Engineering Order

Lufthansa Technik

DEUTSCHE LUFTHANSA AG

Customer	Order	Product	Contractor	EO-Class	EO-Type	EO-Number	Issue	ATA
DLH	IAS 2	W	WF	Aircraft	Information	340636	03	36

Title	Engine Bleed Air Sys Components Interchangeability	
Document References	**Source Document**	ISD: WE22-2013-36-001: 2
	Source Task	01-INF
	Maintenance Task	INF-10170574 (EO 340636)
Maintenance Task Relations	**Label**	**Relation**
	IMPLEMENTS SOURCE DOC.	SIL: 36-050 R: 04 or higher
General Information	**Type of Compliance**	Procedure
	Note	
	Description	The purpose of this ISD is to increase the interchangeability of the Engine Bleed Air System components for DLH A321 Aircrafts.
	Reason for Revision	CRAS deleted from EO; Workpage revised
	AAR related	No
	Mod./Repair Classification	minor
	Airworthiness Approval	LHT Developm. Eng. WE acc. LBA.JA.003
	Approval Document	CRAS 00117108 / 001

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Effectivity

A/C Type
A320

A/C Model	Total	Registration	Serial	Prod.	Line	IPC	Remark
A321-131	20	D-AIRA	00458				
		D-AIRB	00468				
		D-AIRC	00473				
		D-AIRD	00474				
		D-AIRE	00484				
		D-AIRF	00493				
		D-AIRH	00412				
		D-AIRK	00502				
		D-AIRL	00505				
		D-AIRM	00518				
		D-AIRN	00560				
		D-AIRO	00563				
		D-AIRP	00564				
		D-AIRR	00567				
		D-AIRS	00595				
		D-AIRT	00652				
		D-AIRU	00692				
		D-AIRW	00699				
		D-AIRX	00887				
		D-AIRY	00901				
A321-231	43	D-AIDA	04360				
		D-AIDB	04545				
		D-AIDC	04560				
		D-AIDD	04585				
		D-AIDE	04607				
		D-AIDF	04626				
		D-AIDG	04672				
		D-AIDH	04710				
		D-AIDI	04753				
		D-AIDJ	04792				
		D-AIDK	04819				
		D-AIDL	04881				
		D-AIDM	04916				
		D-AIDN	04976				
		D-AIDO	04994				
		D-AIDP	05049				
		D-AIDQ	05028				
		D-AIDT	05087				
		D-AIDU	05186				
		D-AIDV	05413				
		D-AIDW	06415				
		D-AIDX	06451				
		D-AISB	01080				
		D-AISC	01161				
		D-AISD	01188				
		D-AISF	01260				
		D-AISG	01273				
		D-AISH	03265				
		D-AISI	03339				
		D-AISJ	03360				
		D-AISK	03387				
		D-AISL	03434				
		D-AISN	03592				
		D-AISO	03625				
		D-AISP	03864				
		D-AISQ	03936				
		D-AISR	03987				
		D-AIST	04005				
		D-AISU	04016				
		D-AISV	04047				
		D-AISW	04054				
		D-AISX	04073				
		D-AISZ	04085				

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Warranty

Information	No Warranty
Material	
Manhours	
Remarks	

Responsibility/ Contact Information

Role	Dept.	Name	Phone
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	Dept	Name	Phone	Date	Signature
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Approved by	FRAT/FS32S	Vincent Bouchet	+49 69 696 94640	22-JUN-2017	
Customer Approval	not applicable:				

Planning Data

First Accomplishment	**Date**	none	**FH / FC / Days**	none
Repetitive Accomplishment	**Date**	none	**FH / FC / Days**	none
Event	none			
Place of Incorporation	none			
Additional Info	none			
Accomplishment Report	none			
Remarks	none			
Engine Change	none			

Compliance Limit

Material

Information	
Remarks	

Technical Impact

☐ **Interchangeability affected**	none
☐ **Intermixability affected**	none
☐ **Operations / Performance**	none
☐ **Onboard loadable Software affected**	none
☐ **Spares affected**	none
☐ **Labeling after Modification**	none
☐ **Special Tools / Equipment / GSE**	none
☐ **Testflight**	none
☐ **Trainer / Simulator**	none
☐ **Double Inspection**	none
☐ **ETOPS affected**	none
☐ **Electrical Load Analysis (ELA)**	none
☐ **Facility Requirements**	none
☐ **Special Maintenance Staff Required**	none

☐ **Weight Change**	**Moment Change**	**Remark / Position**
none	none	

Affected Documents

Doc. Type	Remarks

EO List of Effective Pages

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*	**	Pages	Issue Date	*	**	Pages	Issue Date
R	E	1-1, 1-2, 1-3	22.06.17				
R	L	1-LEP	22.06.17				
R	E	Page 2 to 8	18.05.17				
A	S	ISD: WE22-2013-36-001: 2	13.06.13				

* A = Added D = Deleted R = Revised

** A = AAR C = Check List E = Engineering Order L = LEP O = Others P = Meeting/Coordination Protocol
R = Approval Doc. S = OEM Source Document W = Economical Evaluation B = LHT Source Document

*	**	Drawings	Issue Date	*	**	Drawings	Issue Date

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A321 – Engine Bleed Air System

Instructions for Engine Bleed Air System Components Interchangeability

This EO has been created to avoid conversions of Bleed Components during Engine Change, if removal Engine and installation Engine have different Bleed Configurations

1. **Bleed Improvement Program (BIP) – different Pipe Assy Routing Standards:**

   a. **Pressure Regulator Valve:** **P/N 6714D070000**
   P/N 6774E010000
   P/N 6774F010000

   As part of the Bleed Improvement Program (BIP) a routing modification has been defined to improve the accessibility to the Pressure Regulating Valve (PRV) sense line connection port on IAE-V2500-A5.
   This modification consists:
   - Installation of a pneumatic sense line (new Pipe Assy routing from HPV to PRV)
   - Introduction of a second pneumatic port on the post BIP PRV
   - Installation of a blanking plug (fitted over the unused port)
   - PRV P/N **6714D070000**, PRV P/N **6774E010000** and PRV P/N **6774F010000** have two ports. One compatible with the pre BIP Pipe Assy Routing and the other with the post BIP Pipe Assy Routing.
   - PRV P/N **6714D070000**, PRV P/N **6774E010000** and PRV P/N **6774F010000** are two-way interchangeable on IAE-V2500 engines

   b. **Pressure Regulator Valve:** **P/N 6774G010000**

   All new delivered A321 aircraft are equipped with the new standard **PRV P/N 6774G010000.** This PRV has only one port and is only compatible with the **post BIP** Pipe Assy routing.
   On A/C side a specific sense line has been added from the PRV up to the pylon for the remote pressure tapping system. In order to recover interchangeability with previous PRV standards, this specific sense line shall be removed.

Today spare engines are delivered from the shop either with pre or post BIP Pipe Assy routing. The full interchangeability and mixability of the IAE engines on the A321 fleet is realizable independently.

In order to enable the installation of any IAE V2500 engine on any DLH A321 A/C, the following instructions have to be obeyed.

2. **Accomplishment Instructions for LHT Engine Bleed Air System Component Interchangeability**

LHT supersedes the PRV interchangeabilities of the A320FAM which are applicable according IPC 36-11-52 and ISI 36.11.00021.
CRAS 00117108/001 approves the usage of the mentioned PRVs and different Pipe Assy Routings on the IAE engines in DLH A321 fleet.

All decisions for different configurations can be made with the Flow Chart

Engineering Order

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a. **Use the Flow Chart to reason possible additional work.**
The written instructions can be found under point “3”.

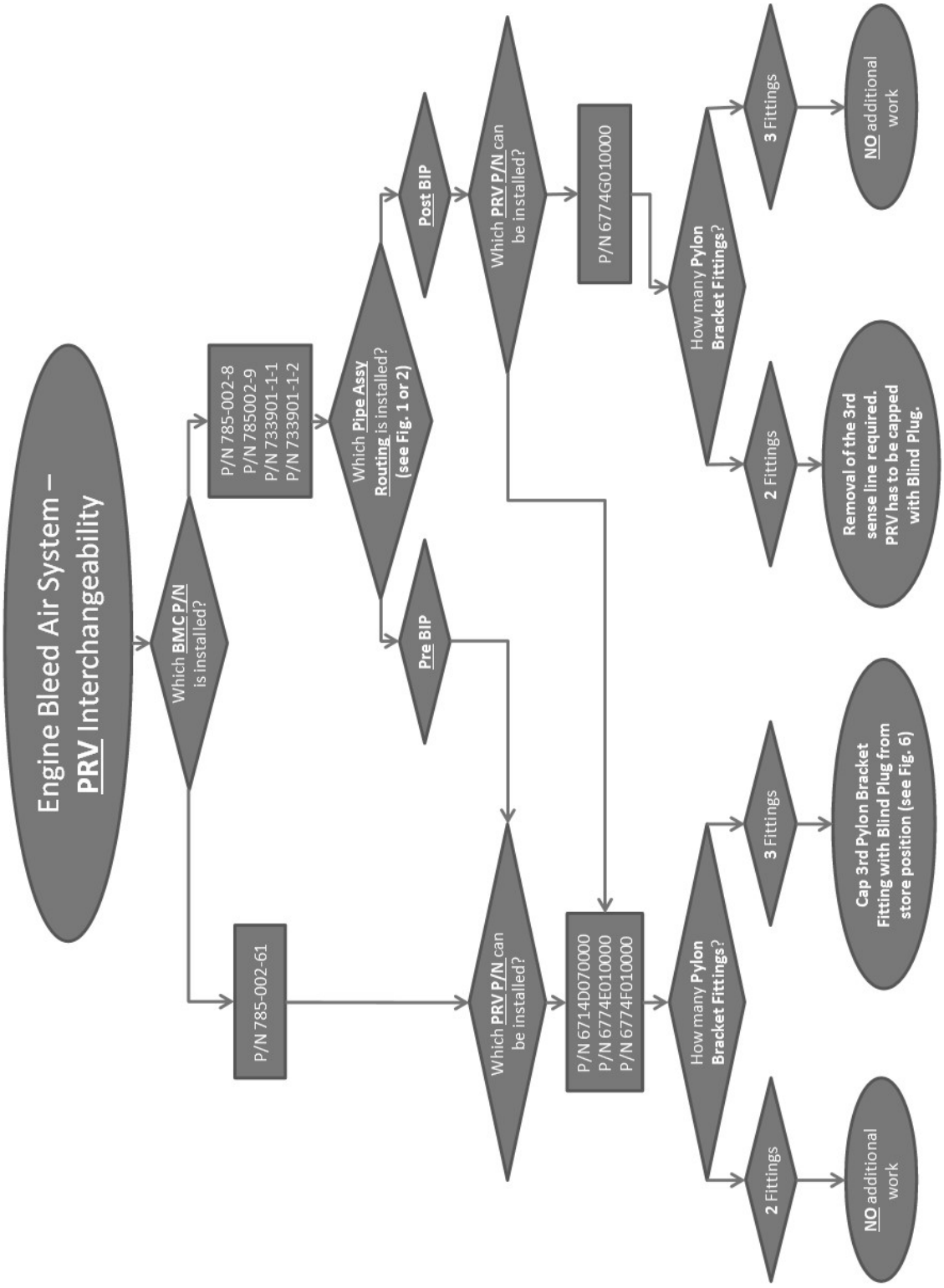

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Fig. 1: Pre BIP Pipe Assy Routing:

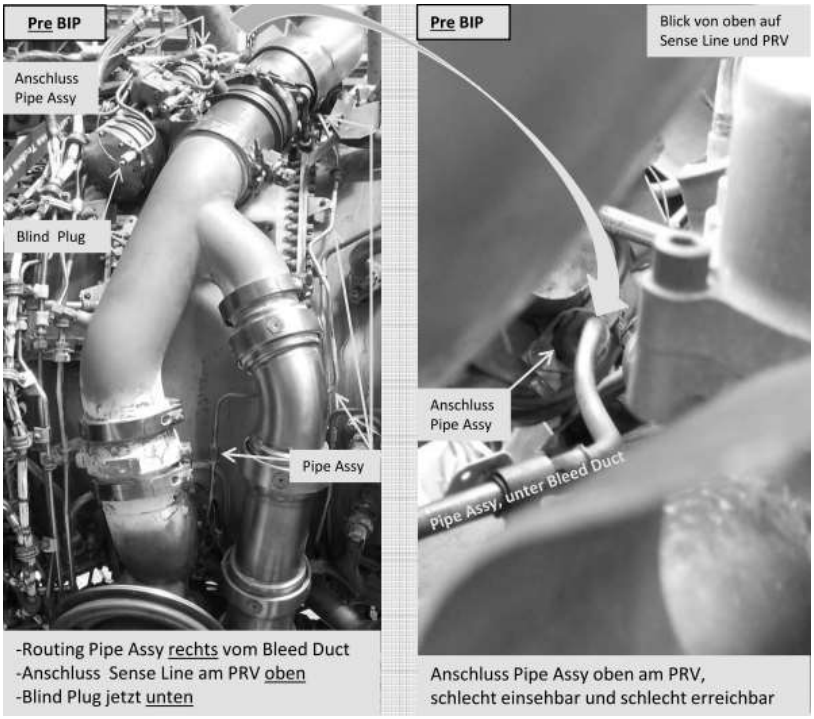

Fig. 2: Post BIP Pipe Assy Routing:

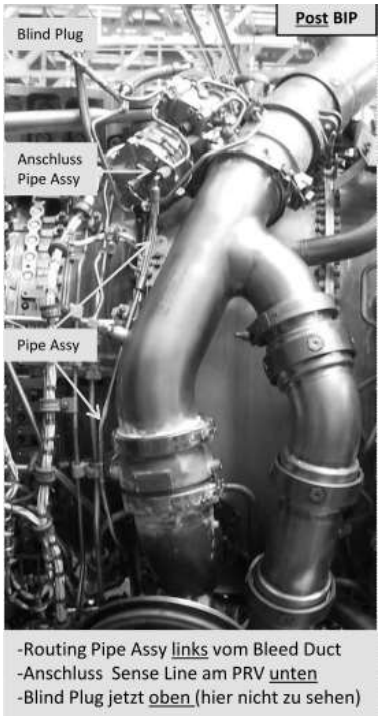

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Fig. 3: PRV P/N 6714D070000; P/N 6774E010000 or P/N 6774F010000 with 2 sense lines between PRV and pylon bracket

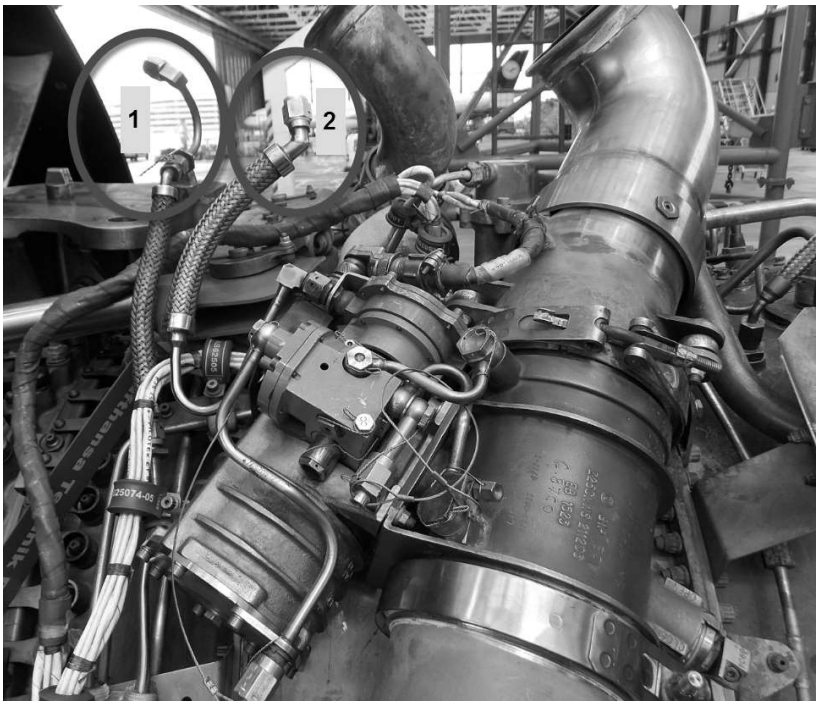

Fig. 4: PRV P/N 6774G010000 with 3 sense lines between PRV and pylon bracket

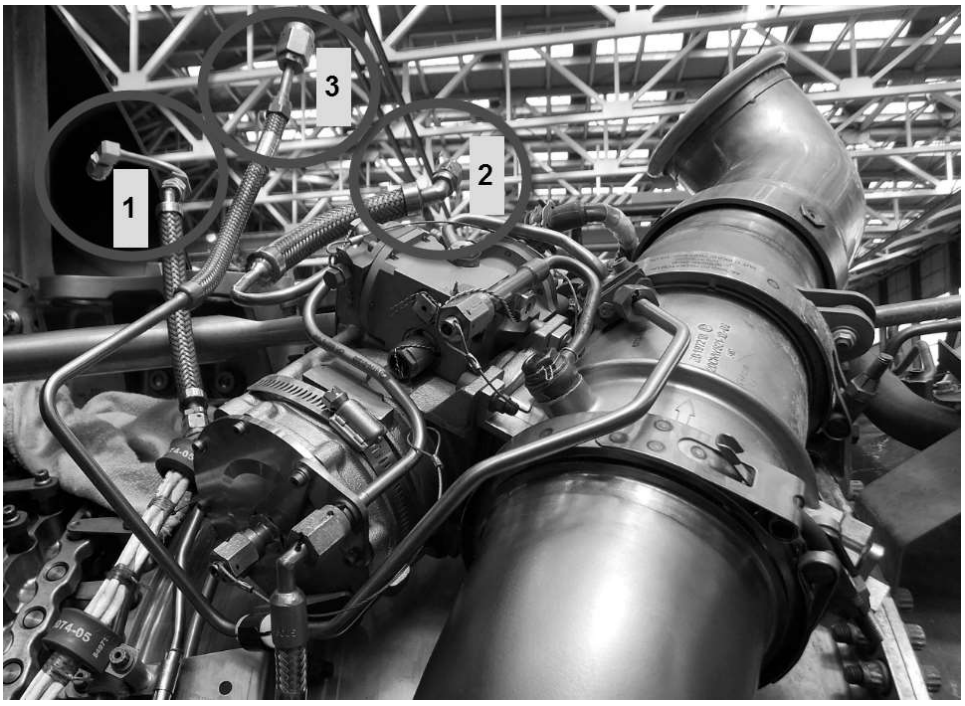

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Fig. 5: Pylon Bracket with 2 Fittings

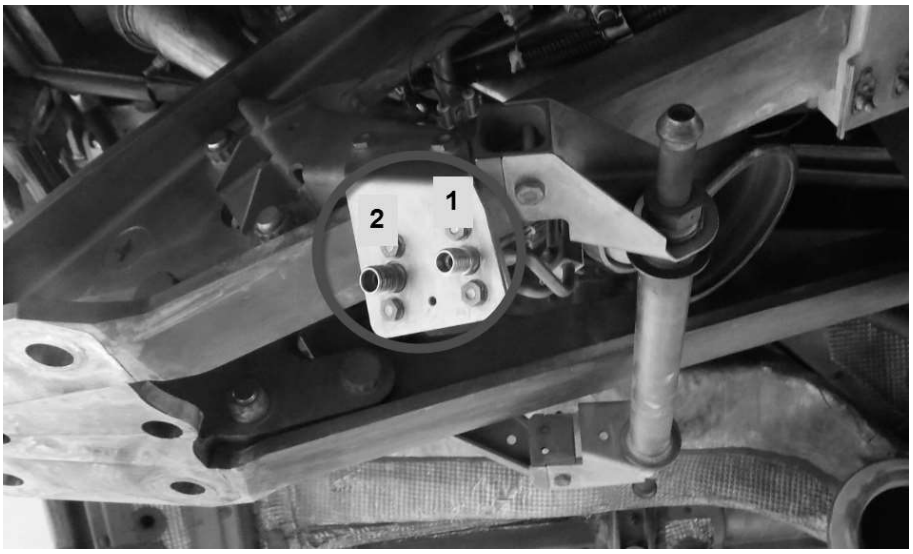
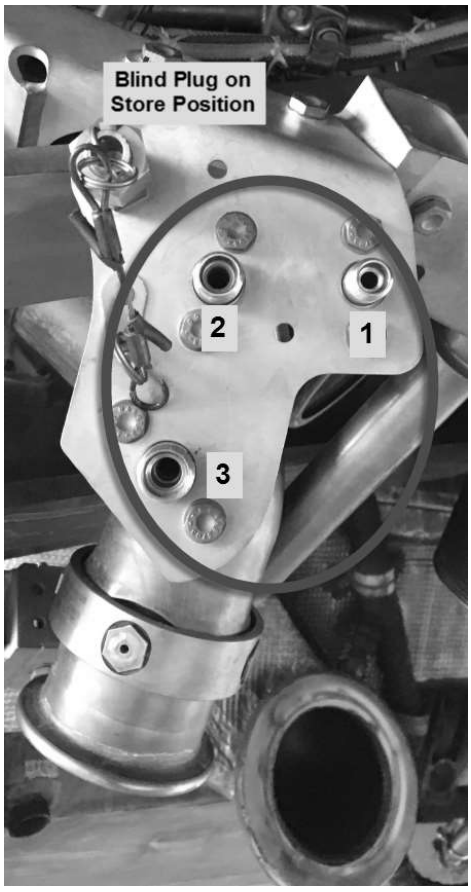


Fig. 6: Pylon Bracket with 3 Fittings and Blind Plug on Store Position



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3. Detailed Accomplishment Instructions:

a. Bleed Monitoring Computer (BMC) Standard:

i. Check the BMC standard:

BMC P/N 785-002-61 is compatible with the following PRV:
- P/N 6714D070000
- P/N 6774E010000
- P/N 6774F010000

➔ For installation of Engine with PRV P/N 6774G010000 the BMC needs to be replaced by a higher BMC standard.
AMM Task 36-11-34-000-001-A Removal of the BMC and
AMM Task 36-11-34-400-001-A Installation of the BMC
IPC 36-11-34-01

BMC P/N 785-002-8;
BMC P/N 785002-9;
BMC P/N 733901-1-1;
BMC P/N 733901-1-2 are compatible with the following PRV:
- P/N 6714D070000
- P/N 6774E010000
- P/N 6774F010000
- P/N 6774G010000

➔ Installation of PRV P/N 6774G010000 requires BMC standard P/N 785-002-8 or higher.
➔ Installation of PRV P/N 6714D070000, P/N 6774E010000 and P/N 6774F010000 possible regardless which BMC standard is installed.

b. Pipe Assy Routing:

i. Check the Pipe Assy Routing from High Pressure Valve (HPV) to the Pressure Regulator Valve (PRV):

- **Pre** BIP (see **Fig. 1**)

or

- **Post** BIP (see **Fig. 2**)

➔ PRV **P/N 6774G010000** is only compatible with **post** BIP Pipe Assy Routing
➔ PRV **P/N 6714D070000**, **P/N 6774E010000** and **P/N 6774F010000** are compatible with **pre** and **post** BIP Pipe Assy Routing

c. Pressure Regulator Valve Standard:

i. Check the PRV P/N:
How many sense lines from PRV to Pylon Bracket?

- P/N 6714D070000 → **2 sense lines** (see Fig. 3)
- P/N 6774E010000 → **2 sense lines** (see Fig. 3)
- P/N 6774F010000 → **2 sense lines** (see Fig. 3)
- P/N 6774G010000 → **3 sense lines** (see Fig. 4)

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d. Pylon Bracket Fittings:

How many Pylon Bracket Fittings are available?

- 2 Fittings?

or

- 3 Fittings?

e. Conclusion of different configurations and definition of additional accomplishment instructions:

i. Configuration 1:

- PRV P/N 6714D070000 or P/N 6774E070000 or P/N 6774F010000
- **2** Pylon Bracket Fittings

➔ NO additional work necessary

ii. Configuration 2:

- PRV P/N 6714D070000 or P/N 6774E070000 or P/N 6774F010000
- **3** Pylon Bracket Fittings

➔ Cap 3rd Pylon Bracket Fitting with Blind Plug from Store Position (see Fig. 6)

iii. Configuration 3:

- PRV P/N 6774G010000
- **2** Pylon Bracket Fittings

➔ Removal of the 3rd sense line between the Bleed Pressure Regulator Valve and Pylon Bracket required.
Pressure Regulator Valve has to be capped with a Blind Plug.

iv. Configuration 4:

- PRV P/N 6774G010000
- **3** Pylon Bracket Fittings

➔ NO additional work necessary