STARTING - INTRODUCTION OF A STARTER INCORPORATING IMPROVED CLAMPING OF THE TURBINE ASSEMBLY (L7), INCREASED OIL FLOW (L9) AND ADDITIONAL OVERFLOW TUBE (L10) - CATEGORY CODE 6 - MOD.ENG-80-0005

1. Planning Information

A. Effectivity

(1) Aircraft: Airbus A320

(2) Engine: V2500 Engines prior to Serial No.V0123

B. Reason

(1) Condition

Investigation into low oil levels in the pneumatic starter has revealed the following conditions:

(a) The torque on the turbine pinion nut was found to have relaxed in service. This can lead to loss of axial pre-load on the bearing cartridge and carbon seal affecting its sealing capabilities.

(b) The oil flow through the turbine bearings is insufficient for optimum cooling and lubrication.

(c) Excessive differential pressure across the turbine carbon seal at the beginning of the start cycle can result in low seal cavity pressure and hence effect its sealing capabilities.

(d) Use of the oil overflow port during routine servicing of the unit will confirm quantity of oil added.

(2) Objective

Incorporation of this Service Bulletin is designed to maintain unit reliability.

(4) Substantiation

The changes recommended in this Service Bulletin have been shown by extensive satisfactory rig testing to alleviate the problem.

(5) Effects of Service Bulletin on workshop procedures

None

(5) Supplemental Information

See Sumitomo Service Bulletin 80-2504, 80-2505 or 80-2506 for any detailed rework procedure.

C. Description

(1) The modifications contained in the Sumitomo Service Bulletins 80-2504, 80-2505 and 80-2506 introduces a new pneumatic starter incorporating improved clamping on the turbine assembly (L7), increased oil flow and vented deflector plate (L9) and correct length overflow tube (L10). (The overflow plug is instructed as a maintenance spare following the introduction of the correct length overflow tube).

(2) This Service Bulletin is in three parts as follows:

Part 1 of Service Bulletin (Sumitomo 80-2505)
Part 2 of Service Bulletin (Sumitomo 80-2504)
Part 3 of Service Bulletin (Sumitomo 80-2506)

(3) Units incorporating this Service Bulletin will be identified by endorsement of the mod. plate as follows:

Part 1 of Service Bulletin Identified as L7
Part 2 of Service Bulletin Identified as L9
Part 3 of Service Bulletin Identified as L10

D. Approval

The content of this Service Bulletin is covered by an Airbus Modification No.22406 which is under D.G.A.C. (Direction Generale de l'Aviation Civile - Paris) approval.

E. Compliance

Category Code 6

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

F. References

(1) Internal Reference No.

EC89VR058

(2) Other references

The A320 Aircraft Maintenance Manual.

Sumitomo Service Bulletins 80-2504, 80-2505, 80-2506

G. Other Publications Affected

(1) 80-13-41, Vendor Component Maintenance Manual.

(2) The A320 Aircraft Maintenance Manual, 12-13-80, Servicing.

Printed in Great Britain

2. Accomplishment Instructions

A. Incorporate the intent of the Sumitomo Service Bulletins:

(1) Service Bulletin 80-2505 (Part 1 of Service Bulletin)

(2) Service Bulletin 80-2504 (Part 2 of Service Bulletin)

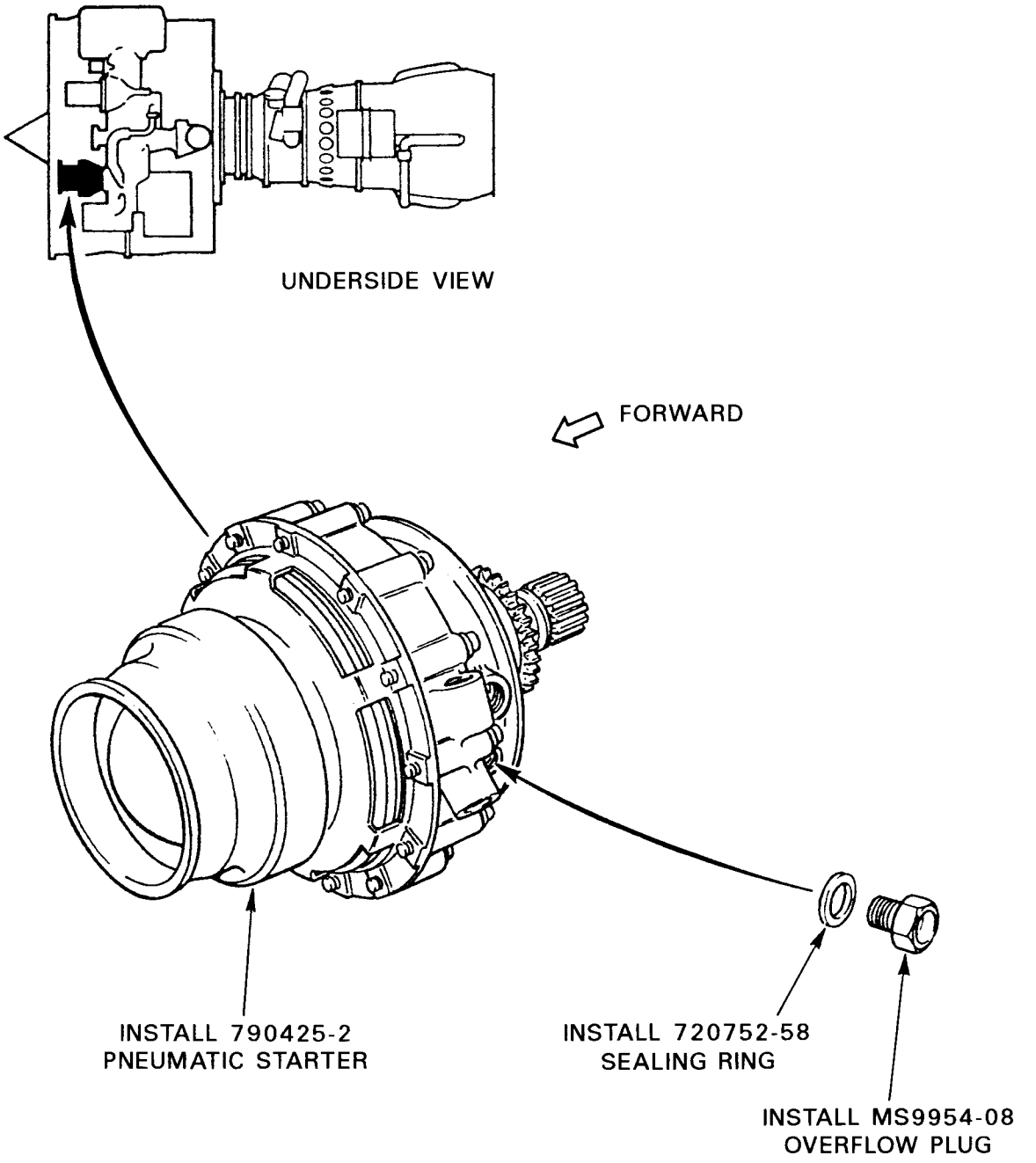
(3) Service Bulletin 80-2506 (Part 3 of Service Bulletin)

B. For information to re-identify the unit refer to I.C.(3).

NOTE: Each part of this Service Bulletin can be incorporated independently, it is recommended however, they should be fitted as a full set.

C. Recording Instructions

(1) A record of accomplishment is necessary.



Location of Pneumatic Starter
Fig.1

3. Material Information

New Part No. (ATA No.)	Qty	Est'd Unit Price ($)	Keyword	Old Part No. (IPC No.)	Instructions Disposition
Applicability: For each V2500 Engine to incorporate this Bulletin.					
A. Kits associated with this Bulletin					
None					
B. Parts affected by this Bulletin					
790425-2 (80-13-41)	1	*	Starter, pneumatic	- (01200)	(2)(A)
720752-58 (80-13-41)	1	*	Ring, sealing	- (01318)	(1)
MS9954-08 (80-13-41)	1	22.40	Plug, overflow	- (01320)	(1)

*Contact supply vendor for price information

C. Instructions/Disposition Code Statements:

(1) Existing item introduced to Engine Manual for maintenance purposes.
(2) Old and new parts are freely and fully interchangeable, see 1.C.(2) and (3).
(A) New part currently available.

NOTE: The estimated 1991 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.

SERVICE BULLETIN

CIRCULATE PROMPTLY

STARTING - PNEUMATIC STARTER - IMPROVED
OIL FLOW/OIL SEALING SYSTEM

1. Planning Information

A. Effectivity

Pneumatic Starters PN 790425-2 Not Incorporating SPP Stock List Numbers	Serial Number of First Production Incorporation
L9	Not available at time of publication.

B. Reason

This product improvement bulletin improves the effectiveness of the starter's lubrication system by increasing oil flow to the turbine rotor shaft bearings. In addition, the possibility of oil leakage occurring past the rotor balancing assembly carbon seal is reduced through a rework to the exhaust deflector.

C. Description

The gear cage and inserts, rotor balancing assembly bearing spacer, and exhaust deflector are reworked and the rotor balancing assembly bearing sleeve is replaced.

D. Compliance

Accomplish at next suitable maintenance activity which affords access to affected parts.

E. Approval

This Service Bulletin 80-2504 (IAE SB V2500-ENG-80-0005) was technically agreed by IAE on April 18, 1991. The content of this Service Bulletin is covered by an Airbus modification No. 22406 which is under DGAC (Direction Generale De L'Aviation Civile-Paris) Approval.

F. Manpower

Additional man-hours required to accomplish this bulletin at component maintenance are as follows:

(1) 4.0 man-hours to rework bearing spacer PN 797632-1 to PN 767632-2.

(2) 2.4 man-hours to rework exhaust deflector PN 792995-2 to PN 792995-3.

(3) 3.8 man-hours to rework gear cage and inserts PN 738138-5 to PN 738138-102.

G. Material - Cost and Availability

The new parts required to accomplish this modification are listed in Section 3, Material Information, and are available at the price and lead times indicated. Orders for new or spare parts should be addressed to:

Hamilton Standard Product Services Incorporated
United Technologies Corporation
Attention: Supervisor, Spares Services
V2500 Distribution Products
Mail Stop: 1-2-B13
P.O. Box 2403
Windsor Locks, CT 06096-2403

H. Tooling

None

I. Weight and Balance

None

J. Electrical Load Data

None

K. Reference

Component Maintenance Manual 80-13-41.

L. Other Publications Affected

Component Maintenance Manual 80-13-41.

2. Accomplishment Instructions

A. Modify pneumatic starter PN 790425-2 as follows:

(1) Modify rotor balancing assembly PN 797652-2 to PN 797652-3 as follows:

(a) Replace bearing sleeve PN 740801-4 with bearing sleeve PN 740801-5.

(b) Modify two bearing spacers PN 797632-1 to PN 797632-2 as follows:

1 Machine four additional 0.210 to 0.216 inch diameter holes, locating these holes equally spaced from existing four holes for a total of eight equally spaced holes as shown in Figure 1.

2 Break edges 0.025 inch (MAX) on ID and OD of drilled holes.

3 Reidentify modified bearing spacers PN 797632-1 to PN 797632-2 by bagging or tagging as PN 797632-2. Do not physically mark part number on spacers.

(c) Reidentify rotor balancing assembly PN 797652-2 to PN 797652-3 by X'ing out "-2" and marking "-3" adjacent to the existing part number, using electrolytic etch marking method.

(2) Modify exhaust deflector PN 792995-2 to PN 792995-3 as follows:

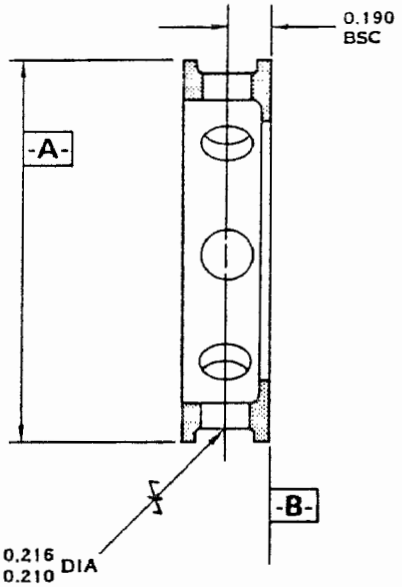
(a) Machine six 0.276 to 0.286 inch diameter holes equally spaced as shown in Figure 2.

(b) Break edges 0.025 inch (MAX) on ID and OD of machined holes.

(c) Reidentify modified exhaust deflector PN 792995-2 to PN 792995-3 by X'ing out "-2" and marking "-3" adjacent to the existing part number, using vibration peen or electrolytic etch marking method.

SUMITOMO PRECISION
PRODUCTS CO., LTD.

SERVICE BULLETIN

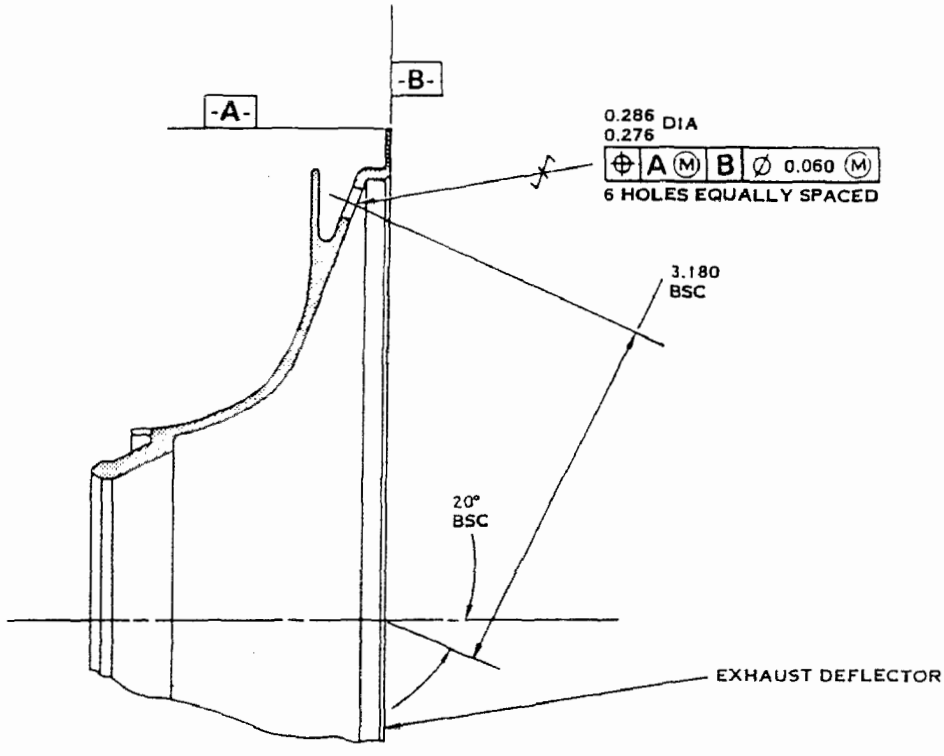


NOTES:
1. SYMBOLS PER ANSI Y14.5
2. DIMENSIONS IN INCHES
3. BREAK EDGES 0.025 INCH MAX ON ID AND OD OF MACHINED HOLES
4. MATERIAL: AMS5630
5. HARDNESS: 53 TO 58 HRC

11-21973

Modification of Bearing Spacer
Figure 1

SERVICE BULLETIN



NOTES:
1. SYMBOLS PER ANSI Y14.5
2. DIMENSIONS IN INCHES
3. BREAK EDGES 0.025 INCH MAX ON ID AND OD OF MACHINED HOLES
4. MATERIAL: AMS5616
5. HARDNESS: 32-38HRC

11-21974

Modification of Exhaust Deflector
Figure 2

(3) Modify gear cage and inserts PN 738138-5 to PN 738138-102 as follows:

(a) Machine two 0.150 to 0.170 inch diameter holes as shown in section D-D, Figure 3 (Sheet 1 of 2).

(b) Machine a 0.290 to 0.310 inch wide groove using a 0.990 to 1.010 inch diameter cutter as shown in view E, section H-H, Figure 3 (Sheet 2).

(c) Break edges 0.025 inch (MAX) on ID and OD of machined holes and edges of machined groove.

(d) Coat rework surfaces with dichromate per AMS2475.

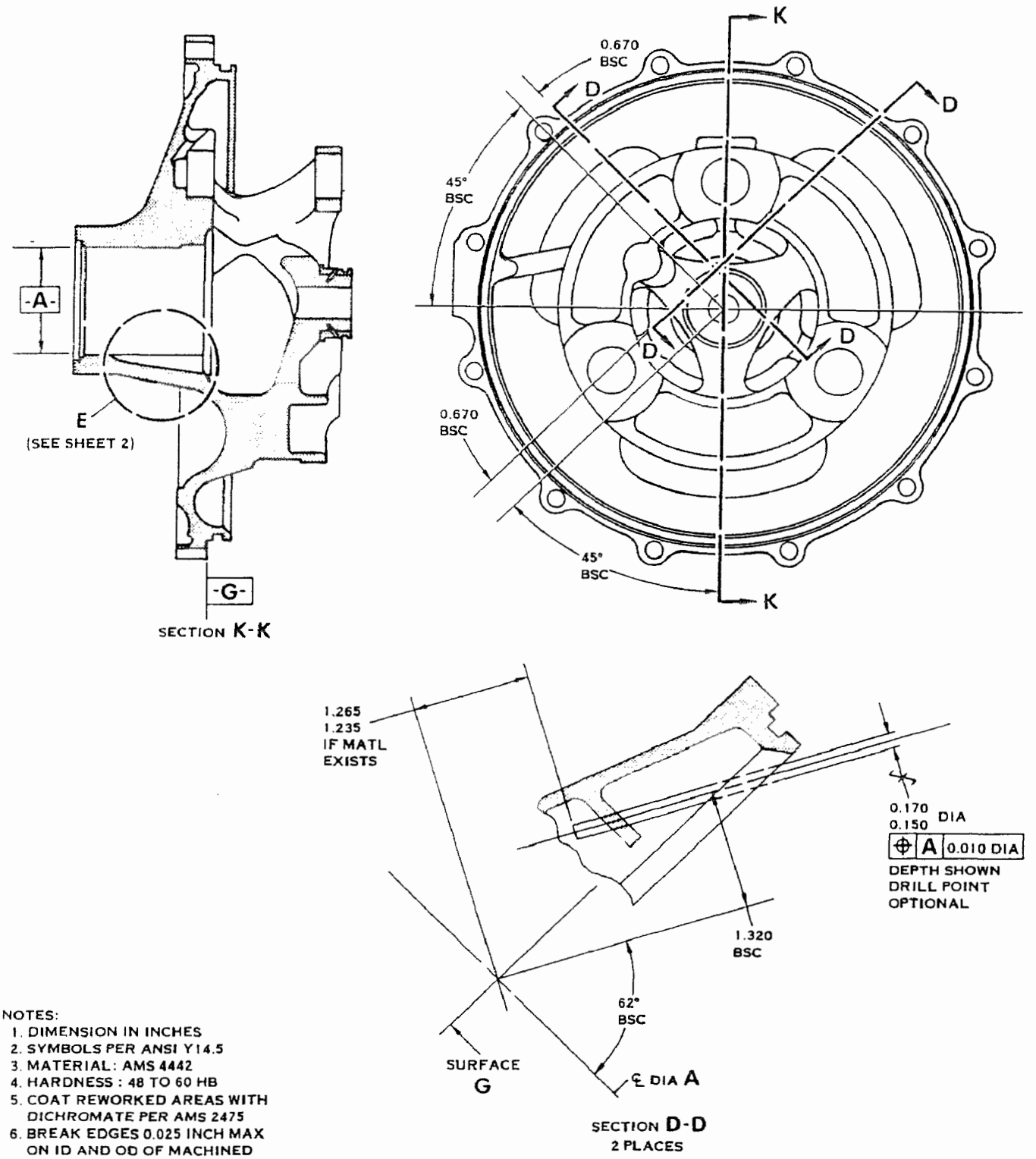
(e) Reidentify modified gear cage and inserts PN 738138-5 to PN 738138-102 by X'ing out "-5" and marking "-102" adjacent to existing part number, using shallow impression marking method.

(4) Assemble and test pneumatic starter in accordance with existing component maintenance manual.

B. Reidentification

Incorporation of this bulletin is identified by Sumitomo Precision Products Co. LTD. (SPP) stock list number. Reidentify modified pneumatic starters PN 790425-2 by including "L9" on units identification plate. The Sumitomo Precision Products Col, LTD. (SPP) part number is not affected by this bulletin.

SERVICE BULLETIN

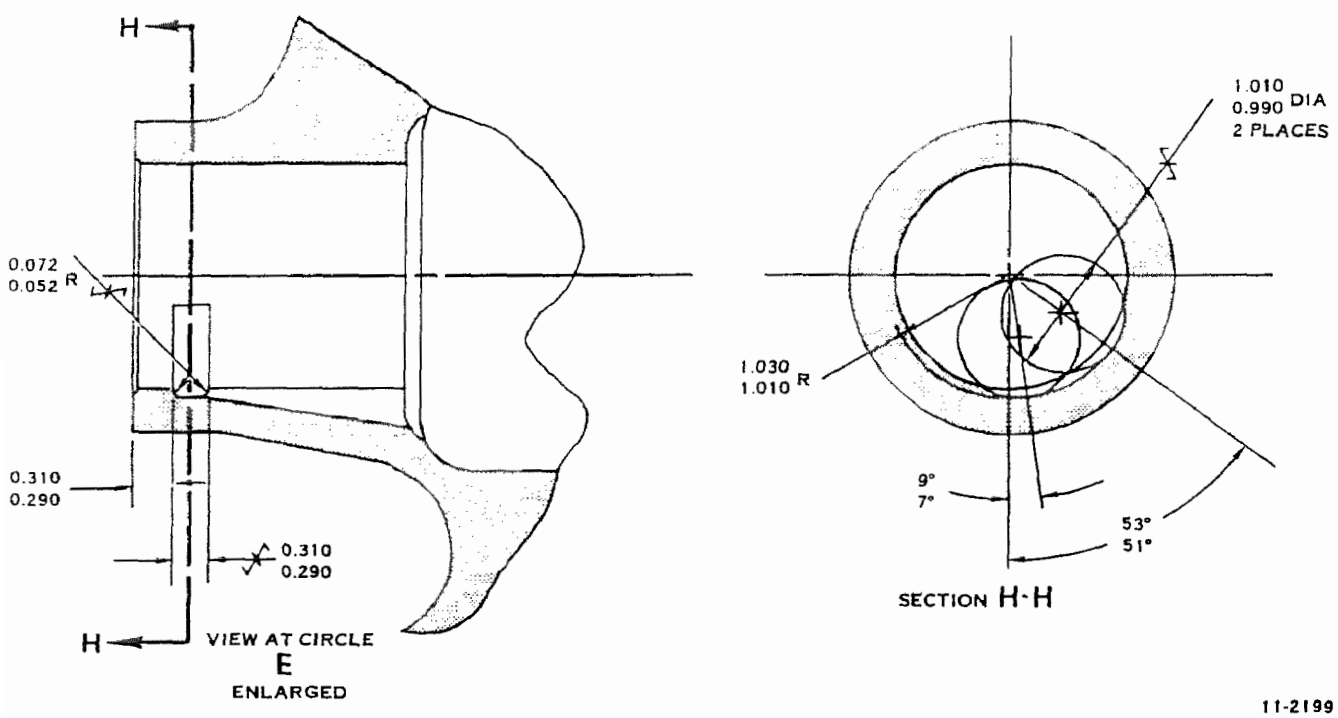


NOTES:
1. DIMENSION IN INCHES
2. SYMBOLS PER ANSI Y14.5
3. MATERIAL: AMS 4442
4. HARDNESS : 48 TO 60 HB
5. COAT REWORKED AREAS WITH DICHROMATE PER AMS 2475
6. BREAK EDGES 0.025 INCH MAX ON ID AND OD OF MACHINED HOLES AND EDGES OF MACHINED GROOVE

15-21975

Modification of Gear Cage and Inserts
Figure 3 (Sheet 1 of 2)

SERVICE BULLETIN



Modification of Gear Cage and Inserts
Figure 3 (Sheet 2)

3. Material Information

The basis for the following data is per pneumatic starter. Any prices shown herein are the net prices F.O.B. Hamilton Standard, One Hamilton Road, Windsor Locks, CT 06096-1010 in effect as of date of bulletin and are based on the condition that United Technologies Corporation's Standard Terms and Conditions of Sale pertaining to commercial contracts in effect when the order is accepted will apply. These prices are firm subject to ninety days notice of change, except that corrections, additions, or deletions shall be effective immediately and in the event prices for these parts are included in a related general parts price list, prices shown in such parts price list shall be deemed to have superseded the prices shown herein on the effective date of such price list. Quantities ordered must be in accordance with the specified Minimum Sales Quantity (MSQ) or multiples thereof. Lead times listed herein apply to all orders placed for modification parts, are based on the number of days from acceptance of order, and are subject to change without notice. Lead times for parts ordered as replenishment for inventory will be established in accordance with Hamilton Standard's current product support policy. The maintenance/overhaul factors (M/OH) shown are estimated replacement percentages for the individual parts based on 100 maintenance actions (usage between overhauls) and 100 overhauls, respectively. These estimated factors are furnished for your convenience and they shall not constitute either representations or guarantees.

NOTE: The tabulation below includes code numbers in the "Instructions/Disposition" column identified as "I/D Code". These code numbers designate the following dispositions.

1. Added Part
2. Scrap Part
3. Rework and Reidentify Part
4. Use for Other Applications

A. New Parts Required

New PN	Qty	Unit Price	Lead Time	M/OH	MSQ	Nomenclature	Old PN	I/D Code
740801-5	1	293.00	30	-/-	001	Bearing Sleeve	740801-4*	2

B. Parts to be Reworked and Reidentified

New PN	Qty	Unit Price	Lead Time	M/OH	MSQ	Nomenclature	Old PN	I/D Code
797632-2	2	50.40	30	-/-	001	Bearing Spacer	797632-1*	3
738138-102	1	2991.00	30	-/-	001	Gear Cage and Inserts	738138-5*	3
792995-3	1	1310.00	30	-/-	001	Exhaust Deflector	792995-2*	3
797652-3	1	-	-	-/-	001	Rotor Balancing Assembly	797652-2*	3

*Spares for superseded parts will not be maintained by Hamilton Standard Product Services.

Hamilton Standard Internal Reference Number
Hamilton Standard Internal Identification Number 80-2504

SERVICE BULLETIN

CIRCULATE PROMPTLY

STARTING - PNEUMATIC STARTER - MODIFICATION OF ROTOR BALANCING ASSEMBLY

1. Planning Information

A. Effectivity

Pneumatic Starters PN 790425-2 Not Incorporating SPP Stock List Number	Serial Number of First Production Incorporation
L7	Not available at time of publication

B. Reason

This product improvement bulletin improves retention nut clamping force on the turbine rotor stack-up.

C. Description

The headless straight pin and retention nut are replaced and additional selection of solid shims are added.

D. Compliance

Accomplish at next suitable maintenance activity which affords access to affected parts.

E. Approval

This Service Bulletin 80-2505 (IAE SB V2500-ENG-80-0005) was technically agreed by IAE on April 18, 1991. The content of this Service Bulletin is covered by an Airbus modification No. 22406 which is under DGAC (Direction Generale De L'Aviation Civile-Paris) Approval.

F. Manpower

No additional man-hours are required to perform this bulletin during component maintenance.

G. Material - Cost and Availability

The new parts required to accomplish this modification are listed in Section 3, Material Information, and are available at the price and lead times indicated. Orders for new or spare parts should be addressed to:

Hamilton Standard Product Service Incorporated
United Technologies Corporation
Attention: Supervisor, Spares Services
V2500 Distribution Products
Mail Stop: 1-2-B13
P.O. Box 2403
Windsor Locks, CT 06096-1010

H. Tooling

None

I. Weight and Balance

None

J. Electrical Load Data

None

K. Reference

Component Maintenance Manual 80-13-41

L. Other Publications Affected

Component Maintenance Manual 80-13-41

2. Accomplishment Instructions

A. Modify pneumatic starter PN 790425-2 as follows:

(1) Replace headless straight pin, PN 69474A3-12 and retention nut, PN 730565-5 on rotor balancing assembly, PN 797652-2 with headless straight pin, PN 732224-1 and retention nut, PN 730565-6.

(2) Add solid shims, PN 732110-261 thru -264.

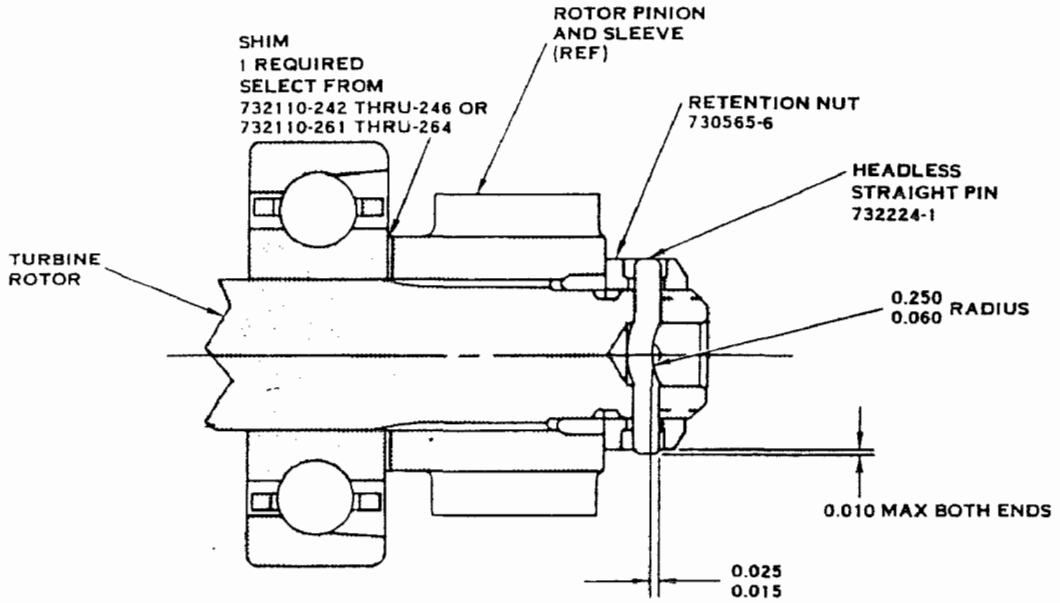
(3) Assemble rotor balancing assembly in accordance with existing component maintenance manual and the following additional instructions.

(a) Install one new solid shim, PN 732110-264 on turbine rotor as shown in Figure 1.

WARNING: LUBRICATING OIL, MIL-L-23699 AND MIL-L-7808 ARE SLIGHTLY TOXIC TO EYES, SKIN AND RESPIRATORY TRACT. EYE AND SKIN PROTECTION REQUIRED. GOOD GENERAL VENTILATION IS NORMALLY ADEQUATE.

(b) Apply lubricating oil, MIL-L-23699 or MIL-L-7808 on threads of new retention nut, PN 730565-6.

(c) Install retention nut on turbine rotor so the word "OUT" is visible. Tighten nut to a torque of 250 to 300 pound-inches.



DIMENSIONS IN INCHES

11-21966

Pin Installation Deformation Dimensions
Figure 1

(d) Determine alignment of retention nut on turbine rotor in accordance with new Table 1.

TABLE 1
ALIGNMENT OF RETENTION NUT LOCK

WHEN MISALIGNMENT IS	COMPLETE RETENTION NUT INSTALLATION AS FOLLOWS: MINIMUM TORQUE 250 POUND-INCHES	MAXIMUM TORQUE (POUND-INCHES)
0°	Install Pin	300
1° to 5°	Rotate clockwise - Install pin	350
6° to 15°	Replace shim, PN 732110-264 with new shim, PN 732110-263	350
16° to 25°	Replace shim, PN 732110-264 with new shim, PN 732110-262	350
26° to 35°	Replace shim, PN 732110-264 with new shim, PN 732110-261	350
36° to 45°	Replace shim, PN 732110-264 with shim, PN 732110-246	350
46° to 55°	Replace shim, PN 732110-264 with shim, PN 732110-245	350
56° to 65°	Replace shim, PN 732110-264 with shim, PN 732110-244	350
66° to 75°	Replace shim, PN 732110-264 with shim, PN 732110-243	350
76° to 84°	Replace shim, PN 732110-264 with shim, PN 732110-242	350

(e) Leak test and rebalance rotor balancing assembly in accordance with existing component maintenance manual instructions.

(f) Install new headless straight pin, PN 732224-1. Crimp as shown in Figure 1.

B. Reidentification

Incorporation of this bulletin is identified by Sumitomo Precision Products Co. Ltd. (SPP) stock list number. Reidentify modified units by including "L7" on units identification plate. The Sumitomo Precision Products Co., Ltd. (SPP) part number is not affected by this bulletin.

3. Material Information

The basis for the following data is per pneumatic starter. Any prices shown herein are the net prices F.O.B. Hamilton Standard, One Hamilton Road, Windsor Locks, CT 06096-1010 in effect as of date of bulletin and are based on the condition that United Technologies Corporation's Standard Terms and Conditions of Sale pertaining to commercial contracts in effect when the order is accepted will apply. These prices are firm subject to ninety days notice of change, except that corrections, additions, or deletions shall be effective immediately and in the event prices for these parts are included in a related general parts price list, prices shown in such parts price list shall be deemed to have superseded the prices shown herein on the effective date of such price list. Quantities ordered must be in accordance with the specified Minimum Sales Quantity (MSQ) or multiples thereof. Lead times listed herein apply to all orders placed for modification parts, are based on the number of days from acceptance of order, and are subject to change without notice. Lead times for parts ordered as replenishment for inventory will be established in accordance with Hamilton Standard's current product support policy. The maintenance/overhaul factors (M/OH) shown are estimated replacement percentages for the individual parts based on 100 maintenance actions (usage between overhauls) and 100 overhauls, respectively. These estimated factors are furnished for your convenience and they shall not constitute either representations or guarantees.

NOTE: The tabulation below includes code numbers in the "Instructions/Disposition" column identified as "I/D Code". These code numbers designate the following dispositions.

1. Added Part
2. Scrap Part
3. Rework and Reidentify Part
4. Use for Other Applications

A. New Parts Required

New PN	Qty	Unit Price	Lead Time	M/OH	MSQ	Nomenclature	Old PN	I/D Code
732224-1	1	5.60	30	-/-	001	Headless Straight Pin	69474A3-12*	2
730565-6	1	33.60	30	-/-	001	Retention Nut	730565-5*	2
732110-261**	1	3.60	30	-/-	001	Solid Shim	-	1
732110-262**	1	3.60	30	-/-	001	Solid Shim	-	1
732110-263**	1	3.60	30	-/-	001	Solid Shim	-	1
732110-264**	1	3.60	30	-/-	001	Solid Shim	-	1

* Spares for superseded parts will not be maintained by Hamilton Standard Product Services

** Only one shim is used per unit. Shim to be used is selected during assembly.

Hamilton Standard Internal Reference Number 187964, 190544
Hamilton Standard Internal Identification Number 80-2505

SERVICE BULLETIN

CIRCULATE PROMPTLY

STARTING - PNEUMATIC STARTER - INSTALLATION OF OVERFLOW TUBE AND RETAINING PIN

1. Planning Information

A. Effectivity

NOTE: This bulletin presumes prior compliance with Service Bulletin 80-2503.

Pneumatic Starters PN 790425-2 Not Incorporating SPP Stock List Number	Serial Number of First Production Incorporation
L10	Not available at time of publication

B. Reason

This product improvement bulletin ensures that lubricating oil will flow from the starter's oil overflow port when a level of 12 ounces of oil has been reached during the starter oil servicing procedure, with the overflow port uncapped.

C. Description

The transmission housing is reworked to add an overflow tube and retaining pin to extend the length of the transmission housing's oil overflow passage.

D. Compliance

Accomplish at next suitable maintenance activity which affords access to affected parts.

E. Approval

This Service Bulletin 80-2506 (IAE SB V2500-ENG-80-0005) was technically agreed by IAE on April 18, 1991. The content of this Service Bulletin is covered by an Airbus modification No. 22406 which is under DGAC (Direction Generale De L'Aviation Civile-Paris) Approval.

F. Manpower

An additional 4.9 man-hours are required to perform this bulletin during component maintenance.

G. Material - Cost and Availability

The new parts required to accomplish this modification are listed in Section 3, Material Information, and are available at the price and lead times indicated. Orders for new or spare parts should be addressed to:

Hamilton Standard Product Services Incorporated
United Technologies Corporation
Attention: Supervisor, Spares Services
V2500 Distribution Products
Mail Stop: 1-2-B13
P.O. Box 2403
Windsor Locks, CT 06096-2403

H. Tooling

None

I. Weight and Balance

None

J. Electrical Load Data

None

K. Reference

Component Maintenance Manual 80-13-41

L. Other Publications Affected

Component Maintenance Manual 80-13-41

2. Accomplishment Instructions

A. Modify pneumatic starters as follows:

(1) Modify transmission housing PN 738274-100 to PN 738274-101 as follows:

(a) Machine existing 0.245 to 0.255 inch diameter hole in transmission housing to 0.2564 to 0.2570 inch diameter to depth shown in section A-A, Figure 1.

(b) Break edges 0.025 inch maximum on ID and OD of machined hole.

(c) Coat rework surface with dichromate per AMS2475.

WARNING: WEAR PROTECTIVE GLOVES WHEN HANDLING HEATED OR CHILLED PARTS TO AVOID SEVERE BURNS.

(d) Heat transmission housing to 275 to 325 °F and maintain for 1 to 2 hours or chill tubing PN SK114728-10 to -275 to -325 °F.

(e) Install tubing into housing until slotted end is at 1.540 to 1.660 inch depth shown in section A-A, Figure 1.

(f) Allow parts to return to room temperature.

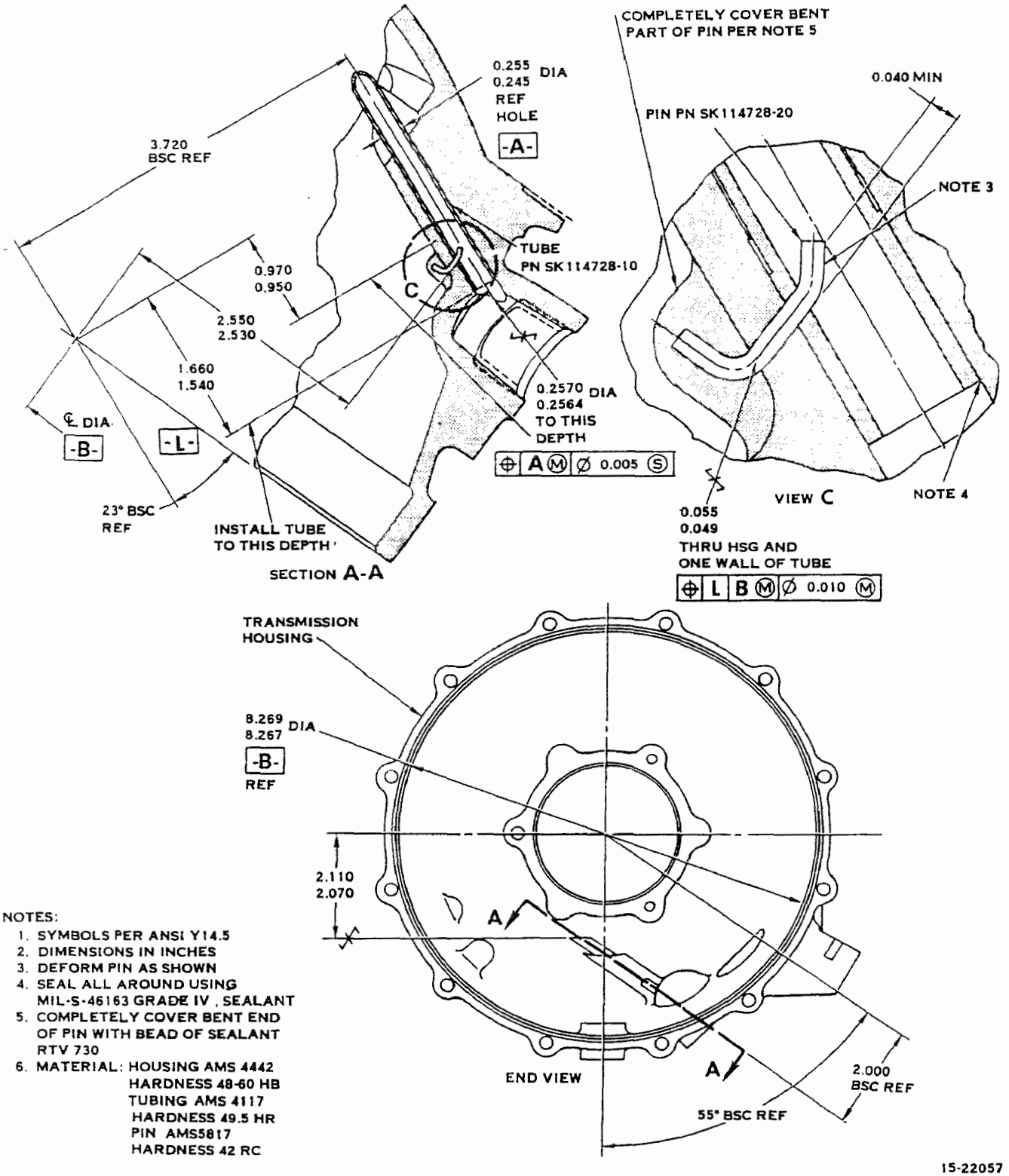
WARNING: PRIMER MIL-S-22473, GRADE N, IS FLAMMABLE AND TOXIC TO EYES, SKIN, AND RESPIRATORY TRACT. SKIN/EYE PROTECTION REQUIRED. AVOID REPEATED/ PROLONGED CONTACT. GOOD GENERAL VENTILATION IS NORMALLY ADEQUATE.

(g) Prime all around end of tubing where it protrudes through the transmission housing using Primer MIL-S-22473, Grade N, per view C, Figure 1.

WARNING: WEAR PROTECTIVE GLOVES WHEN HANDLING HEATED PARTS TO AVOID SEVERE BURNS.

(h) Apply sealant, MIL-S-46163, Type III, Grade R, all around end of tubing where it protrudes through the transmission housing, view C, Figure 1. Cure at 202 to 222 °F for sufficient time to ensure bondline is at cure temperature for a minimum of 60 minutes. Allow housing to return to room temperature.

SERVICE BULLETIN



NOTES:
1. SYMBOLS PER ANSI Y14.5
2. DIMENSIONS IN INCHES
3. DEFORM PIN AS SHOWN
4. SEAL ALL AROUND USING MIL-S-46163 GRADE IV , SEALANT
5. COMPLETELY COVER BENT END OF PIN WITH BEAD OF SEALANT RTV 730
6. MATERIAL: HOUSING AMS 4442
   HARDNESS 48-60 HB
   TUBING AMS 4117
   HARDNESS 49.5 HR
   PIN AMS5817
   HARDNESS 42 RC

15-22057

Modification of Transmission Housing
Figure 1

SERVICE BULLETIN

(i) Machine 0.049 to 0.055 inch diameter hole through transmission housing and one wall of tubing, per section A-A and view C, Figure 1.

(j) Break edges 0.025 inch maximum on ID and OD of machined hole.

(k) Coat rework surface with dichromate per AMS2475.

(l) Insert pin PN SK114728-20 as shown in view E, Figure 1 and deform end protruding into tube minimum of 0.040 inch.

WARNING: ISOPROPYL ALCOHOL, TT-I-735, GRADE A, IS FLAMMABLE AND TOXIC TO EYES, SKIN, AND RESPIRATORY TRACT. SKIN/EYE PROTECTION REQUIRED. AVOID REPEATED/ ROLONGED CONTACT. GOOD GENERAL VENTILATION IS NORMALLY ADEQUATE.

(m) Solvent degrease end of pin protruding from transmission housing and adjacent housing surface using isopropyl alcohol, TT-I-735, Grade A, and allow to dry.

WARNING: DC 1200 RTV PRIMER (RED) IS FLAMMABLE AND TOXIC TO EYES, SKIN, AND RESPIRATORY TRACT. SKIN/EYE PROTECTION REQUIRED. GOOD GENERAL VENTILATION IS NORMALLY ADEQUATE.

(n) Coat end of pin protruding from housing and adjacent housing surfaces with primer, DC 1200 RTV, and allow to dry.

WARNING: UNCURED RTV 730 SEALANT IRRITATES EYES ON DIRECT CONTACT. EYE PROTECTION REQUIRED. AVOID PROLONGED OR REPEATED SKIN CONTACT. GOOD GENERAL VENTILATION IS NORMALLY ADEQUATE.

(o) Apply a bead of sealant RTV 730 to completely cover bent end of pin protruding from housing per view C, Figure 1. Air cure at room temperature for minimum of 72 hours.

(p) Machine end of tubing to 2.070 to 2.110 inch dimension shown in end view, Figure 1.

(q) Break edges 0.025 inch maximum on ID and OD of machined end of tubing.

(r) Clean tubing of any chips or dirt.

(s) Reidentify transmission housing PN 738274-100 to PN 738274-101 by X'ing out "-100" and adding "-101 (SK114728)" adjacent to existing part number using the vibration peen method.

(2) Assemble and test pneumatic starter in accordance with existing component maintenance manual except fill transmission housing with lubrication oil to overflow tube level.

B. Reidentification

Incorporation of this bulletin is identified by Sumitomo Precision Products Co. LTD. (SPP) stock list number. Reidentify modified pneumatic starters by including "L10" on units identification plate. The Sumitomo Precision Products Co., LTD. (SPP) part number is not affected by this bulletin.

3. Material Information

The basis for the following data is per pneumatic starter. Any prices shown herein are the net prices F.O.B. Hamilton Standard Product Services Incorporated, United Technologies Corporation, P.O. Box 2403, Windsor Locks, CT 06096-2403 in effect as of date of bulletin and are based on the condition that Hamilton Standard Product Services Incorporated's Standard Terms and Conditions of Sale pertaining to commercial contracts in effect when the order is accepted will apply. These prices are firm subject to ninety days notice of change, except that corrections, additions, or deletions shall be effective immediately and in the event prices for these parts are included in a related general parts price list, prices shown in such parts price list shall be deemed to have superseded the prices shown herein on the effective data of such price list. Quantities ordered must be in accordance with the specified Minimum Sales Quantity (MSQ) or multiples thereof. Lead times listed herein apply to all orders placed for modification parts, are based on the number of days from acceptance of order, and are subject to change without notice. Lead times for parts ordered as replenishment for inventory will be established in accordance with Hamilton Standard Product Services current product support policy. The maintenance/overhaul factors (M/OH) shown are estimated replacement percentages for the individual parts based on 100 maintenance actions (usage between overhauls) and 100 overhauls, respectively. These estimated factors are furnished for your convenience and they shall not constitute either representations or guarantees.

SERVICE BULLETIN

NOTE: The tabulation below includes code numbers in the "Instructions/Disposition" column identified as "I/D Code". These code numbers designate the following dispositions.

1. Added Part
2. Scrap Part
3. Rework and Reidentify Part
4. Use for Other Applications

A. New Parts Required for Modification only

New PN	Qty	Unit Price	Lead Time	M/OH	MSQ	Nomenclature	Old PN	I/D Code
SK114728-10	1	51.00	30	-/-	001	Tube	-	1
SK114728-20	1	.60	30	-/-	001	Pin	-	1

B. Parts to be Reworked and Reidentified

New PN	Qty	Unit Price	Lead Time	M/OH	MSQ	Nomenclature	Old PN	I/D Code
738274-101	1	2108.00	30	-/-	001	Transmission Housing	738274-100	3

C. Consumable Materials Required

Nomenclature	Manufacturer or Specification
Sealant	RTV 730
Isopropyl Alcohol	TT-I-735, Grade A

SERVICE BULLETIN

C. Consumable Materials Required (Continued)

Nomenclature	Manufacturer or Specification
Sealant, Grade IV	MIL-S-46163, Type III, Grade R
Primer N	MIL-S-22473, Grade N

* Spares for superseded parts will not be maintained by Hamilton Standard Product Services.

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