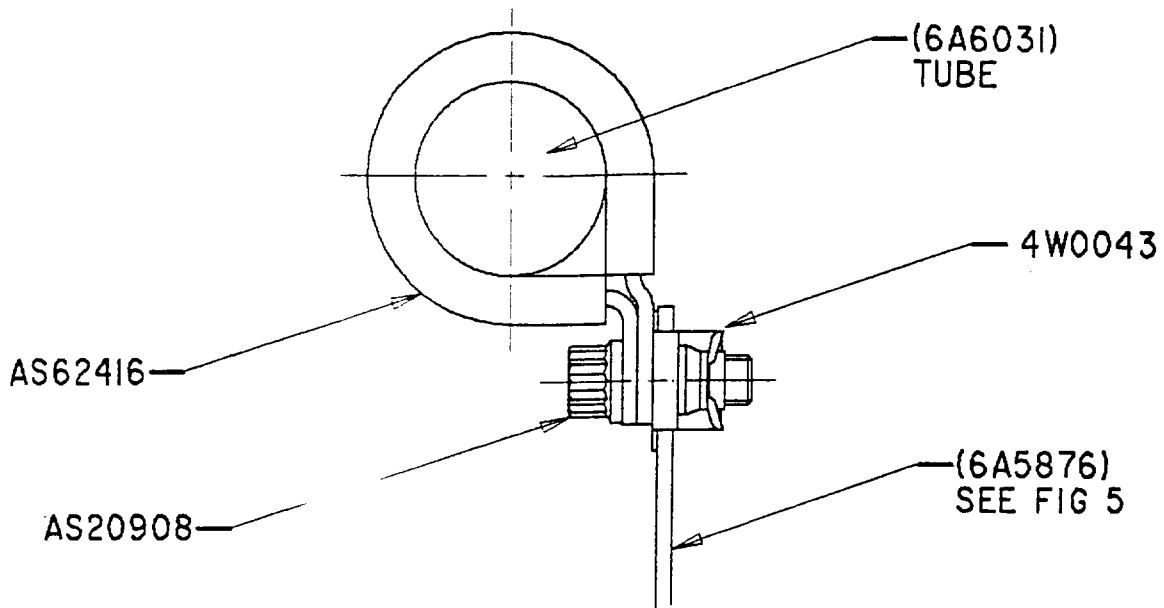
ded0002263

Clipping Point 2636 - Additional  
Figure 26

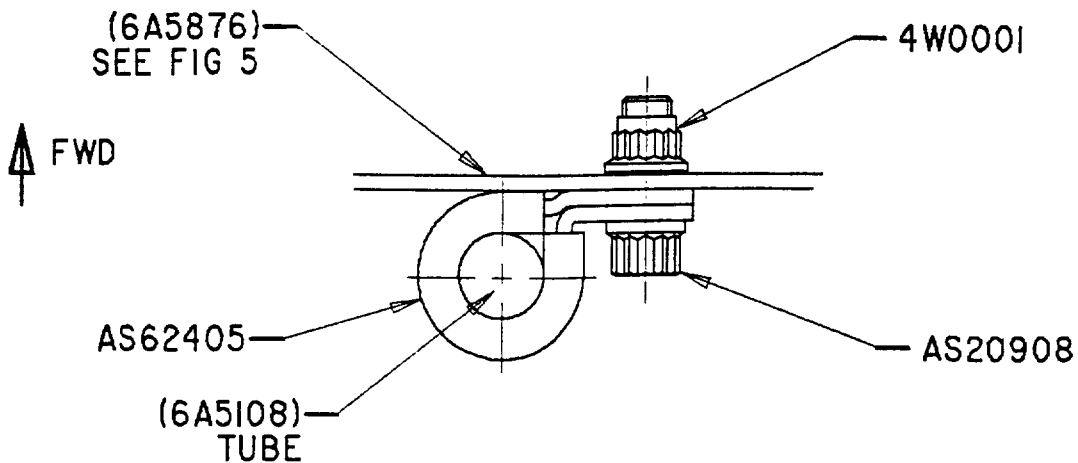


Clipping Point 2638 - Additional  
Figure 27

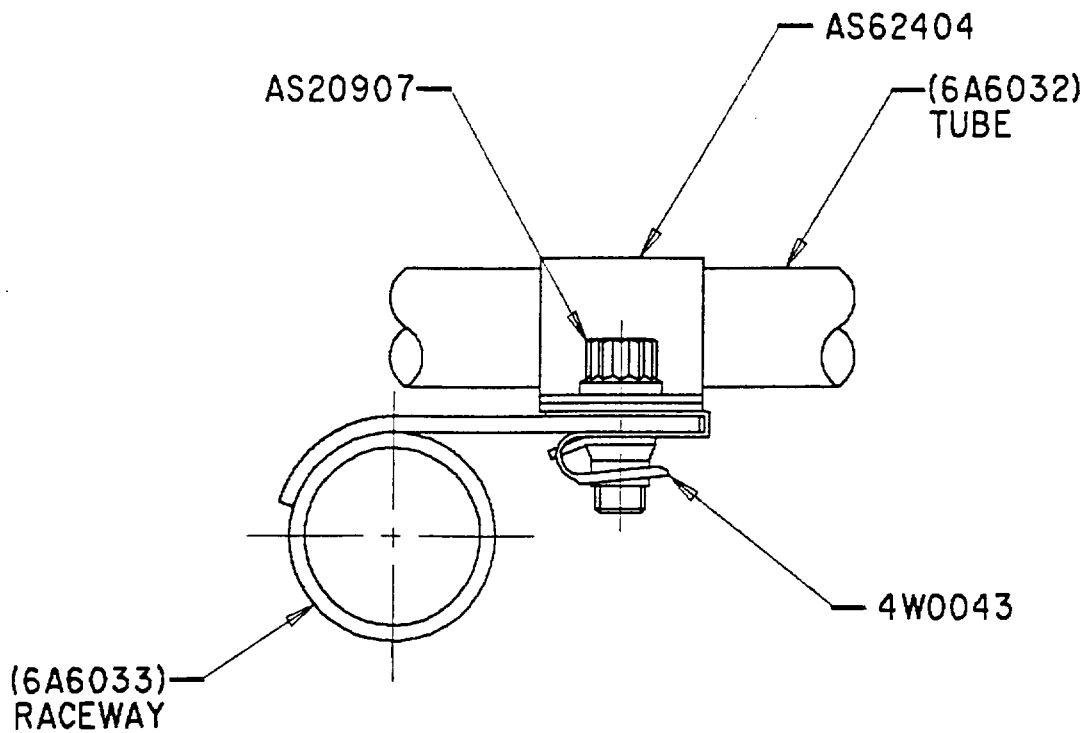
V2500-ENG-79-0040



VIEW LOOKING REARWARD  
CLIPPING POINT 2639 - ADDITIONAL



Clipping Point 2640 - Additional  
Figure 28



VIEW LOOKING REARWARDS

Clipping Point 2641 – Additional  
Figure 29