V2500 International Aero Engines
SERVICE BULLETIN

AIR - COOLING - IGNITION COOLING LEADS - INTRODUCTION OF NEW IGNITION EXCITER COOLING TUBES

MODEL APPLICATION

V2525-D5
V2528-D5

BULLETIN INDEX LOCATOR

71-00-00
73-00-00
74-00-00
75-00-00

Compliance Category Code

6

Internal Reference No.

EC94VR046

AIR - COOLING - IGNITION COOLING LEADS -
INTRODUCTION OF NEW IGNITION EXCITER
COOLING TUBES

1. Planning Information

A. Effectivity

(1) Aircraft:

McDonnell Douglas MD-90

(2) Engine:

(a) V2525-D5 Engines prior to Serial No.V20018

(b) V2528-D5 Engines prior to Serial No.V20018

B. Concurrent Requirements

None

C. Reason

(1) Condition

Limited clearance exists between the Igniter Box cooling air flexi-hoses and the master BSBVA servo tubes and tube connectors.

(2) Background

During assembly it was highlighted that limited clearance existed between the Igniter Box cooling air flexi-hoses and the master BSBVA servo tubes and tube connectors. This may cause chafing on the air hoses adjacent to the master BSBVA.

(3) Objective

To eliminate potential fouls between the Igniter Box flexi-hoses and the master BSBVA servo tubes.

(4) Substantiation

A trial installation of the new tube/hose configuration was carried out successfully on a Class III mock-up installation.

(5) Effect of Bulletin on Workshop Procedures:

Removal/Installation	Affected (See Supplemental Information)
Disassembly/Assembly	Not Affected
Cleaning	Not Affected
Inspection/Check	Not Affected
Repair	Not Affected
Testing	Not Affected

(6) Supplemental Information

The Removal/Installation will be revised to add the new configuration of this Service Bulletin.

D. Description

The changes introduced by this Bulletin are as follows:

(1) Two new Ignition box cooling air flexi-hoses replacing the existing hoses.

(2) Four new tube assemblies replacing existing assemblies as follows:

Two new fuel tubes, BSBVA master to disconnect and disconnect to BSBVA master. These fuel tubes now run above rather than below the Ignition flexi-hoses.

Two new P2.5 air tubes, P2.5 air sensor to disconnect and disconnect to bifurcation panel (strut 6).

(3) Loom A is now clipped at CP8057, CP8058 and CP8059 which replace CP7817 and CP7895. Loom A is physically unchanged. Loom E is now clipped at CP8062 and CP8063 which replace CP7842 and CP7843. Loom E now runs below Ignition box No.1 from CP8062 to CP8063 and is physically unchanged.

A new bracket, 6A5952 is added to support loom E at CP8063.

A new bracket, 6A5953 is added to support flexi-tube at CP8061.

(4) Clipping points CP7047 and CP7822 are amended to accommodate the new tube and harness runs.

Clipping points CP8057 to CP8063 inclusive are added to accommodate the new tube and harness runs.

Clipping points CP7046, CP7817, CP7842, CP7843 and CP7895 are deleted.

E. Approval

The part number changes and/or part modifications described in Section 2 and 3 of this Service Bulletin have been shown to comply with the applicable Federal Aviation Regulations and are FAA-APPROVED for the Engine Model Listed.

F. Compliance

Category code 6

Accomplish when the sub-assembly (i.e. modules, accessories, components, build groups) is disassembled sufficiently to afford access to the affected parts and to all affected spare parts.

G. Manpower

Estimated manhours to incorporate the full intent of this Bulletin:

	Venue	Estimated Manhours
(1)	In Service	Not applicable
(2)	At Overhaul	Not affected

H. Material - Price and Availability

(1) Modification Kit not required.

(2) See "Material Information" section for prices and availability of future spares.

I. Tooling - Price and Availability

Special tools are not required

J. Weight and Balance

(1)	Weight change	Plus 0.6lb (0,277kg)
(2)	Moment arm	4.0in (101,6mm) forward of datum
(3)	Datum	Engine front mount centerline (Power Plant Station (PPS) 100)

K. Electrical Load Data

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

L. References

None

M. Other Publications Affected

(1) V2500 Illustrated Parts Catalog (S-V2500-3IA), Chapter/Section 71-51-51, 71-52-51, 73-11-49, 73-22-49, 74-11-38 and 75-27-49.

(2) V2500 Engine Manual (E-V2500-3IA), 72-00-40, Removal -02 and -03 and Installation -08 and -09.

(3) V2500 Component Maintenance Manual (CMM-EHC-V2500-3IA), 71-52-51, Cleaning and Inspection/Check.

(4) V2500 Component Maintenance Manual (CMM-THD-V2500-3IA), 73-11-49, Cleaning and Inspection/Check, 73-22-49, Cleaning and Inspection/Check and 75-27-49, Cleaning and Inspection/Check.

(5) V2500 Component Maintenance Manual (CMM-MECH-V2500-3IA), 73-11-49, Cleaning and Inspection/Check and 74-11-38, Cleaning and Inspection/Check.

(6) V2500 Power Plant Build-Up Manual (PPB-V2500-3IA), 71-00-02, P/P Build Up.

(7) V2500 Engine Maintenance Manual (M-V2500-3IA), 71-51-51, Removal and Installation, 71-52-51, Removal and Installation and 74-10-01, Removal and Installation.

(8) Repair Schemes VRS6221, VRS6222, VRS6223 and VRS6224 are affected by this Service Bulletin.

2. Accomplishment Instructions

A. Rework Instructions

(1) There are no rework instructions necessary to accomplish this Service Bulletin.

B. Assembly Instructions

(1) Install the bolt and nut, but not the clip, previously used at clipping point 7843. Torque the bolt to 36 to 45 lbfin (4 to 5 Nm). Refer to Figures 1, 2 and 9.

(2) Install the new 6A5952 bracket on to the ignition exciter box mounting bracket using the AS21047 bolts. Refer to Figures 13 and 14.

(3) Connect the 6A6149 P2.5 air tube to the P2.5 sensor. Connect the 6A6151 P2.5 air tube to the 6A6149 tube and also to the interface tube on the RH bifurcation panel. Torque the tube coupling nuts to 159 to 177 lbfin (18 to 20 Nm). Wire lock the nuts using CoMat 02-126 lockwire. Refer to Figure 3.

(4) Run the loom E harness 6A5732 under the 6A5127 fuel tube to the Master BSBVA, under the No.1 ignition exciter box and forward to the T2.5 and fan trim balance probe terminals. Refer to Figure 3.

(5) Connect the loom E harness leads E13, E14 and E15 to the fan trim balance probe terminals using the existing nuts and washers. Torque the nuts to 20 to 25 lbfin (2.26 to 2.82 Nm). Refer to Figure 3.

(6) Connect the loom E harness leads E16 and EA to the T2.5 terminal block using the existing nuts and bolt. Torque the nuts and the bolt to 20 to 25 lbfin (2.26 to 2.82 Nm). Refer to Figure 3.

(7) Clip the loom E harness 6A5732 to the ignition exciter box support bracket at clipping point 8062 using the AS48016 bolt, LK53268 spacer, AS62503 clip and 4W0001 nut. Torque the bolt to 36 to 45 lbfin (4 to 5 Nm). Refer to Figures 3, 13 and 14.

(8) Clip the loom E harness 6A5732 to the 6A5952 bracket at clipping point 8063 using the AS21047 bolt, AS62503 clip and the 4W0001 nut that was previously used at clipping point 7046. Torque the bolt to 36 to 45 lbfin (4 to 5 Nm). Refer to Figures 3, 4, 13 and 14.

(9) Install the loom E harness 6A5372 at clipping points 7822, 7844 and 7845 using the existing material. Note the new arrangement of clipping point 7822. Torque the bolts to 36 to 45 lbfin (4 to 5 Nm). Refer to Figures 3 and 7.

(10) Install the new 6A5953 bracket at position 'B' on the No.1 and No.2 ignition exciter mounting brackets using two 4W0165 bolts. Torque the bolts to 85 to 105 lbfin (10 to 12 Nm). Refer to Figure 14.

(11) Loosely install the existing clamps to either end of the new BA7728 and BA7729 ignition exciter cooling air tubes. Install the tubes to their respective ignition exciter box and fan frame fittings. Tighten the clamp screws by hand. Refer to Figure 3.

(12) Clip the BA7728 ignition exciter cooling air tube to the 6A5953 bracket at clipping point 8061 using the AS21407 bolt, TA02212PH14TM clip and 4W0001 nut. Torque the bolt to 36 to 45 lbfin (4 to 5 Nm). Refer to Figures 3 and 12.

(13) Install a new MS9967-011 sealing ring onto each of the master BSBVA servo tube connectors. Connect the new 6A6147 and 6A6148 servo fuel tubes to the master BSBVA. Torque the tube coupling nuts to 204 to 221 lbfin (23 to 25 Nm). Wire lock the nuts using CoMat 02-126 lockwire. Refer to Figure 3.

(14) Connect the 6A6147 and 6A6148 servo fuel tubes to the 6A5315 and 6A5316 fuel tubes respectively. Torque the tube coupling nuts to 85 to 105 lbfin (10 to 12 Nm). Refer to Figure 3.

(15) Clip the P2.5 air tube and BSBVA servo fuel tubes at clipping point 7047 using the new AS20922 bolt and LK52397 spacer in addition to the remaining existing material. Torque the bolt to 36 to 45 lbfin (4 to 5 Nm). Refer to Figures 1, 3 and 5.

(16) Clip the P2.5 air tube and BSBVA servo fuel tubes at clipping point 7048 using the existing material. Torque the bolt to 36 to 45 lbfin (4 to 5 Nm). Refer to Figures 1 and 3.

(17) Clip the loom A harness and the P2.5 air tube at clipping point 7075 using the existing material. Torque the bolt to 36 to 45 lbfin (4 to 5 Nm). Refer to Figures 1 and 3.

(18) Clip the P2.5 air tube at clipping point 7076 using the existing material. Torque the bolt to 36 to 45 lbfin (4 to 5 Nm). Refer to Figures 1 and 3.

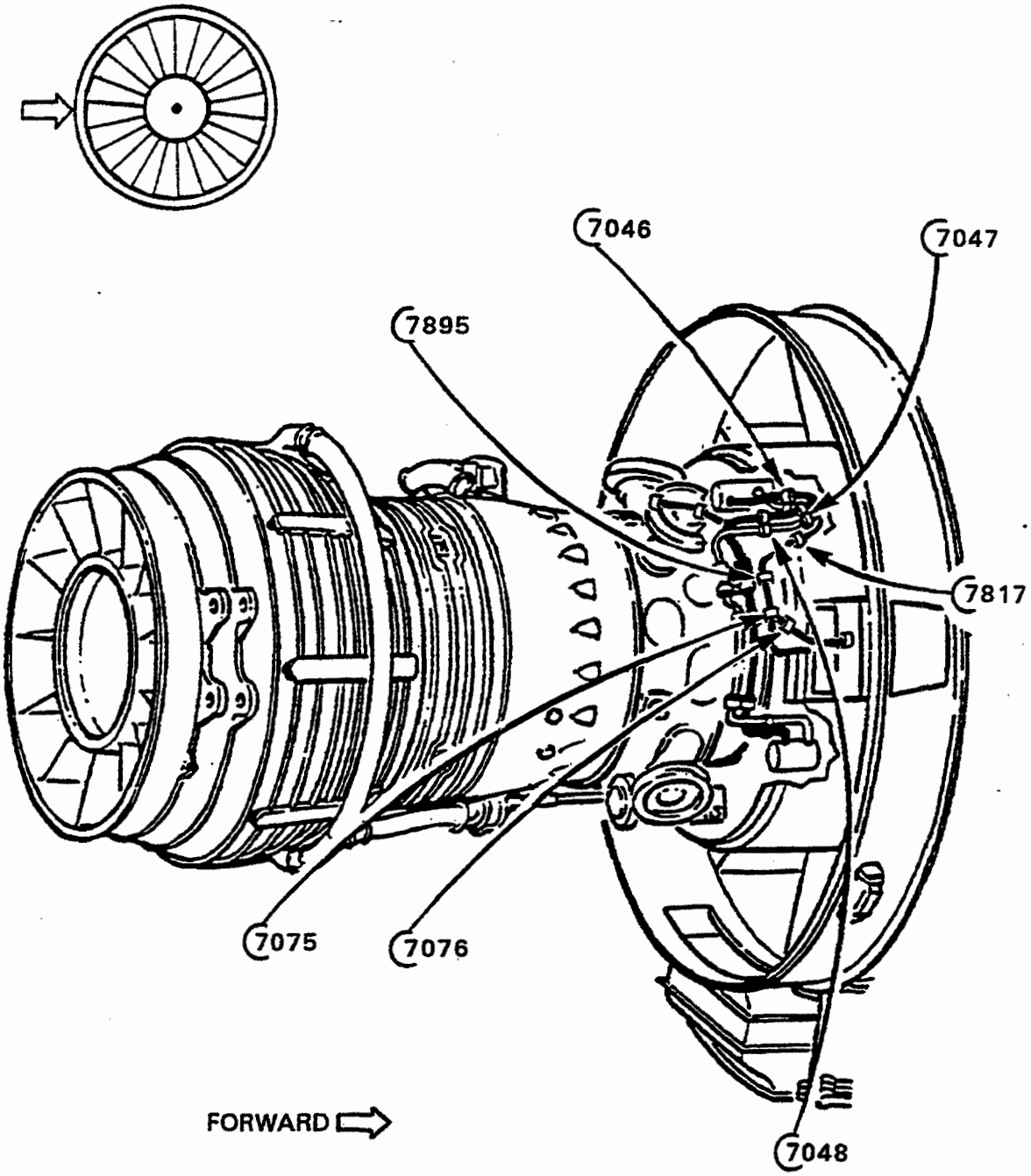
(19) Clip the loom A harness to the P2.5 air tube at clipping points 8057, 8058 and 8059 using the AS21407 bolts, AS62502 clips and 4W0001 nuts. Torque the bolts to 36 to 45 lbfin (4 to 5 Nm). Refer to Figures 3, 10 and 11.

(20) Clip the 6A6148 servo fuel tube to the 6A6147 servo fuel tube at clipping point 8060 using the AS21408 bolt, AS62405 clip and 4W0001 nut. Torque the bolt to 36 to 45 lbfin (4 to 5 Nm). Refer to Figures 3 and 11.

(21) Visually check the clearance, C, between the BA7729 ignition exciter cooling air tube and the master BSBVA servo tubes, 6A6147 and 6A6148, and also the clearance, D, between the BA7729 tube and the igniter box securing bolt. If these clearances are visually unequal then loosen the clamp at the igniter box end of the BA7729 tube and rotate the tube on the igniter box fitting until the clearances appear equal. Tighten the clamp screw by hand. Refer to Figure 15.

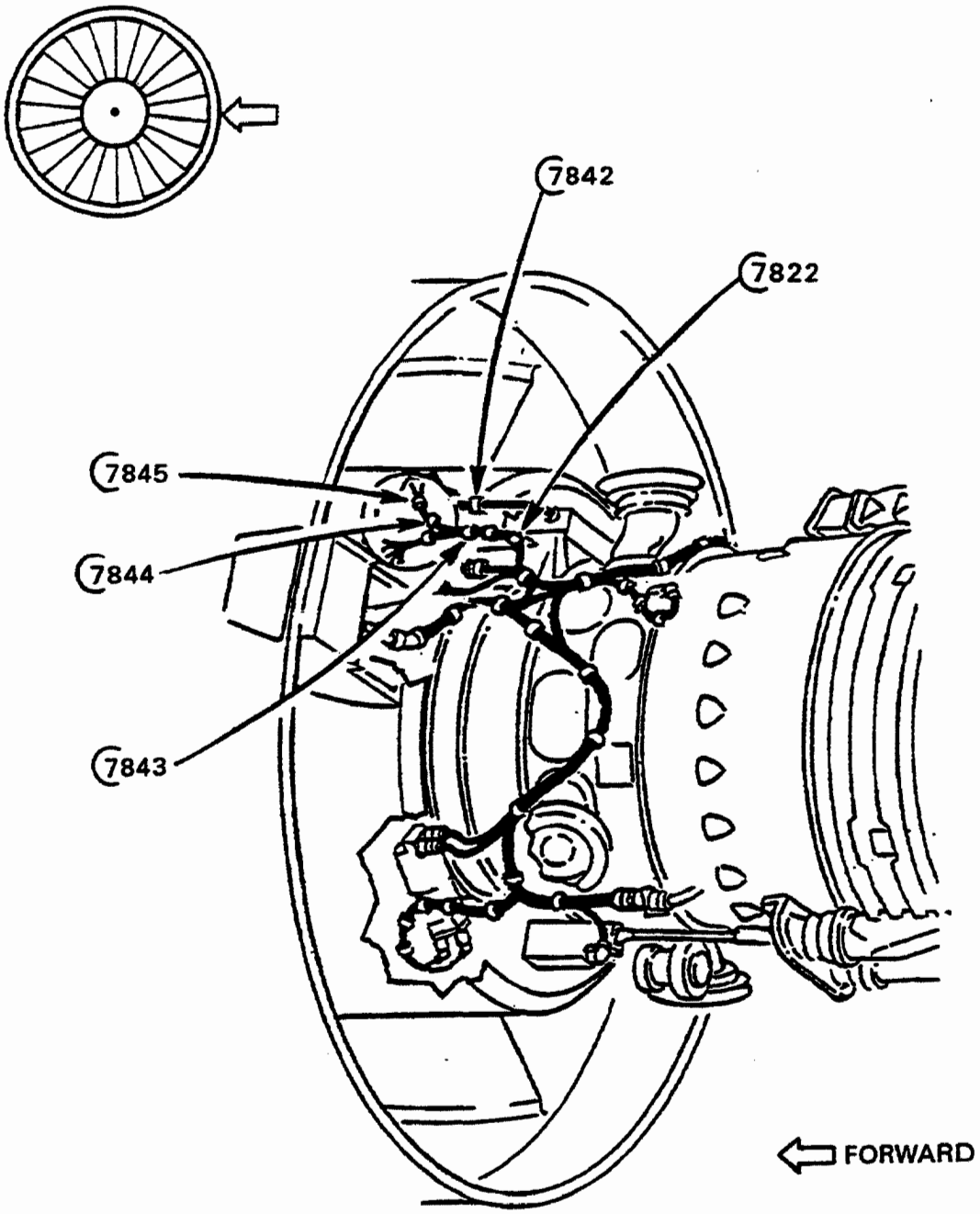
C. Recording Instructions

(1) A record of accomplishment is necessary.



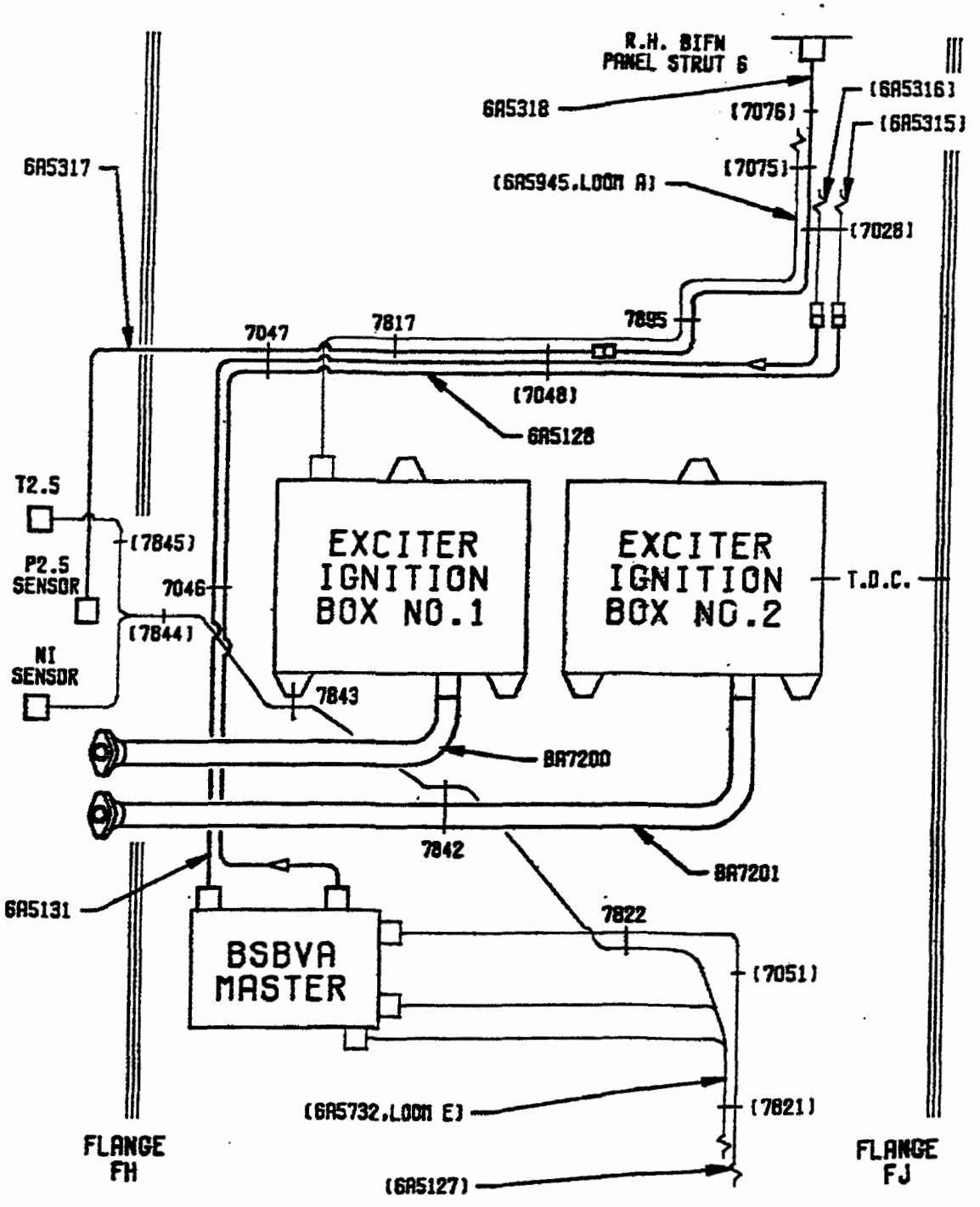
Location of clipping points

Figure 1 (Sheet 1 of 2)



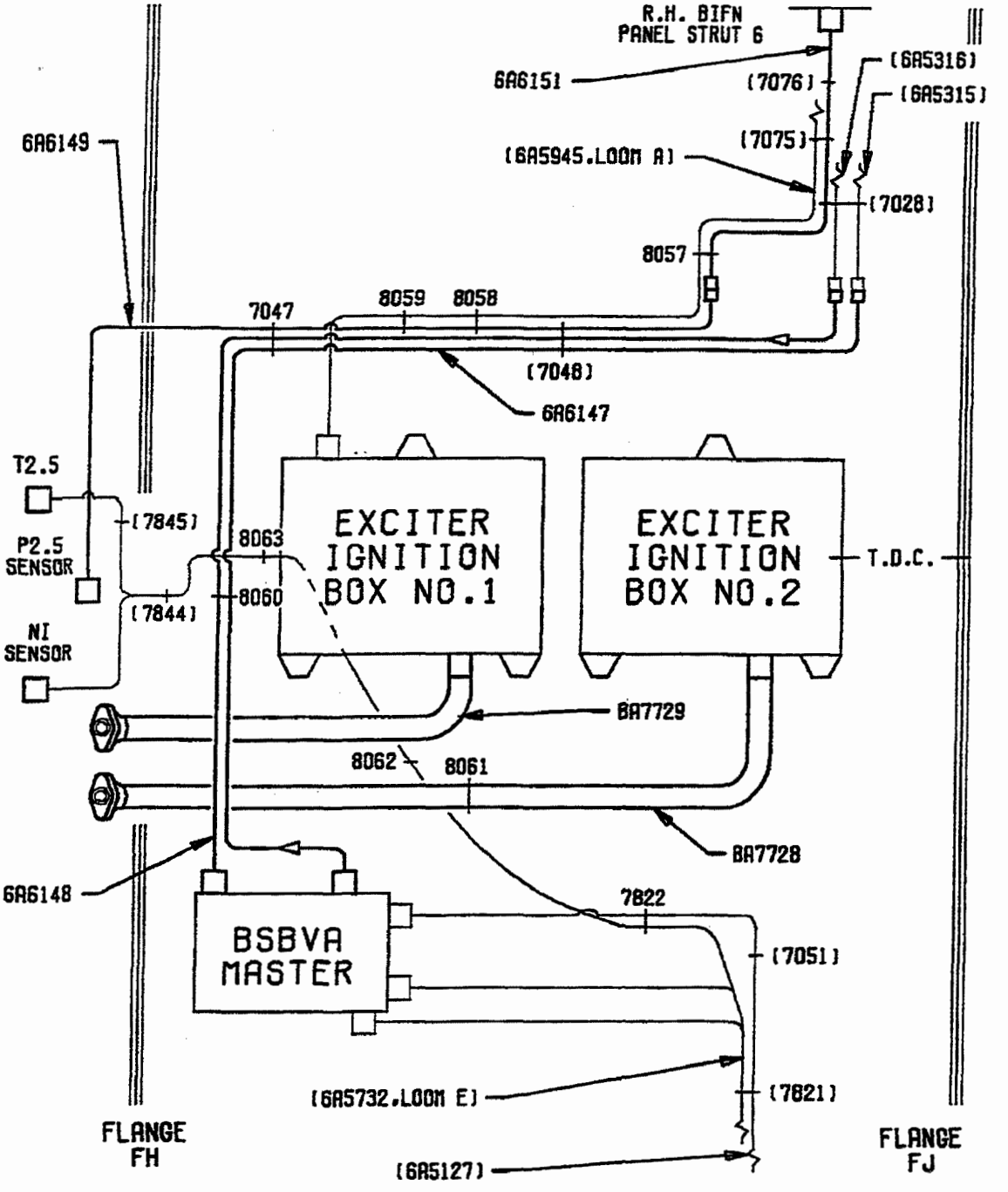
Location of clipping points

Figure 1 (Sheet 2 of 2)



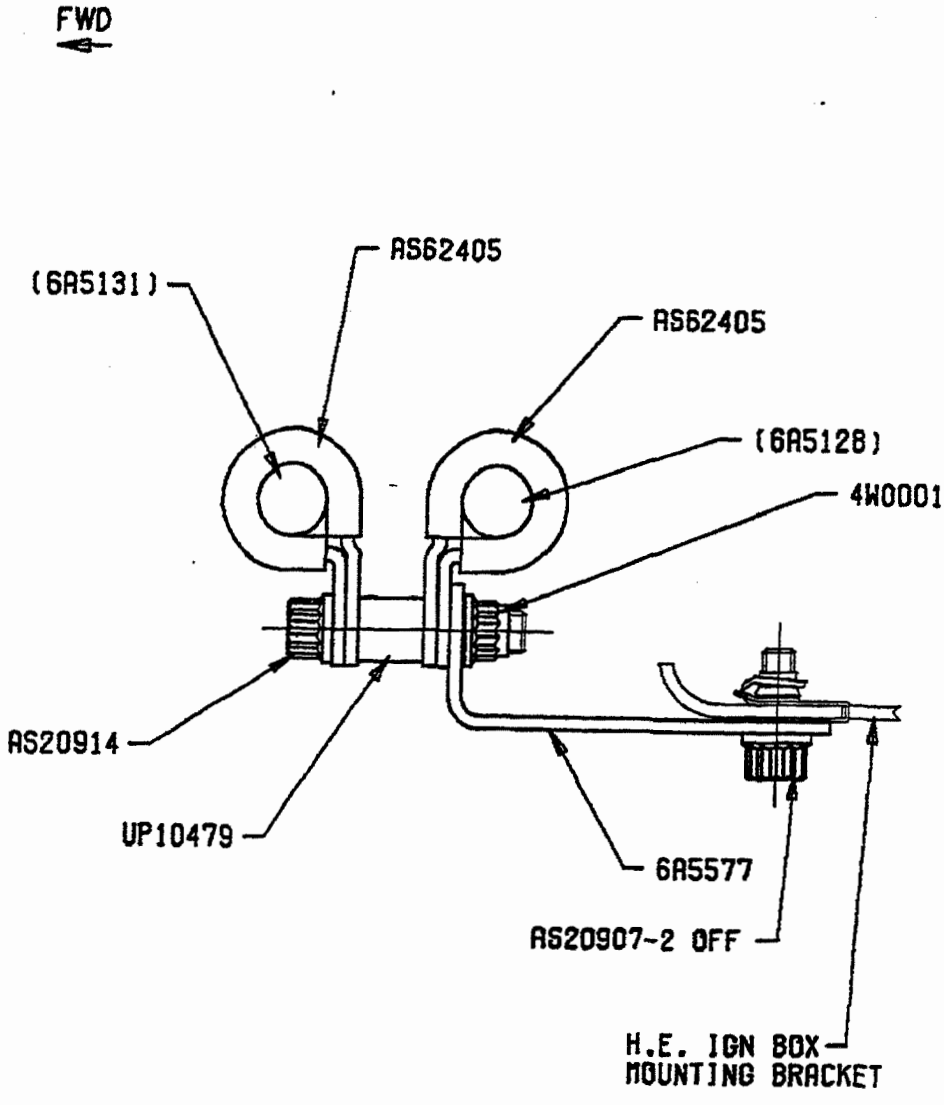
Schematic view on ignition boxes
showing tube and harness runs
- Before alteration

Figure 2



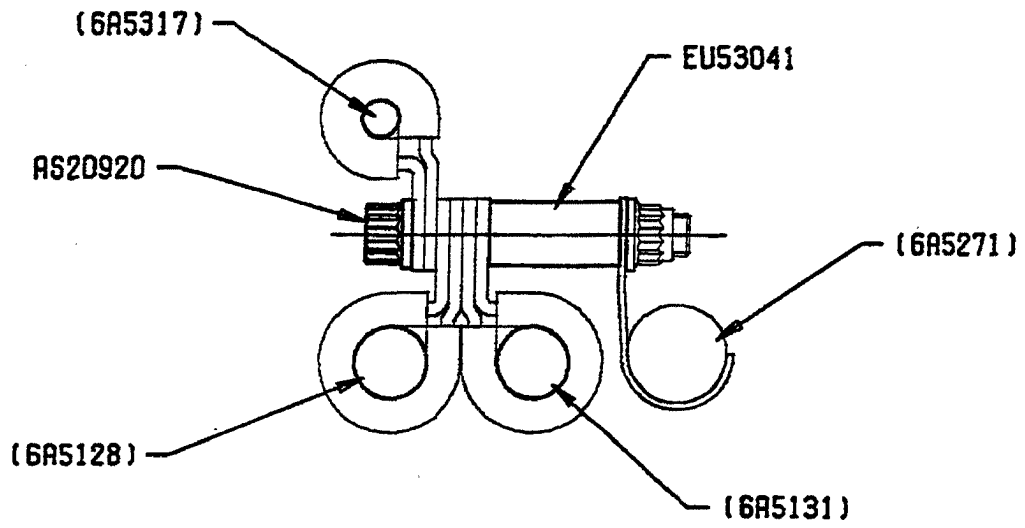
Schematic view on ignition boxes
showing tube and harness runs
- After alteration

Figure 3

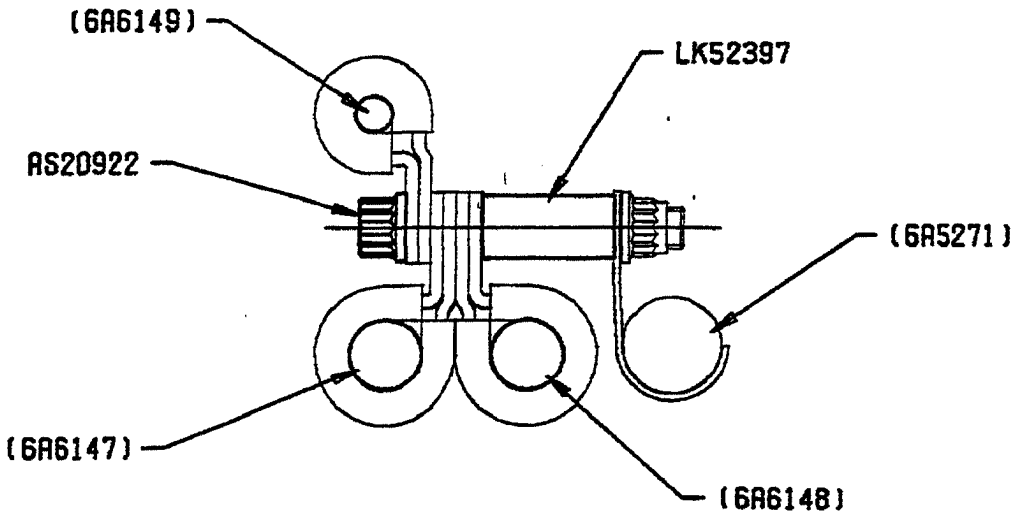


Clipping point 7046
- Deleted

Figure 4



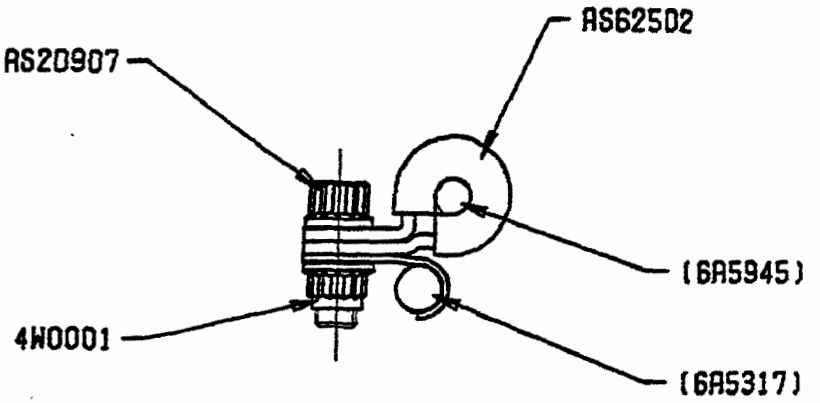
CLIPPING POINT 7047 - BEFORE ALTERATION
LOOKING FORWARDS



CLIPPING POINT 7047 - AFTER ALTERATION
LOOKING FORWARDS

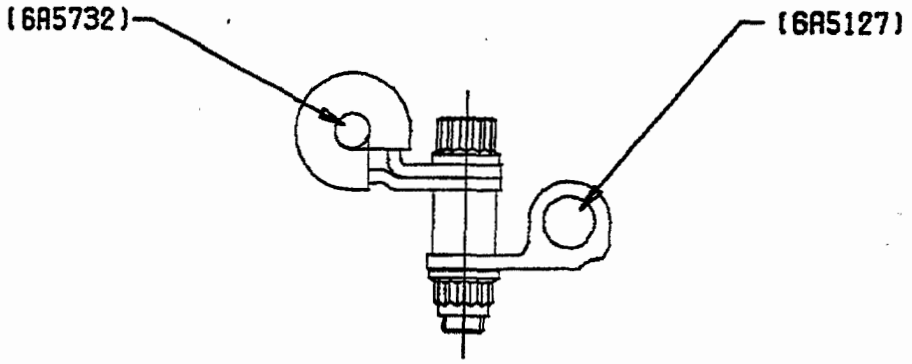
Clipping point 7047
- Before and after alteration
(Looking forwards)

Figure 5

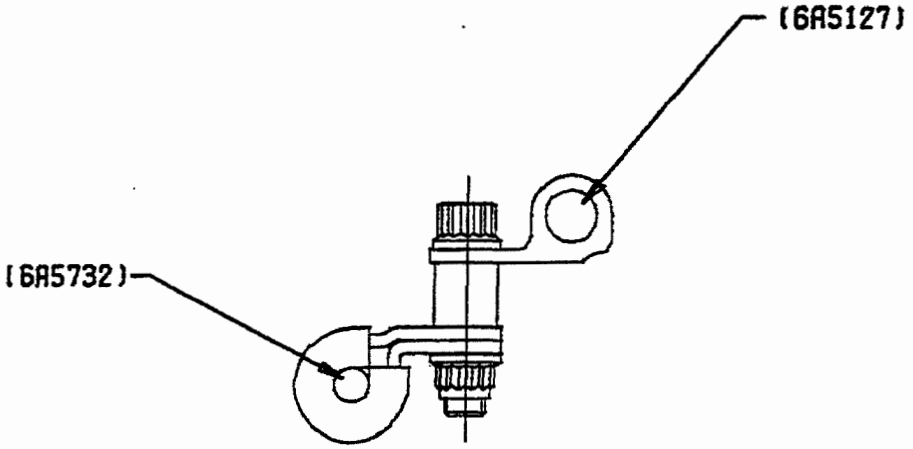


Clipping point 7817
- Deleted (Looking rearwards)

Figure 6



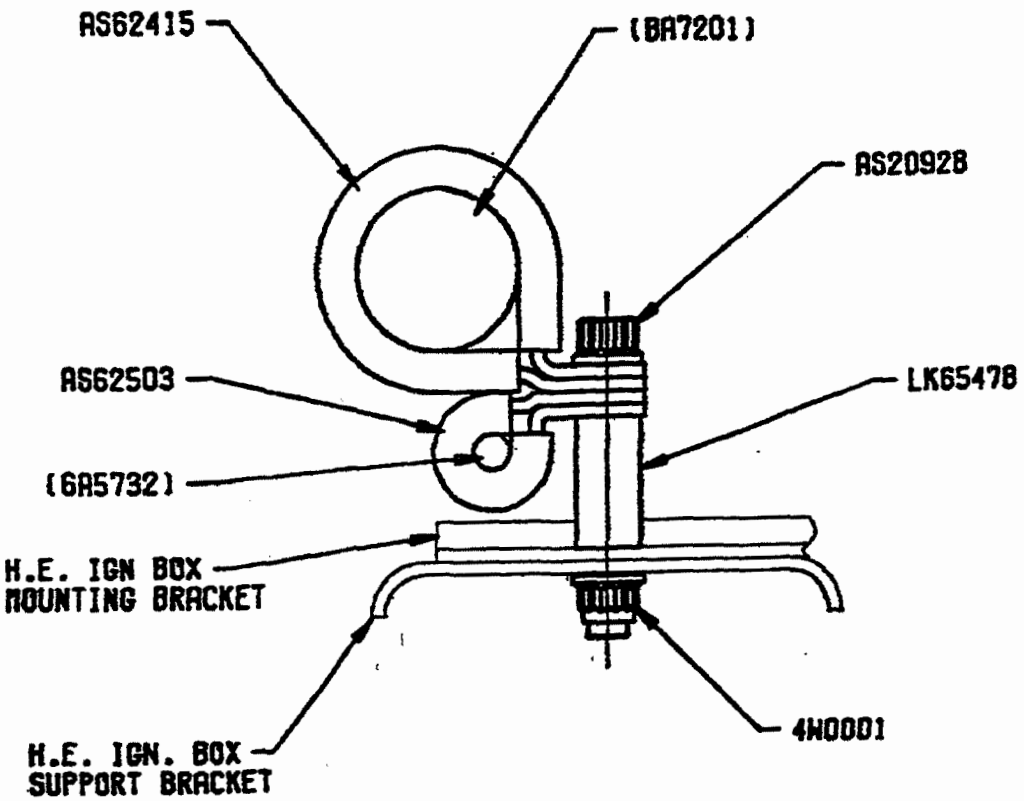
CLIPPING POINT 7822
BEFORE ALTERATION
LOOKING FORWARDS



CLIPPING POINT 7822
AFTER ALTERATION
LOOKING FORWARDS

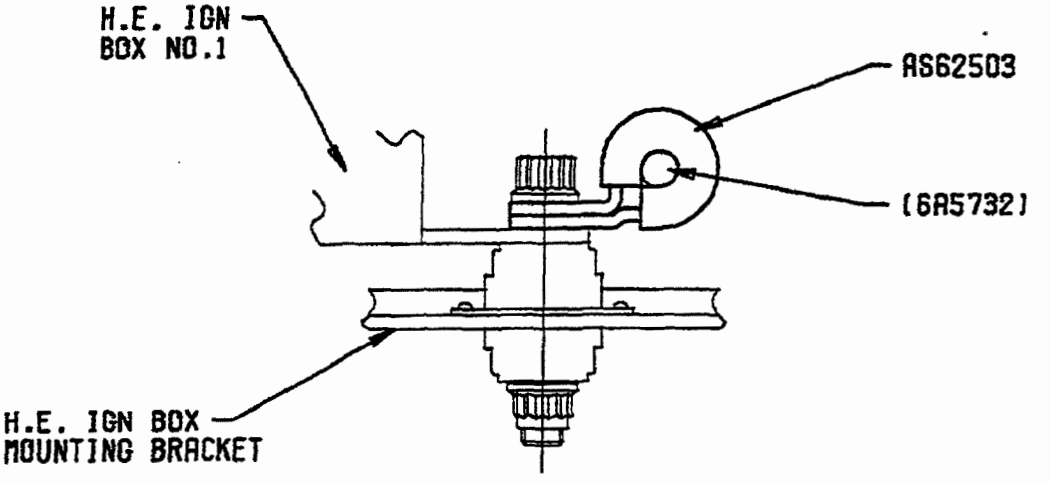
Clipping point 7822
- Before and after alteration
(Looking forwards)

Figure 7

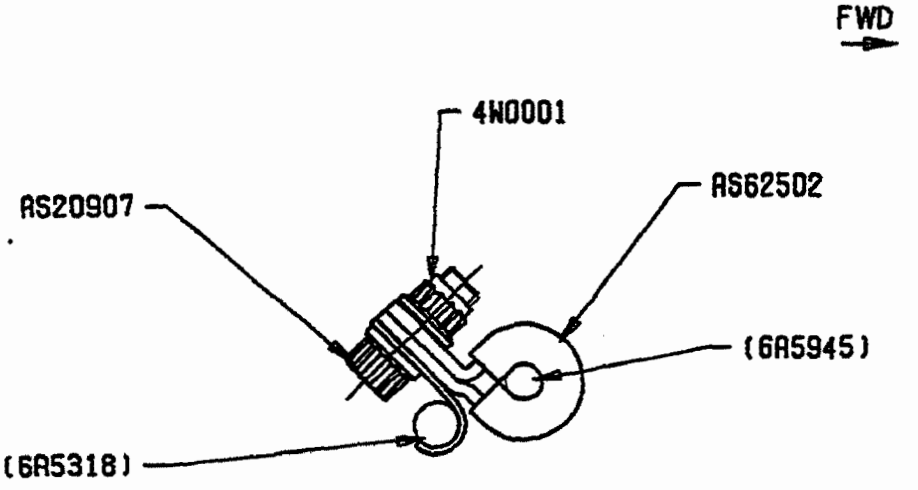


Clipping point 7842
- Deleted (Looking forwards)

Figure 8



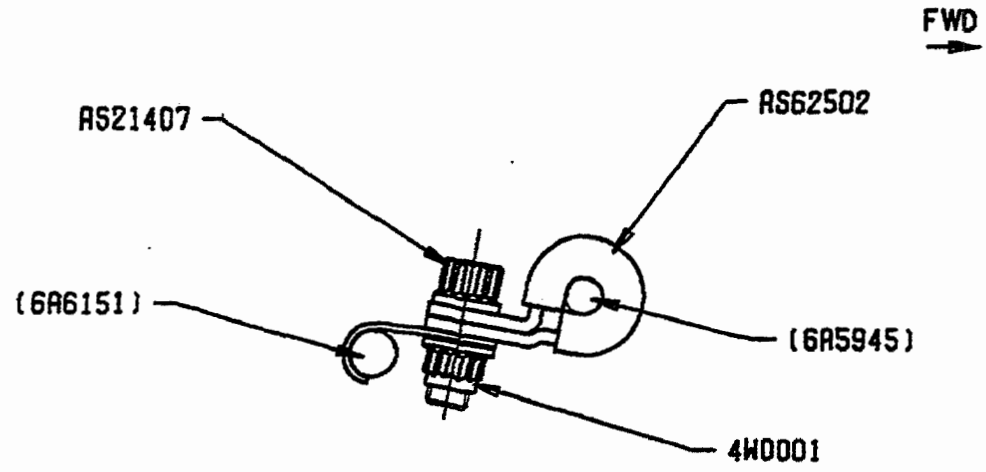
CLIPPING POINT 7843 - DELETED
LOOKING REARWARDS



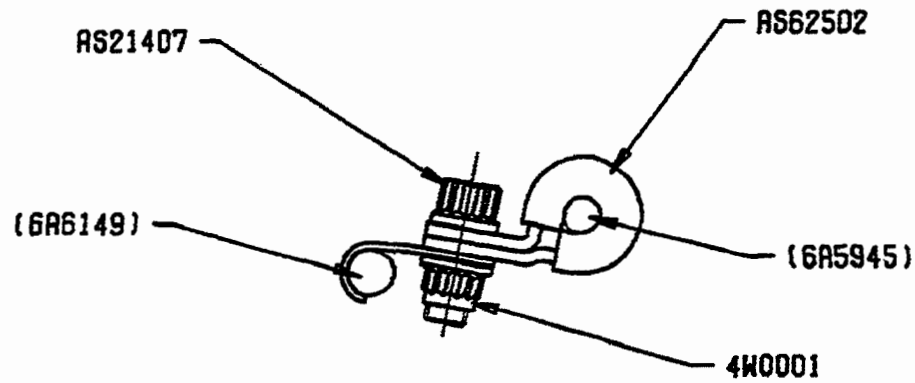
CLIPPING POINT 7895 - DELETED

Clipping points 7843 and 7895
- Deleted

Figure 9.



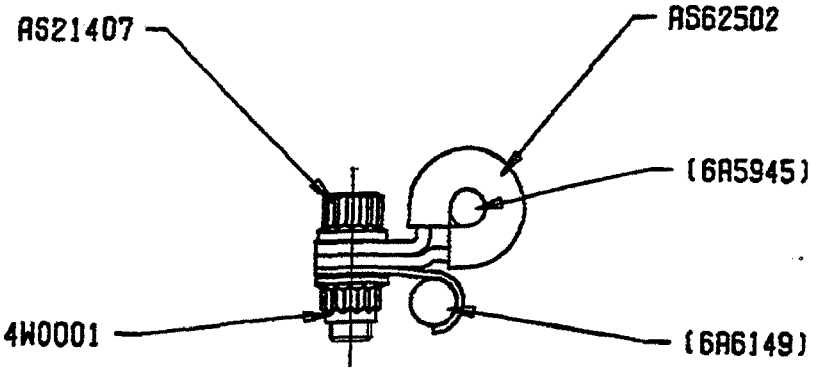
CLIPPING POINT 8057 - ADDED



CLIPPING POINT 8058 - ADDED
LOOKING FORWARD

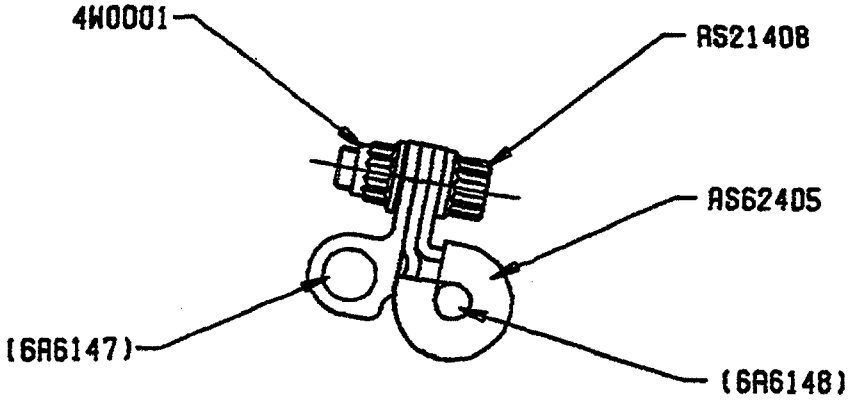
Clipping points 8057 and 8058
- Added

Figure 10



CLIPPING POINT 8059 - ADDED
LOOKING REARWARDS

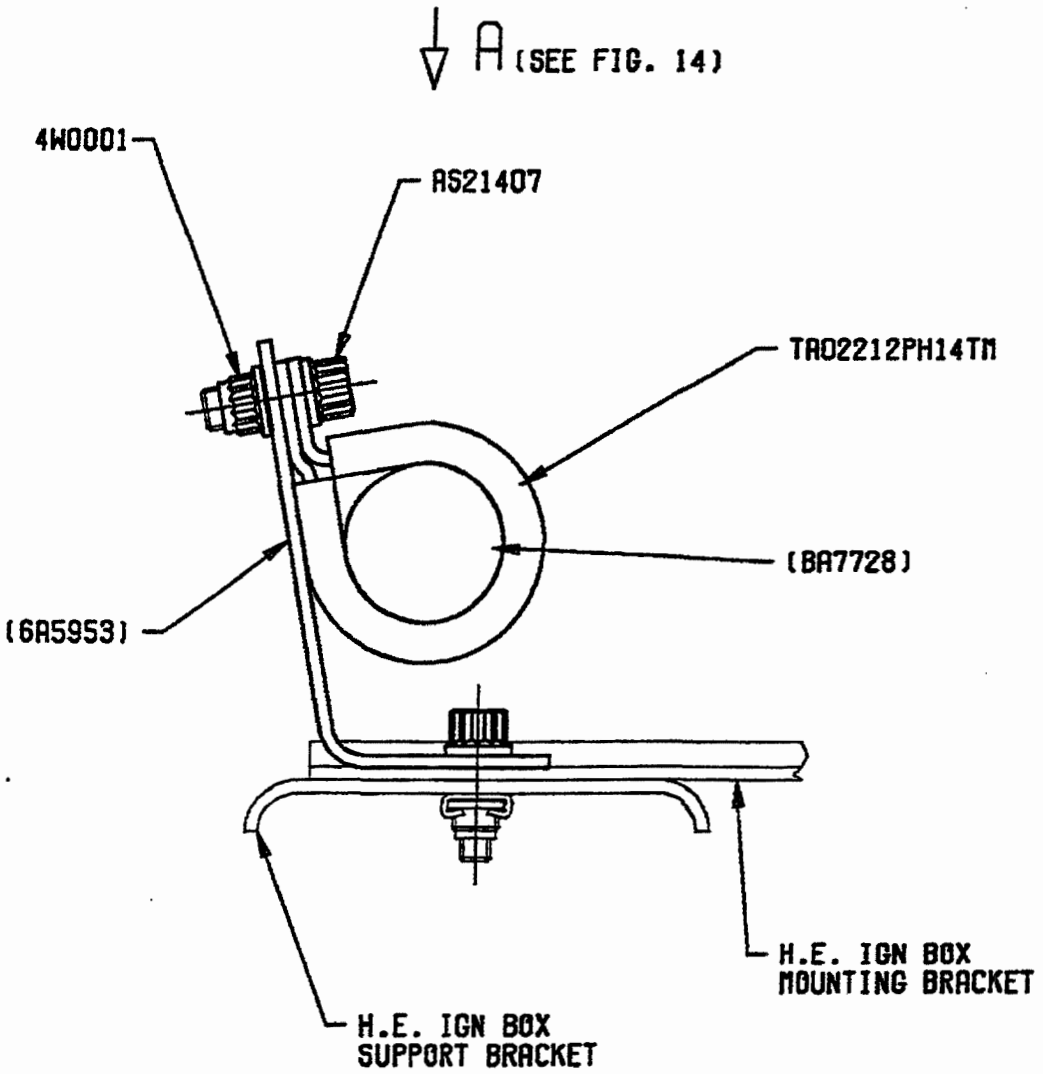
FWD



CLIPPING POINT 8060 - ADDED

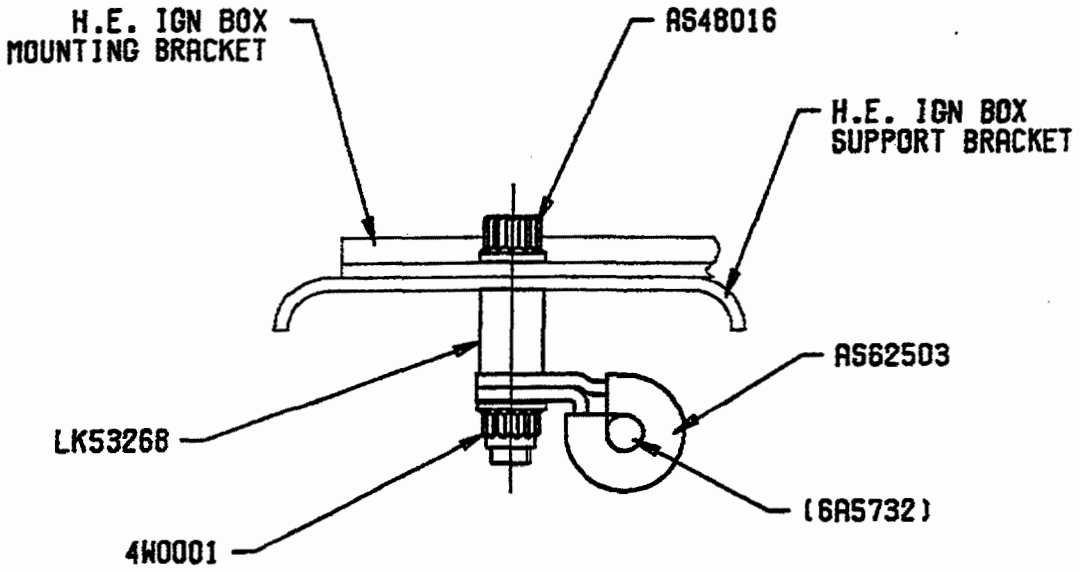
Clipping points 8059 and 8060
- Added

Figure 11

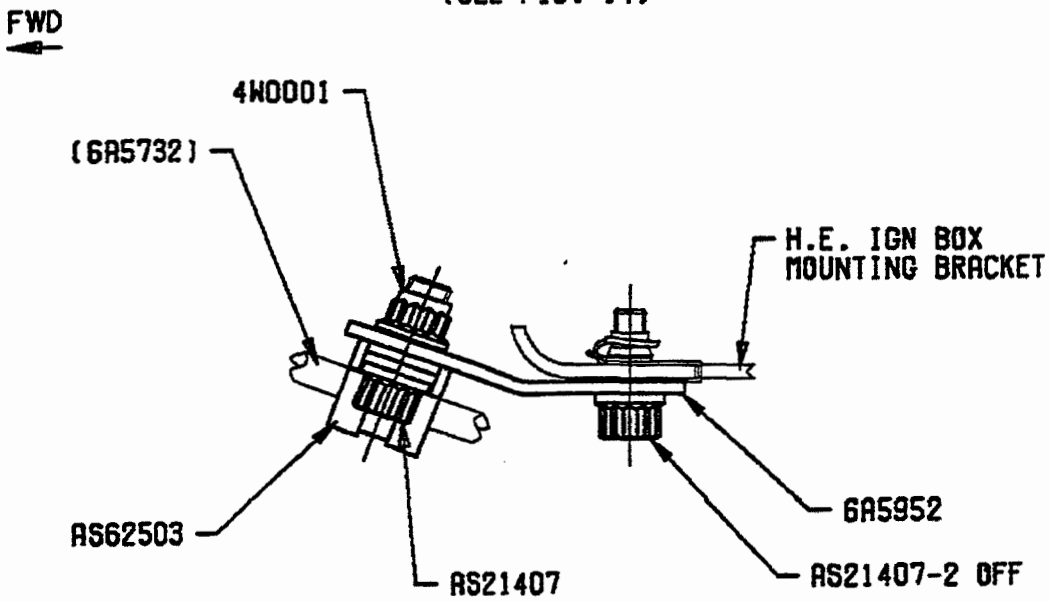


Clipping point 8061 (See Figure 14) looking forwads - Added

Figure 12



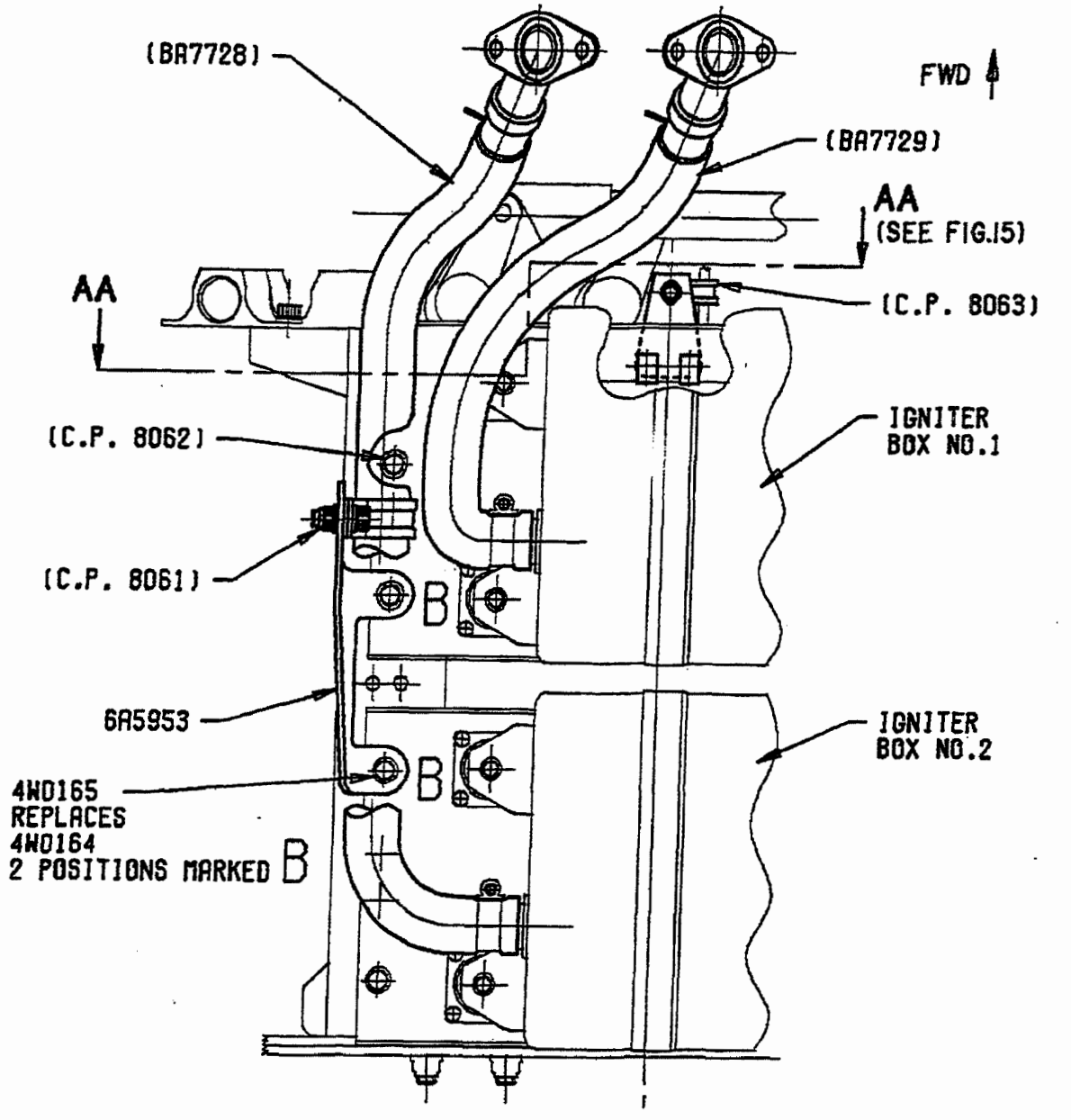
CLIPPING POINT 8062 - ADDED
LOOKING FORWARDS
(SEE FIG. 14)



CLIPPING POINT 8063 - ADDED
(SEE FIG. 14)

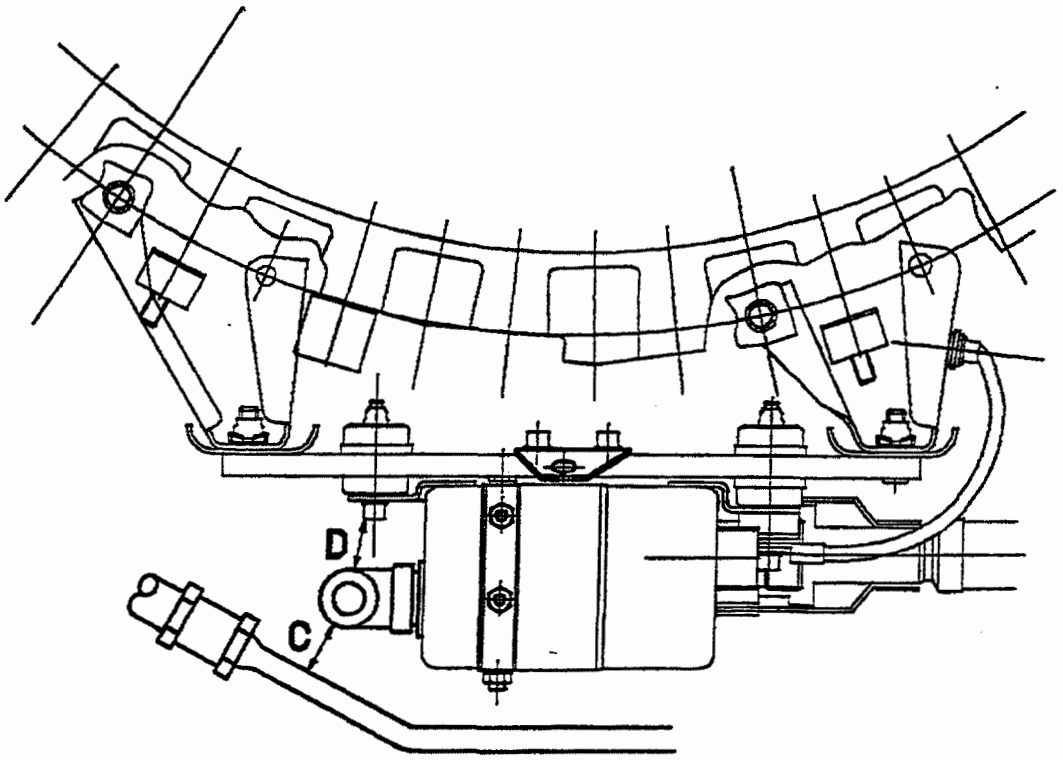
Clipping points 8062 and 8063 (See Figure 14) - Added

Figure 13



View on arrow A (See Figure 12) showing clipping points at igniter boxes

Figure 14



PART VIEW ON SECTION AA (SEE FIG.14)
SHOWING POSITION OF IGNITER COOLING AIR HOSE
AFTER ALTERATION

NOTE: COOLING HOSE TO THE FORWARD IGNITOR BOX IS TO BE ADJUSTED AT THE COOLING BOX INTERFACE SUCH THAT WHEN FITTED, EQUAL CLEARANCE IS ACHIEVED BETWEEN THE IGNITOR BOX SECURING BOLT AND THE BSBVA SERVO SUPPLY TUBE.

Part view on section AA showing position
of igniter cooling air hose
- After Alteration

Figure 15

3. Material Information

Applicability: For each V2500 Engine to incorporate this Bulletin.

A. Kits associated with this Bulletin:

None

B. Parts affected by this Bulletin:

New Part No. (ATA No.)	Qty	Est'd Unit Price ($)	Keyword		Old Part No. (IPC No.)	Instructions Disposition
- (71-51-51)	1	-	Bolt	)))	AS20907 (01-897)	(B)(1D)(S2)
- (71-51-51)	1	-	Clamp	)CP7895))	AS62502 (01-900)	(B)(1D)(S2)
- (71-51-51)	1	-	Nut	))	4W0001 (01-904)	(B)(1D)(S2)
- (71-51-51)	1	-	Bolt	)))	AS20907 (01-913)	(B)(1D)(S2)
- (71-51-51)	1	-	Clamp	)CP7817))	AS62502 (01-916)	(B)(1D)(S2)
- (71-51-51)	1	-	Nut	))	4W0001 (01-920)	(B)(1D)(S2)
AS21407 (71-51-51)	1	4.32	Bolt	)))	- (02-217)	(A)(C)(S2)
AS62502 (71-51-51)	1	7.68	Clamp	)CP8057))	- (02-220)	(A)(C)(S2)
4W0001 (71-51-51)	1	2.41	Nut	))	- (02-224)	(A)(C)(S2)
AS21407 (71-51-51)	1	4.32	Bolt	)))	- (02-225)	(A)(C)(S2)
AS62502 (71-51-51)	1	7.68	Clamp	)CP8058))	- (02-228)	(A)(C)(S2)
4W0001 (71-51-51)	1	2.41	Nut	))	- (02-232)	(A)(C)(S2)

New Part No. (ATA No.)	Qty	Est'd Unit Price ($)	Keyword		Old Part No. (IPC No.)	Instructions Disposition
AS21407 (71-51-51)	1	4.32	Bolt	)))	- (02-233)	(A)(C)(S2)
AS62502 (71-51-51)	1	7.68	Clamp	)CP8059))	- (02-236)	(A)(C)(S2)
4W0001 (71-51-51)	1	2.41	Nut	))	- (02-240)	(A)(C)(S2)
- (71-52-51)	1	-	Bolt	)))	AS20928 (01-183)	(B)(1D)(S2)
- (71-52-51)	1	-	Clamp	)CP7842))	AS62503 (01-188)	(B)(1D)(S2)
- (71-52-51)	1	-	Spacer	)))	LK65478 (01-190)	(B)(1D)(S2)
- (71-52-51)	1	-	Nut	))	4W0001 (01-192)	(B)(1D)(S2)
- (71-52-51)	1	-	Bolt	)))	AS21424 (01-193)	(B)(E)(S2)
- (71-52-51)	1	-	Clamp	)CP7843))	AS62503 (01-196)	(B)(1D)(S2)
- (71-52-51)	1	-	Nut	))	4W0001 (01-200)	(B)(F)(S2)
AS48016 (71-52-51)	1	2.32	Bolt	)))	- (01-685)	(A)(C)(S2)
AS62503 (71-52-51)	1	7.79	Clamp	)CP8062))	- (01-688)	(A)(C)(S2)
LK53268 (71-52-51)	1	11.50	Spacer	)))	- (01-690)	(A)(C)(S2)
4W0001 (71-52-51)	1	2.41	Nut	))	- (01-692)	(A)(C)(S2)

New Part No. (ATA No.)	Qty	Est'd Unit Price ($)	Keyword		Old Part No. (IPC No.)	Instructions Disposition
AS21407 (71-52-51)	1	4.32	Bolt	)))	- (01-693)	(A)(C)(S2)
AS62503 (71-52-51)	1	7.79	Clamp	)CP8063))	- (01-696)	(A)(C)(S2)
4W0001 (71-52-51)	1	2.41	Nut	))	- (01-700)	(A)(C)(S2)
6A6147 (73-11-49)	1	956.00	Tube A/O		6A5128 (14-100)	(A)(B)(S2)
- (73-11-49)	1	-	Bolt	)))	AS20914 (14-125)	(B)(1D)(S2)
- (73-11-49)	1	-	Clamp	)))	AS62405 (14-128)	(B)(1D)(S2)
- (73-11-49)	1	-	Spacer	)CP7046))	UP10479 (14-130)	(B)(1D)(S2)
- (73-11-49)	1	-	Nut	))	4W0001 (14-132)	(B)(1D)(S2)
AS20922 (73-11-49)	1	3.26	Bolt	)))CP7047	AS20920 (14-133)	(A)(B)(1D) (S1)(S2)
LK52397 (73-11-49)	1	8.20	Spacer	))	EU53041 (14-138)	(A)(B)(1D) (S1)(S2)
- (73-11-49)	1	-	Bracket	)))	6A5577 (14-180)	(B)(1D)(S2)
- (73-11-49)	2	-	Bolt	)CP7046))	AS20907 (14-182)	(B)(1D)(S2)
- (73-11-49)	2	-	Nut, clip	))	AS41104 (14-184)	(B)(J)(S2)
6A6148 (73-11-49)	1	462.00	Tube A/O		6A5131 (15-300)	(A)(B)(S1) (S2)
- (73-11-49)	1	-	Clamp	CP7046	AS62405 (15-344)	(B)(1D)(S2)

New Part No. (ATA No.)	Qty	Est'd Unit Price ($)	Keyword		Old Part No. (IPC No.)	Instructions Disposition
AS21408 (73-11-49)	1	4.20	Bolt	)))	- (15-349)	(A)(C)(S2)
AS62405 (73-11-49)	1	19.40	Clamp	)CP8060))	- (15-352)	(A)(C)(S2)
4W0001 (73-11-49)	1	2.41	Nut	))	- (15-356)	(A)(C)(S2)
6A6149 (73-22-49)	1	333.00	Tube A/O		6A5317 (09-100)	(A)(B)(S1) (S2)
6A6151 (73-22-49)	1	430.00	Tube A/O		6A5318 (09-500)	(A)(B)(S1) (S2)
AS21424 (74-11-38)	1	6.06	Bolt		- (01-130)	(2D)(C)(G) (S2)
4W0001 (74-11-38)	1	2.41	Nut		- (01-145)	(3D)(C)(H) (S2)
- (74-11-38)	1	-	Bolt		4W0164 (01-210)	(4D)(1D) (S2)
- (74-11-38)	1	-	Bolt		4W0164 (01-610)	(4D)(1D) (S2)
6A5952 (74-11-38)	1	156.00	Bracket	)))	- (01-950)	(A)(C)(S2)
AS21407 (74-11-38)	2	4.32	Bolt	)CP8063))	- (01-952)	(A)(C)(S2)
AS41104 (74-11-38)	2	2.24	Nut, clip	))	- (01-954)	(C)(K)(S2)
6A5953 (74-11-38)	1	230.00	Bracket	)))CP8061	- (01-960)	(A)(C)(S2)
4W0165 (74-11-38)	2	4.96	Bolt	))	- (01-962)	(A)(C)(S2)
BA7729 (75-27-49)	1	412.00	Flexi-hose		BA7200 (01-100)	(A)(B)(S1) (S2)

New Part No. (ATA No.)	Qty	Est'd Unit Price ($)	Keyword		Old Part No. (IPC No.)	Instructions Disposition
- (75-27-49)	1	-	Clamp	)CP7842)	AS62415 (01-528)	(B)(1D)(S2)
AS21407 (75-27-49)	1	4.32	Bolt	)))	- (01-545)	(A)(C)(S2)
TA02212 PH14TM (75-27-49)	1	180.00	Clamp	)CP8061)))	- (01-548)	(A)(C)(S2)
4W0001 (75-27-49)	1	2.41	Nut	))	- (01-552)	(A)(C)(S2)
BA7728 (75-27-49)	1	482.00	Flexi-hose		BA7201 (01-500)	(A)(B)(S1) (S2)

C. Instructions/Disposition Code Statements:

(A) New part currently available
(B) Old part will no longer be available
(C) Additional part
(1D) Old part may be used up at other locations
(2D) Quantity increased from 1 to 2
(3D) Quantity increased from 2 to 3
(4D) Quantity decreased from 4 to 3
(E) Re-itemised (74-11-38, 01-130)
(F) Re-itemised (74-11-38, 01-145)
(G) Re-itemised, was item (71-52-51, 01-193)
(H) Re-itemised, was item (71-52-51, 01-200)
(J) Re-itemised (74-11-38, 01-954)
(K) Re-itemised, was item (73-11-49, 14-184)
(S1) New part may be fitted in place of old part but not vice-versa
(S2) New parts to replace old parts as a set

NOTE: The estimated 1995 unit prices shown are provided for planning purposes only and do not constitute a firm quotation. Consult the IAE Price Catalog or contact IAE's Spare Parts Sales Department for information concerning firm prices.