A350
TECHNICAL TRAINING MANUAL
MAINTENANCE COURSE - T1+T2 - RR Trent XWB
Pneumatic

This document must be used for training purposes only

Under no circumstances should this document be used as a reference

It will not be updated.

AIRBUS Environmental Recommendation
Please consider your environmental responsability before printing this document.

PNEUMATIC

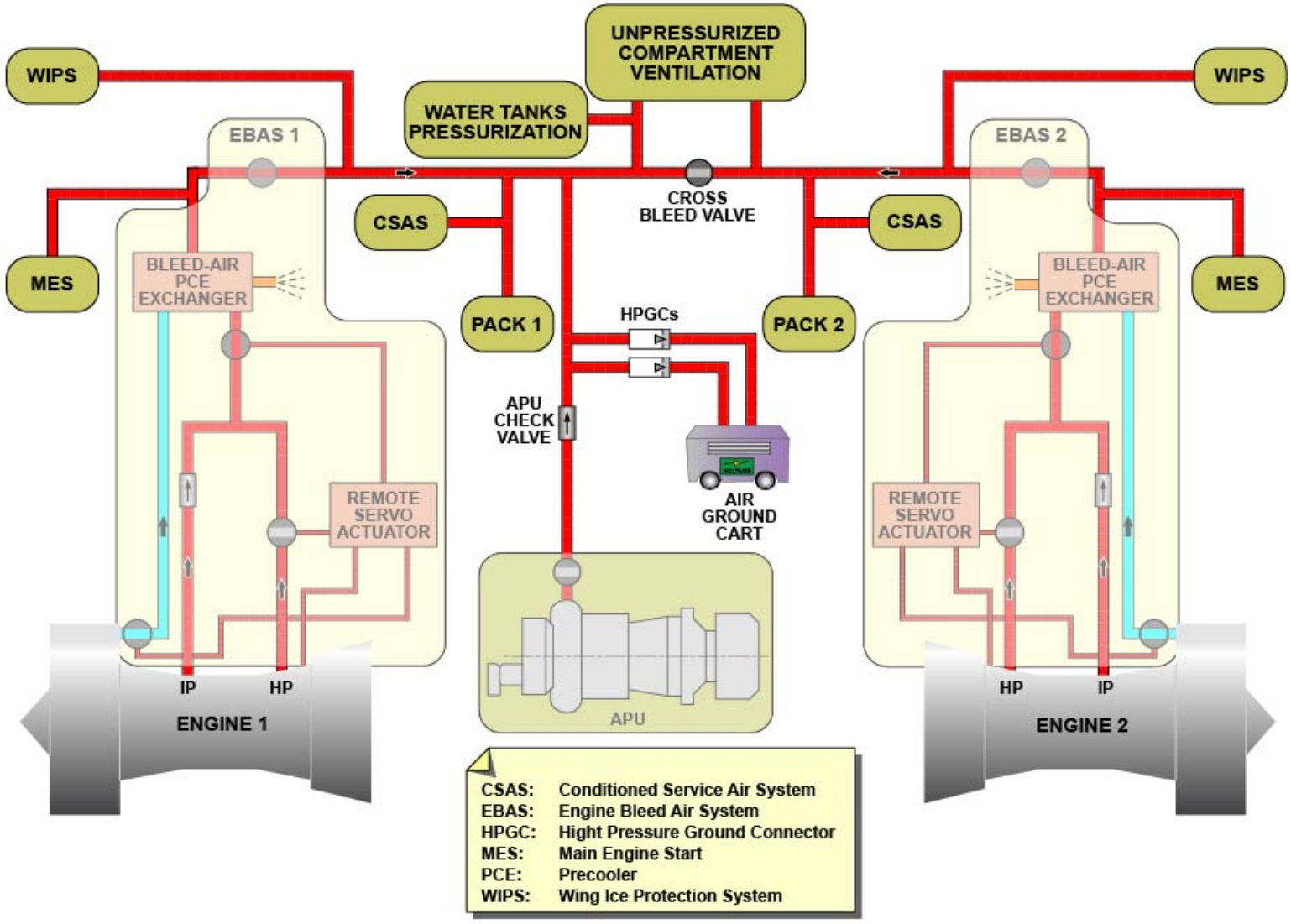
V1813401 - V01T0M0

PNEUMATIC AIR DISTRIBUTION SYSTEM (PADS) DESCRIPTION (2/3)

Pneumatic Air Distribution System PADS Presentation

The function of the Pneumatic Air Distribution System (PADS) is to supply air pressure from the pneumatic air sources to the different users systems through a duct routing.
The engines and the APU are the primary bleed air sources. On ground, an external HP ground cart can be used to supply compressed air through two High Pressure Ground Connectors (HPGCs).
The primary components of the PADS are:
- The air distribution ducts
- An APU check valve
- A cross bleed valve
- Two HPGCs.

V1813401 - V01T0M0 - VM36D1PADSD3001



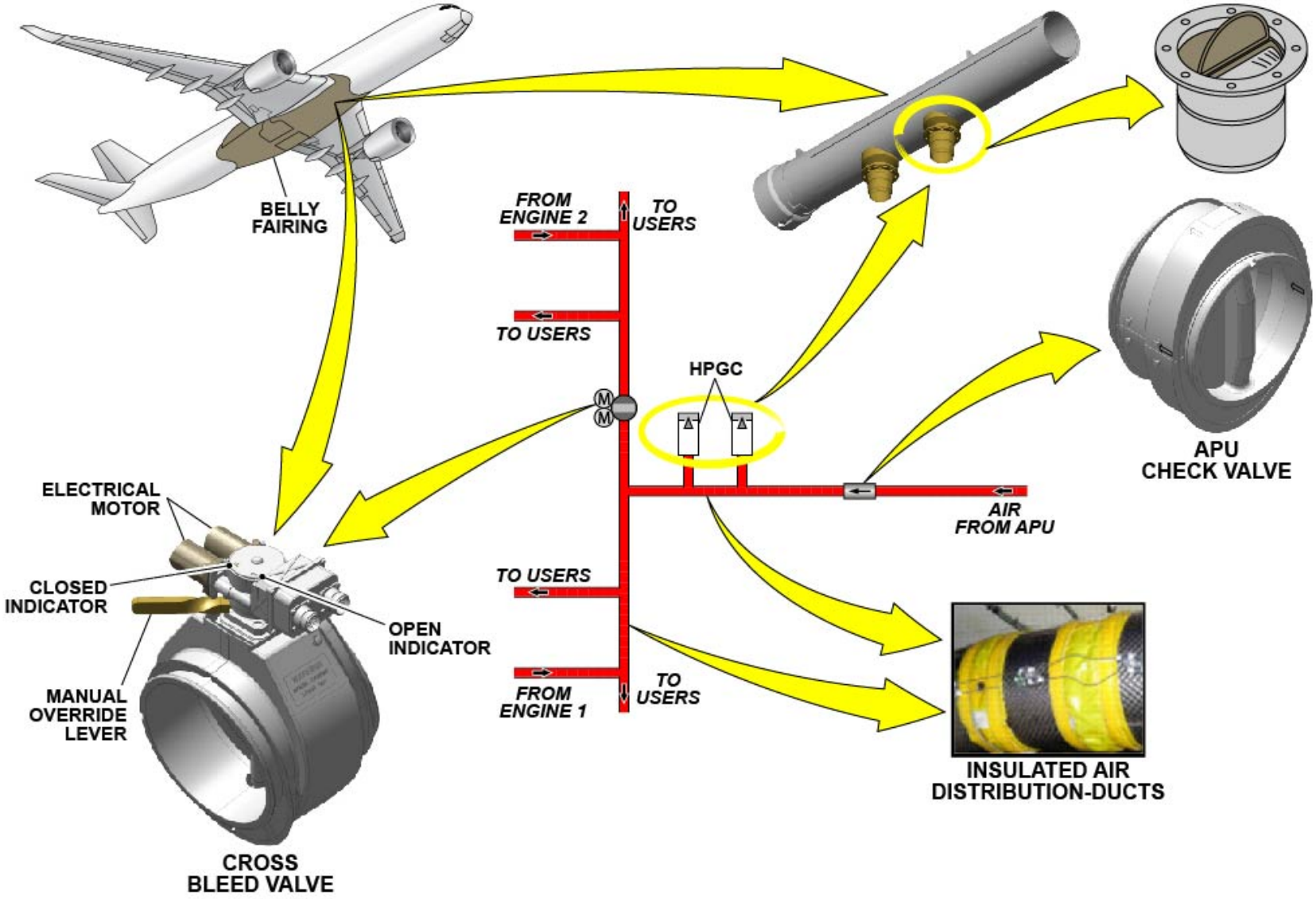
PNEUMATIC AIR DISTRIBUTION SYSTEM PADS PRESENTATION

PNEUMATIC AIR DISTRIBUTION SYSTEM (PADS) DESCRIPTION (2/3)

PADS Components Description

The function of the cross bleed valve is to isolate or to connect the LH and the RH bleed ducts. The cross bleed valve has two electrical motors, which operate independently.
The valve can be manually activated without electrical power with a manual override lever. A visual indicator shows the open/closed position of the valve flap.
The cross bleed valve is installed in the belly fairing.
There are two HPGCs connected to the bleed ducting, downstream of the APU check valve, on the LH side of the cross bleed valve.
The HPGCs are accessible through a dedicated access panel in the belly fairing.
Each HPGC has a non return valve.
The APU check valve prevents reverse flow to the APU during engine bleed air or HP air ground cart operation.
The air distribution ducts, which supply air to users, have insulation.

V1813401 - V01T0M0 - VM36D1PADSD3001



PADS COMPONENTS DESCRIPTION

PNEUMATIC AIR DISTRIBUTION SYSTEM (PADS) DESCRIPTION (2/3)

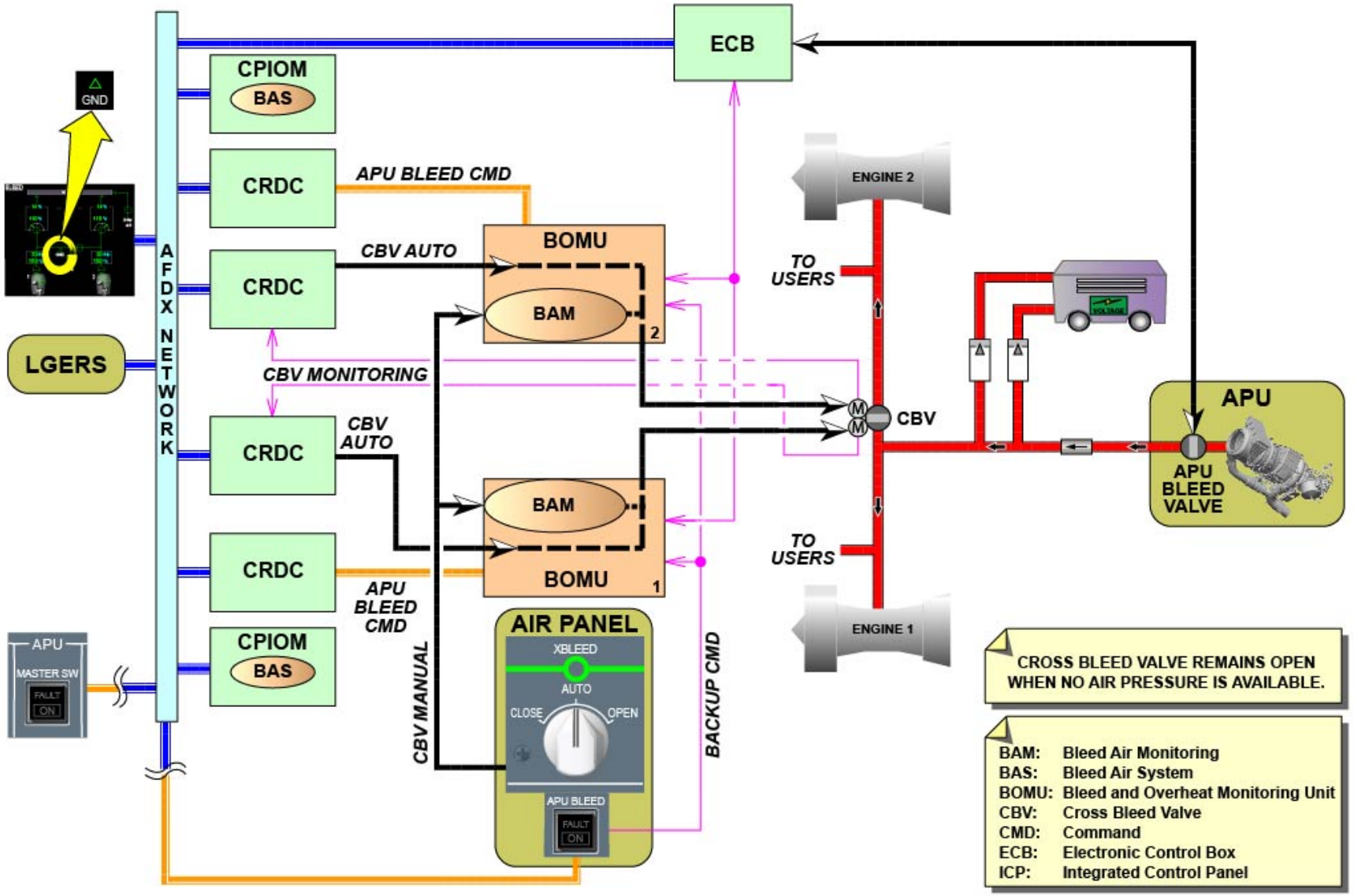
PADS Operation and Interface

The cross bleed valve is controlled and monitored either automatically (normal operation) through the AFDX network by 2 CPIOMs and 2 CRDCs, or manually through 2 Bleed and Overheat Monitoring Units (BOMU) to ensure independence from AFDX network.
Each CPIOM hosts a Bleed Air System (BAS) application. Only one BAS application is in control at a time, the other one being in stand-by. The changeover is done after each flight or in case of failure.
Each BOMU (stand-alone controller) hosts a Bleed Air Monitoring (BAM) application. Both Bleed Air Monitoring (BAM) applications work simultaneously for manual control.
When the XBLEED selector is in the AUTO position, the cross bleed valve is automatically controlled by a single BAS application via CRDC and pass-through BOMU.
The cross bleed valve can be also manually controlled from the selector in OPEN or CLOSED position through BOMUs with Bleed Air Monitoring (BAM) application, overriding the automatic control.
The automatic control from BAS application depends on the bleed air sources configuration:
- Closure control when both Engine Bleed Air System (EBAS) are operative in normal configuration, without APU bleed air (APU bleed air having priority over engine bleed), or in case of bleed air leak
- Opening control when no bleed air is available, when air is supplied from the HP ground cart or from the APU, and in case of one EBAS failure.

The CDS shows the status of the cross bleed valve and the HPGC symbol on the BLEED page.
The HPGC supply symbol (white GND and green triangle) comes into view only when:
- The A/C is on ground (input from LGERS) and
- There is no APU nor ENG bleed air supply and
- The bleed ducts are pressurized (pressure above 20 psi).

The BAS application controls the APU bleed valve with the data from the APU MASTER SW and the APU BLEED P/BSW. It sends then a control signal to the Electronic Control Box (ECB) through the CRDCs and the BOMUs.
As back-up, the APU BLEED P/BSW is directly connected to the BOMUs with a discrete signal and controls the APU bleed valve through the ECB.

V1813401 - V01T0M0 - VM36D1PADSD3001

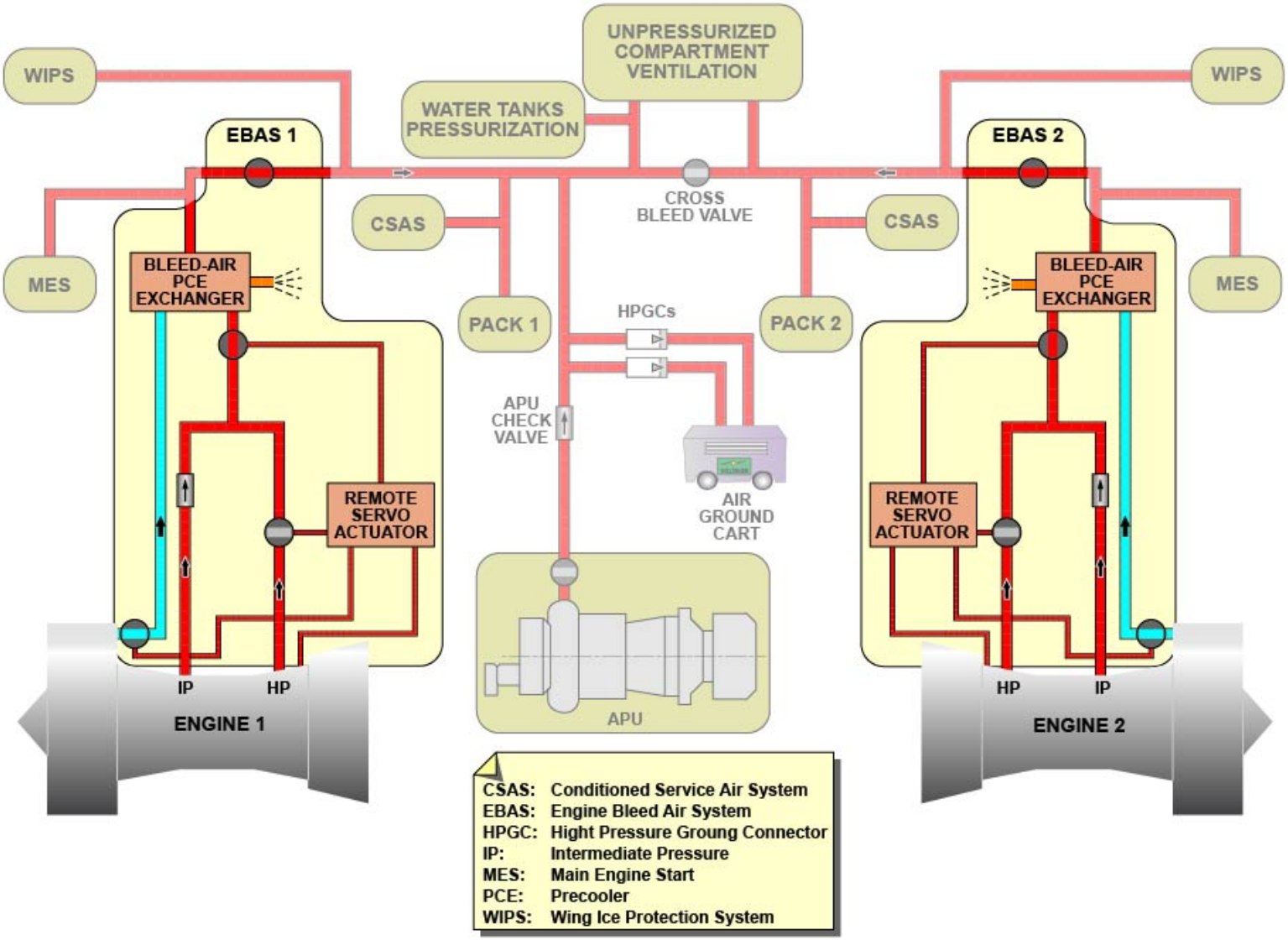


PADS OPERATION AND INTERFACE

ENGINE BLEED AIR SYSTEM (EBAS) DESCRIPTION (2/3)

Engine Bleed Air System (EBAS) Presentation

Engine Bleed Air System (EBAS) is used for:
- Bleed air pressure regulation (including HP/Intermediate Pressure (IP) transfer)
- Bleed air temperature regulation
- System monitoring and protections.



ENGINE BLEED AIR SYSTEM (EBAS) PRESENTATION

ENGINE BLEED AIR SYSTEM (EBAS) DESCRIPTION (2/3)

EBAS Components Descriptions

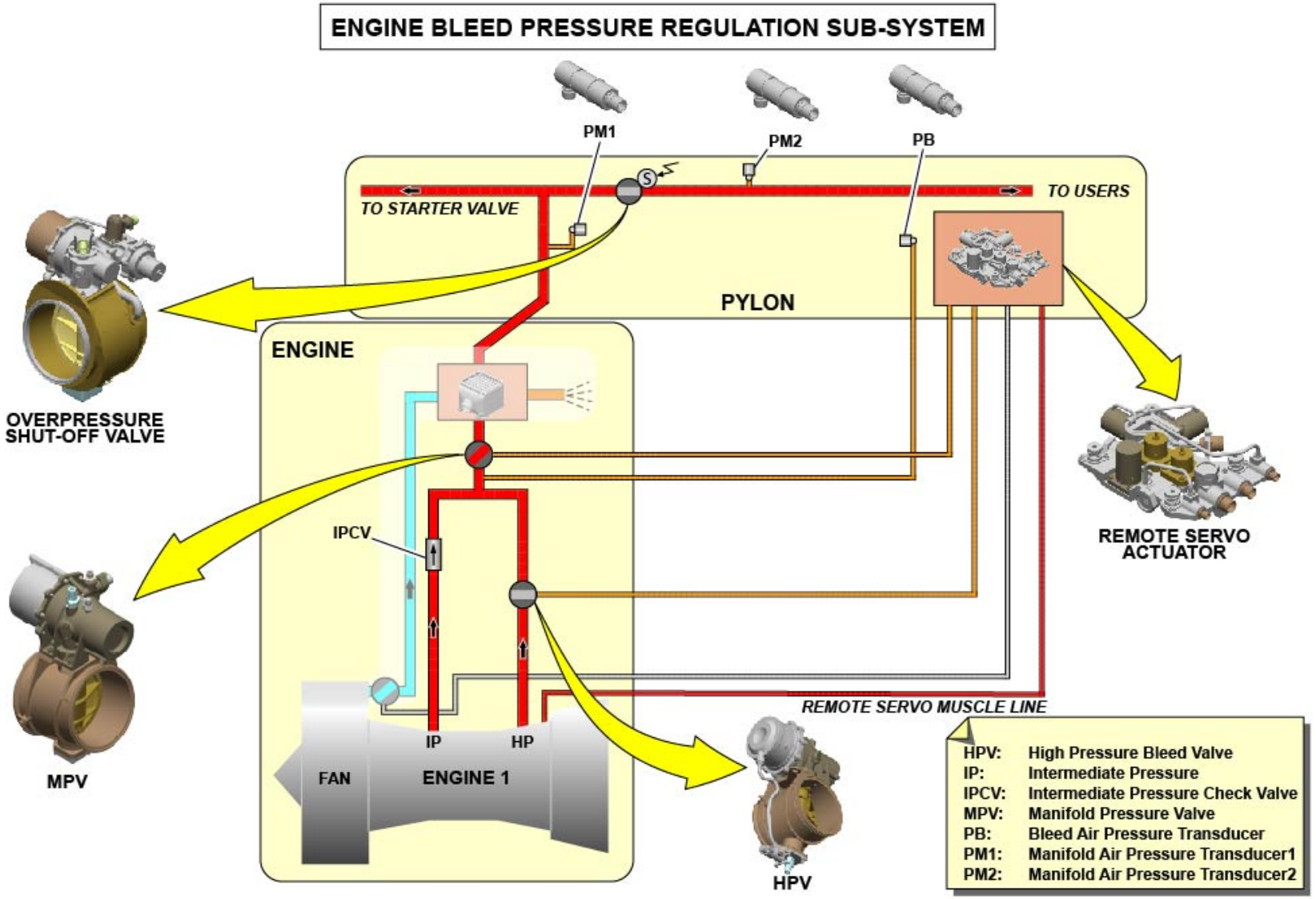
Pressure Regulation Sub-System Components

The engine bleed air pressure regulation sub-system is composed with the following components:
- Manifold Pressure Valve (MPV)
- HP Bleed Valve (HPV)
- Remote servo
- Intermediate Pressure Check Valve (IPCV)
- Overpressure shut-off valve
- Bleed Air Pressure Transducer (PB)
- Manifold Air Pressure Transducer (PM) included Manifold Air Pressure Transducer 1 (PM1) and Manifold Air Pressure Transducer 2 (PM2).

The MPV is a pressure regulating and shut-off valve. The MPV is installed on the engine core.
The MPV functions are:
- To ensure pressure regulation, when air is supplied from IP port (and HP port depending on air pressure value upstream)
- To protect engine compressor against reverse flow
- To isolate the system when required.

The HPV is a pressure regulating and shut-off valve. The HPV is installed on the engine core.
The HPV functions are:
- To contribute to the bleed port selection, depending on engine power
- To contribute to the bleed air pressure regulation, when air is supplied from HP port
- To protect engine compressor against reverse flow through the HP engine port
- To isolate the HP port when required.

The remote servo function is to provide a variable air muscle pressure to EBAS components through three different Torque Motors (TMs) and associated sense lines. Two of them are used to control the HPV and MPV positions, for the pressure regulation sub-system, and one is used for temperature regulation (refer to temperature regulation paragraph).
If the remote servo TMs are de-energized, the HPV and MPV operate in pneumatic mode.
The IPCV prevents reverse flow from the HP to the IP engine compressor.
The overpressure shut-off valve main function is to isolate the system when required.
If the MPV pressure regulation fails, the overpressure shut-off valve limits the downstream pressure to a maximum value (90 psi).
The overpressure shut-off valve is installed in the engine pylon.
The PB is used for HP and IP bleed port switching and for HPV and MPV control. It is connected to the bleed air duct upstream of the MPV via a dedicated sense line.
There are two PMs (PM1 and PM2) used for overpressure protection, low pressure detection and for MPV position.
They are connected to the bleed air duct as follows:
- PM1, upstream of the overpressure shut-off valve
- PM2, downstream of the overpressure shut-off valve.



EBAS COMPONENTS DESCRIPTIONS - PRESSURE REGULATION SUB-SYSTEM COMPONENTS

V1813401 - V01T0M0 - VM36D2EBASD3001

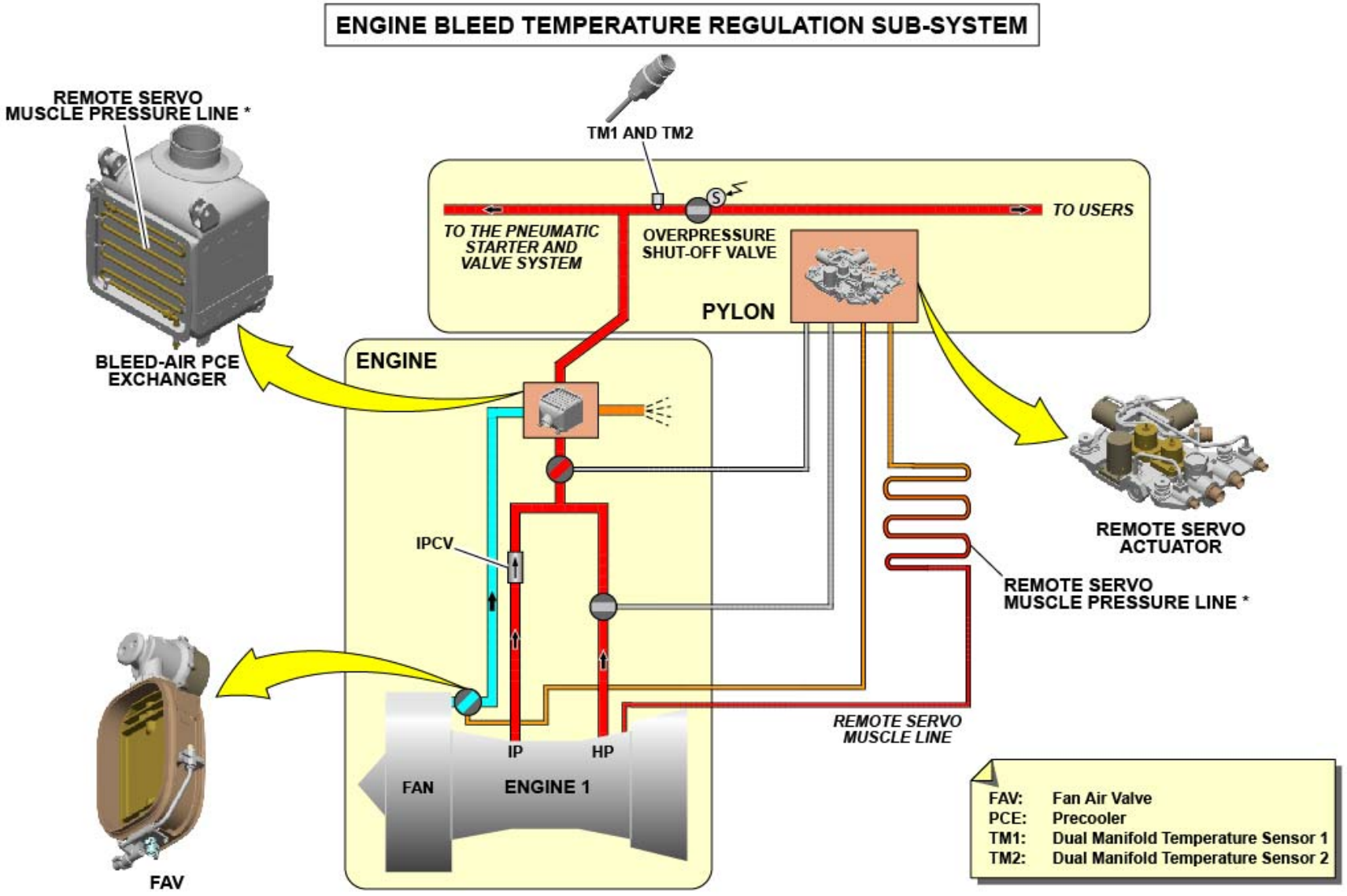
ENGINE BLEED AIR SYSTEM (EBAS) DESCRIPTION (2/3)

EBAS Components Descriptions (continued)

Temperature Regulation Sub-System Components

The engine bleed air temperature regulation sub-system includes the following components:
- Fan Air Valve (FAV)
- Remote servo
- Precooler Exchanger (PCE)
- Dual Manifold Temperature Sensor (TM) (Dual Manifold Temperature Sensor 1 (TM1) and Dual Manifold Temperature Sensor 2 (TM2)).

The FAV is a modulating valve. It is used to regulate the bleed air outlet temperature by modulating the fan air flow delivered to the PCE.
The FAV is installed on the engine core.
The remote servo regulates the FAV position using a dedicated TM and associated sense line.
If the TM is de-energized, the FAV moves to the fully open position.
The PCE is an air-to-air heat exchanger. It uses fan air flow to cool down the bleed air temperature and also the remote servo muscle pressure line.
The fan air flow exiting the PCE is vented to the engine core zone and is subsequently vented overboard.
The TM is a single LRU including two sensors, TM1 and TM2.
It senses the temperature downstream of the PCE. It is used for over-temperature protection, low temperature detection and FAV control and monitoring. In normal operation, control of the FAV is done by TM1. TM2 is only used in backup.



EBAS COMPONENTS DESCRIPTIONS - TEMPERATURE REGULATION SUB-SYSTEM COMPONENTS

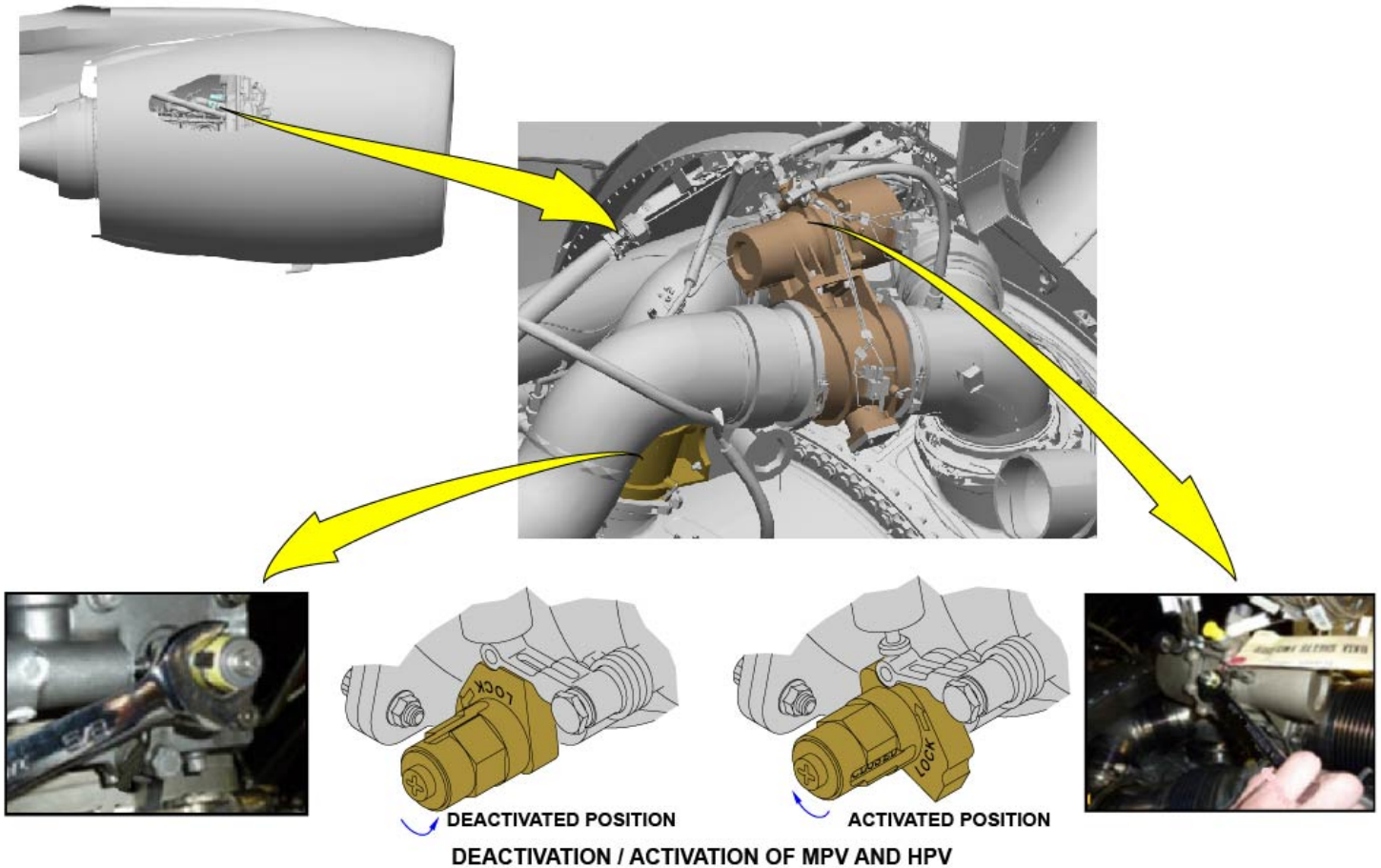
V1813401 - V01T0M0 - VM36D2EBASD3001

ENGINE BLEED AIR SYSTEM (EBAS) DESCRIPTION (2/3)

EBAS Components Descriptions (continued)

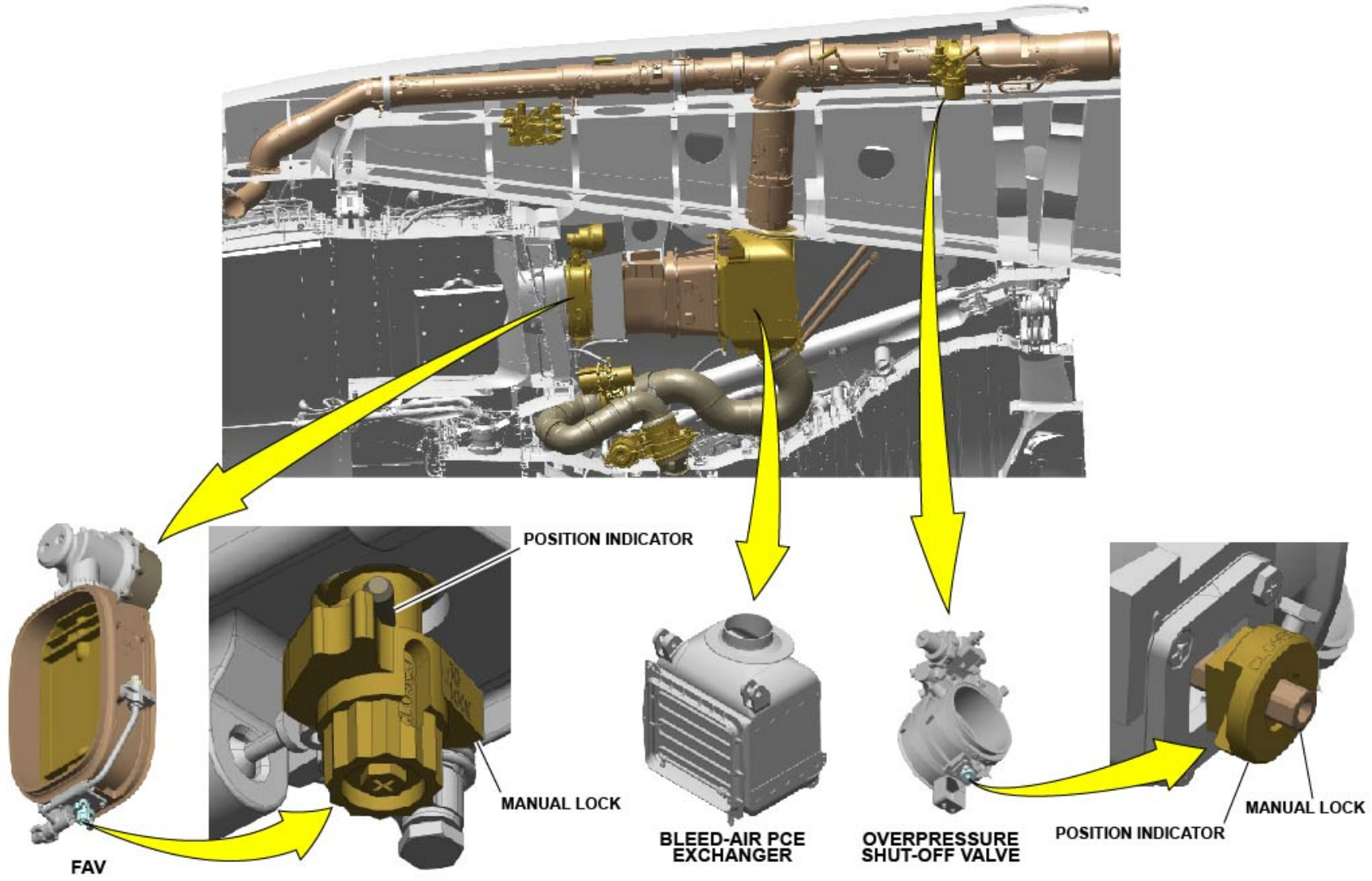
Deactivation/Reactivation

The MPV and HPV can be deactivated using a manual locking device with a visual position indicator.
The FAV can be deactivated using a manual locking device with a visual position indicator.
The overpressure shut-off valve can be deactivated through a quick access panel using a manual override and a locking screw. The locking screw is also used as a visual position indicator.



DEACTIVATION / ACTIVATION OF MPV AND HPV

EBAS COMPONENTS DESCRIPTIONS - DEACTIVATION/REACTIVATION



EBAS COMPONENTS DESCRIPTIONS - DEACTIVATION/REACTIVATION

This Page Intentionally Left Blank

ENGINE BLEED AIR SYSTEM (EBAS) DESCRIPTION (2/3)

EBAS System Function and Description

The EBAS is controlled and monitored through the following components:
- Two BAS application hosted in two CPIOMs (one per CPIOM)
- Two Bleed Air Monitoring (BAM) applications hosted in two BOMUs (one per BOMU)
- Four CRDCs

The EBAS system is divided in two sides, one per engine.
Per engine, one BAS application hosted in one CPIOM, one Bleed Air Monitoring (BAM) application hosted in one BOMU and two CRDCs are used.
The BAS application functions are:
- To generate bleed air pressure and temperature regulating command via the CRDC
- To ensure overpressure and over-temperature monitoring in case of the BOMU failure.

The Bleed Air Monitoring (BAM) application ensures the EBAS temperature and pressure protection.
Per engine, one CRDC transmits the command signals from the BAS application to the remote servo TMs for HPV, MPV, FAV and to the overpressure shut-off valve solenoid. It monitors the valves and transmits their positions to the BAS application.
The other CRDC is used as gateway between the BOMU and the AFDX network.

System Regulation Modes

The EBAS can be operated in two different regulations modes:
- Electronic mode in the normal operation
- Pneumatic mode in backup operation.

The electronic regulation of the HPV, MPV and FAV is done by the BAS application via one CRDC using the remote servo TMs.
The pneumatic backup regulation mode is activated in case of some EBAS failures (such as BAS control application failure, remote servo control loss, etc...). Consequently the remote servo TMs are de-energized, the HPV and/or MPV are regulating in pneumatic mode and the FAV is driven to the fully open position.

System Protections

The EBAS is protected electronically by closure of HPV, MPV and overpressure shut-off valve in case of overpressure and over-temperature conditions.
If the electronic protection is not effective, in backup a pneumatic protection is done by the overpressure shut-off valve that regulates the bleed pressure to a maximum (approximately 90 psi).
The EBAS electronic protection is done by two independent ways:
- The Bleed Air Monitoring (BAM) application in BOMU
- The BAS application via a CRDC, when the AFDX network is available.

System Operations

The EBAS operation can be done manually or automatically.
Automatic operation:
- During the engine start sequence HPV, MPV and FAV are closed and the overpressure shut-off valve open. Once engine is started (EIF data) all the valves are opened
- For an APU BLEED demand all valves (HPV, MPV, FAV and overpressure shut-off valve) are closed
- In case of bleed leak detection HPV, MPV and overpressure shut-off valve are closed.

The manual operation is done either by setting the related BLEED P/B SW to OFF or by releasing the ENG FIRE P/B. Consequently the HPV, MPV, FAV and overpressure shut-off valve are commanded to close.

EBAS Monitoring and Indicating

EBAS is monitored in pressure and in temperature.

For pressure the system uses three sensors:
- PB and PM1 are connected to BAS application via CRDC
- PM2 connected to Bleed Air Monitoring (BAM) application in BOMU.

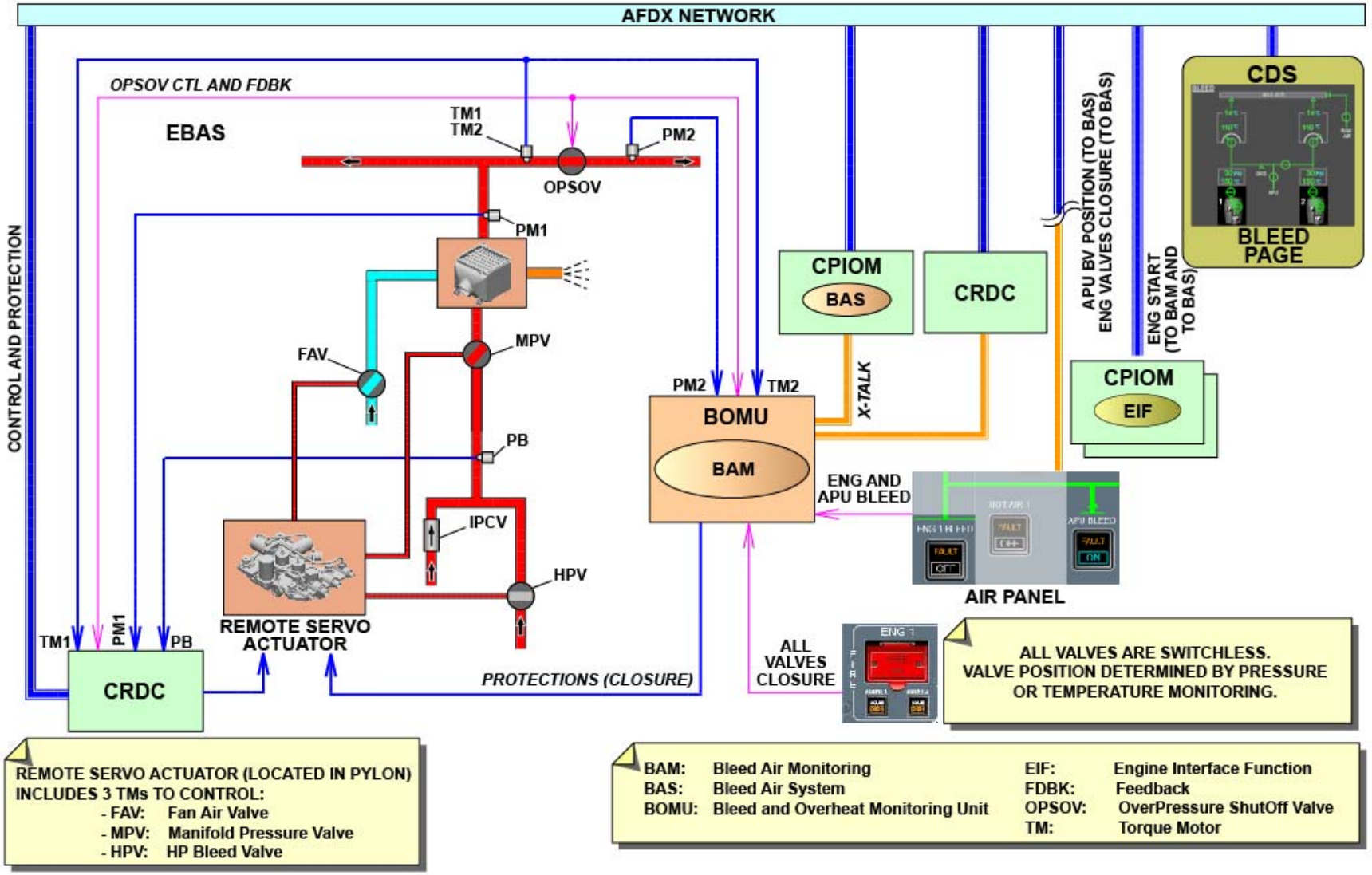
PM1 and PM 2 are used for MPV position monitoring and abnormal pressure detection.

For temperature the system used one TM, TM1 to BAS application via a CRDC and TM2 connected to Bleed Air Monitoring (BAM) application in BOMU.

TM1 and TM2 are for the FAV position monitoring and abnormal temperature detection.

EBAS air pressure and temperature sensors are used for EBAS indicating (MPV and HPV positions, air temperature and air pressure) on ECAM BLEED page.

On the ECAM page there is only the PM2 indication (if PM2 failed there is amber crosses).



EBAS SYSTEM FUNCTION AND DESCRIPTION & EBAS MONITORING AND INDICATING

This Page Intentionally Left Blank

OVERHEAT DETECTION SYSTEM (OHDS) DESCRIPTION (2/3)

System Presentation

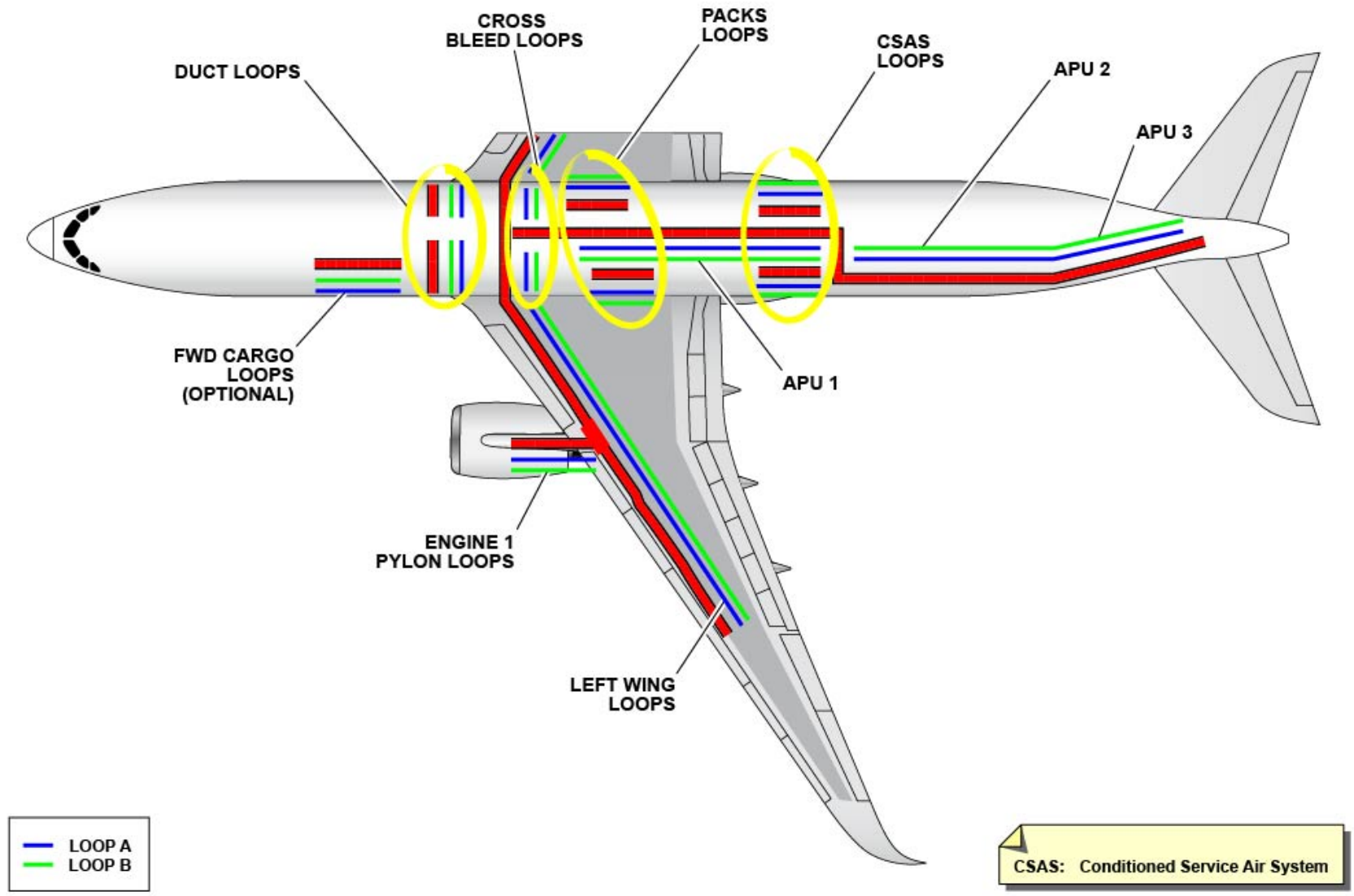
The OverHeat Detection System (OHDS) prevents damage of the components or structure if air leaks or duct damage occur.
The OHDS has:
- Two Bleed and Overheat Monitoring Units (BOMUs) with their own related OverHeat Detection Card (OHDC)
- Two CPIOMs with a related OHDS application
- Two CRDCs
- Overheat sensing elements.

When sensing elements detect an air leak, the BOMUs (OHDCs) transmit the isolation request/warnings to other A/C system through the CRDCs and the OHDS application (CPIOMs).
The OHDS senses all ambient air leaks in the vicinity of the hot air ducts, in different zones.
The zones are:
- The fuselage (Auxiliary Power Unit (APU) ducts, Conditioned Service Air System (CSAS), air conditioning packs, trim air ducts, cross bleed ducts and optionally FWD cargo)
- The wings
- The two engine pylons.

For each zone, the sensing elements, connected in series, create two independent detection loops (A and B):
- Loop detection A is monitored by BOMU 1
- Loop detection B is monitored by BOMU 2.

Two additional loops can be installed along the trim air ducts of the optional FWD cargo temperature control system, if installed.

V1813401 - V01T0M0 - VM36D3OHDSD3001



SYSTEM PRESENTATION

OVERHEAT DETECTION SYSTEM (OHDS) DESCRIPTION (2/3)

Operation and Interfaces

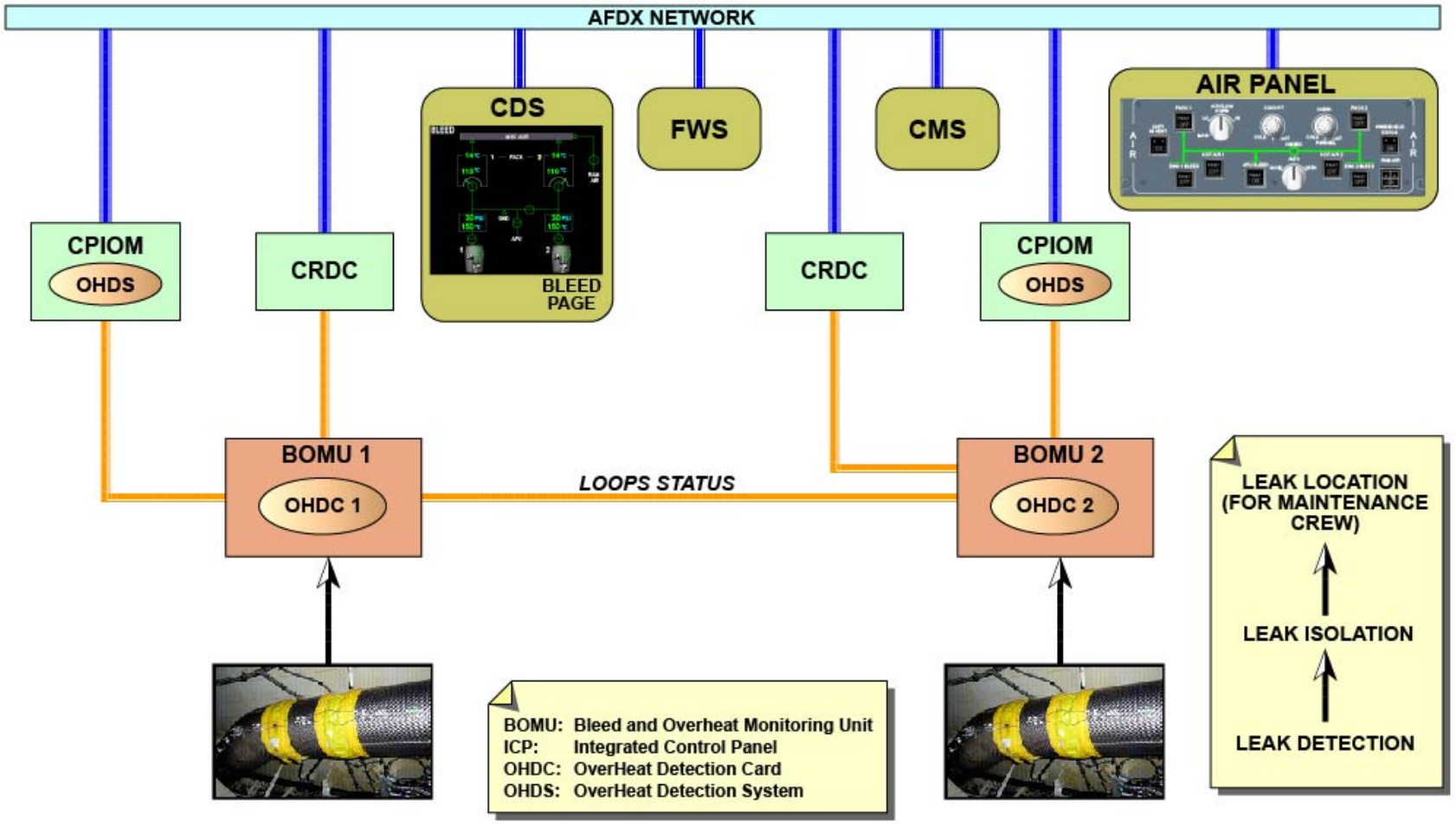
The functions of the OHDS are:
- Leak detection
- Leak isolation
- Leak location: to ease maintenance.

The connection between BOMUs, CPIOMs and A/C systems are:
- OHDCs (BOMUs) to OHDS application (CPIOMs) through the CAN buses
- OHDCs between them through interlink CAN buses
- OHDCs to other A/C systems through CRDCs with CAN buses and AFDX
- OHDS application to other A/C systems through AFDX.

Leak overheat detection:
OHDCs (partition in each BOMU) transmit request and alert signals to the other A/C systems, if the two loops status are available and an overheat detection is detected (with AND logic to avoid spurious messages and permanent monitoring), otherwise the OHDC utilizes the operating loop status to determine if an overheat is present in the zone.
A CAN bus connects the two BOMUs for loop status between them and determines if an isolation/alert is necessary.
The two applications OHDS in CPIOMs are used as gateway between OHDCs and A/C systems.

Leak isolation:
BOMUs (OHDCs) are able to manage up to two attempts to isolate the leak. OHDCs determine which valves to be closed (1st attempt). If the primary isolation failed, the system tries with other valves upstream to isolate the leak (2nd attempt). If second isolation attempt fails, manual crew isolation is requested.
When a leak is found, the BOMUs send a message alert to FWS and the BLEED page of the CDS for the valve(s) position.
A reset could be done with the P/BSW (OFF then ON) on the AIR panel.

Leak location:
The system can give the leak location data through CMS for the maintenance.



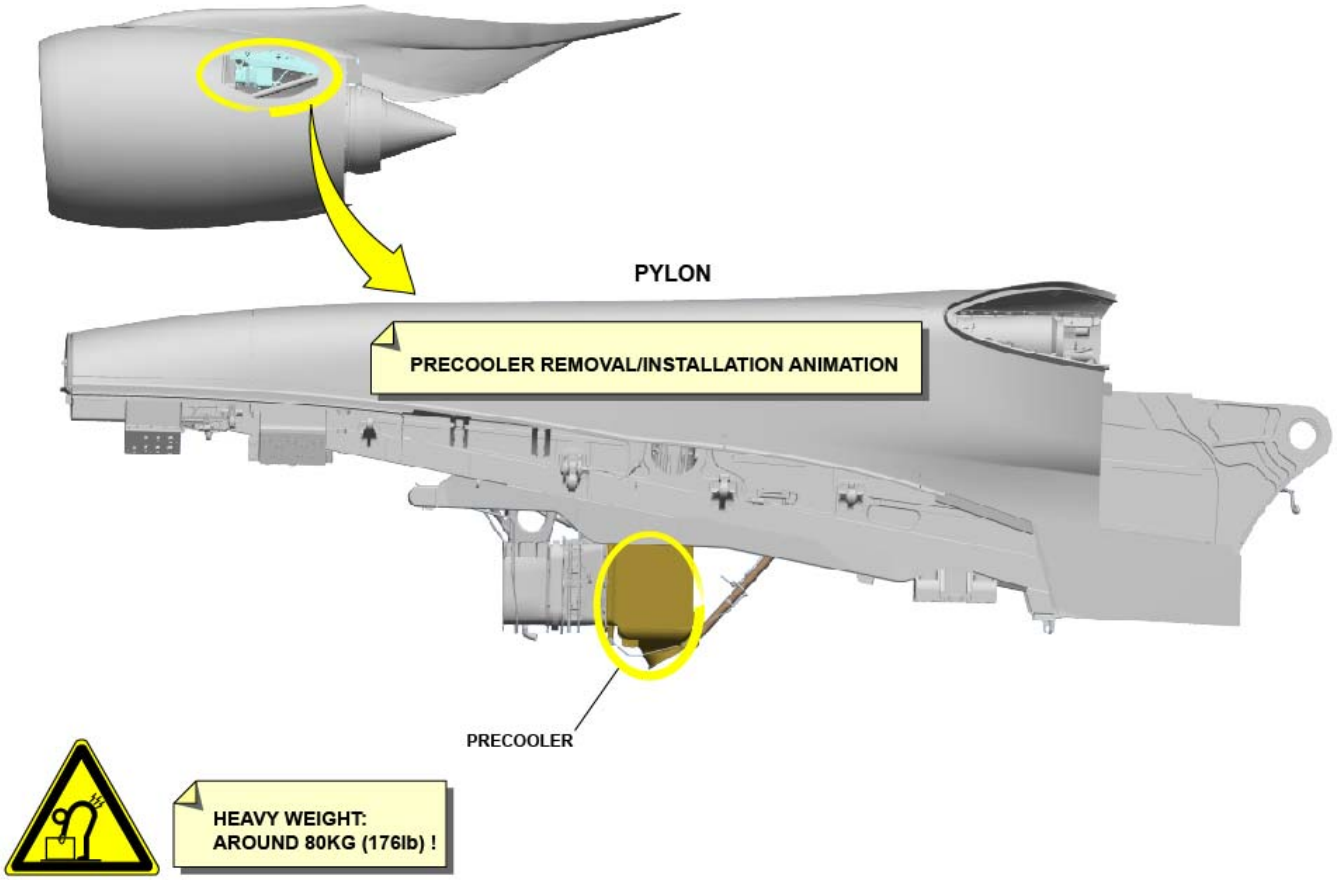
OPERATION AND INTERFACES

PNEUMATIC SYSTEM MAINTENANCE (3)

TOOLS

Precooler (PCE) Removal/Installation

Due to the location of the Precooler (PCE), above engine core (located between trust links and the pylon) and its weight there is a dedicated tool for the removal/installation.
The animation shows the removal and the installation of the PCE.



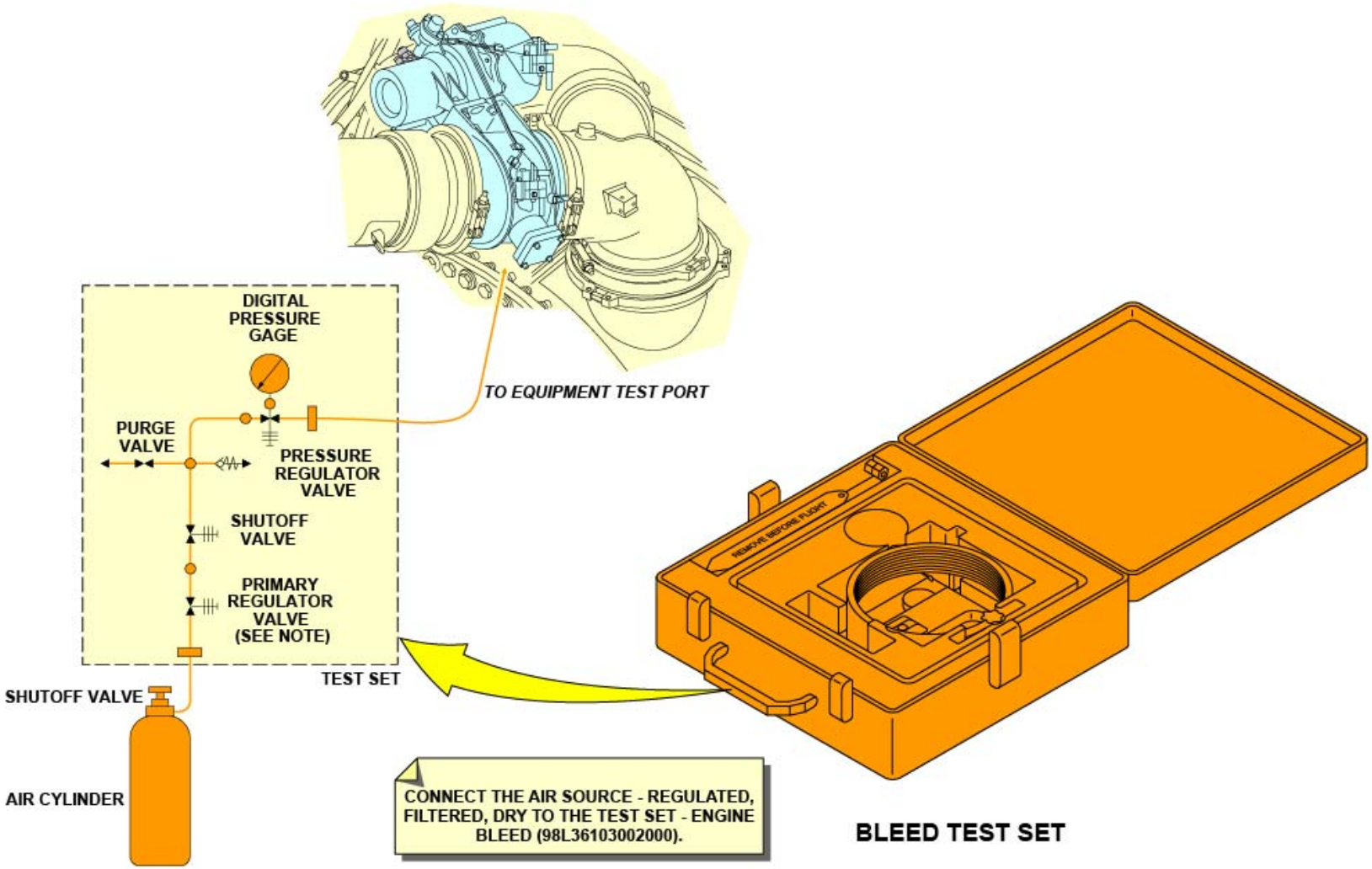
TOOLS - PRECOOLER (PCE) REMOVAL/INSTALLATION

PNEUMATIC SYSTEM MAINTENANCE (3)

TOOLS (continued)

Bleed Test Set

A specific bleed test set is used to check the bleed air system components operation on wing.



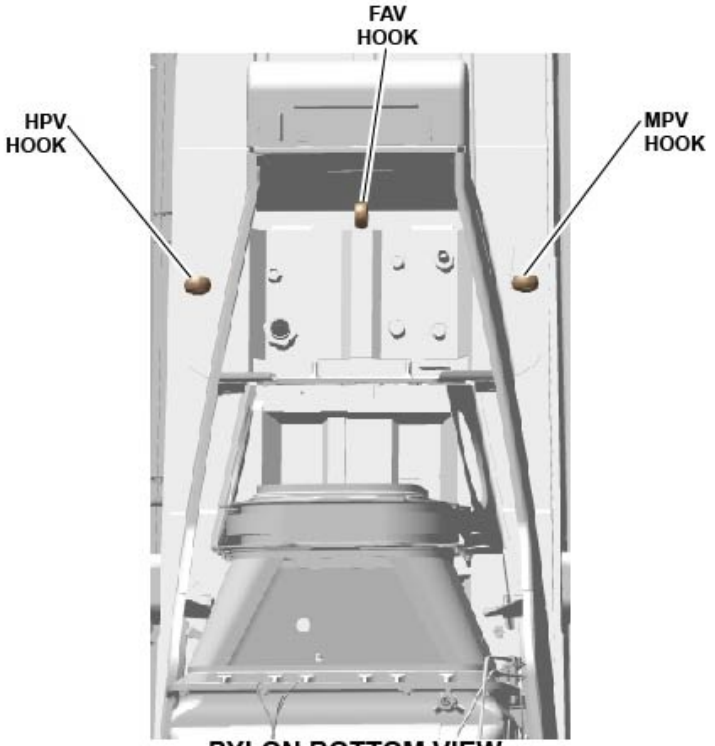
TOOLS - BLEED TEST SET

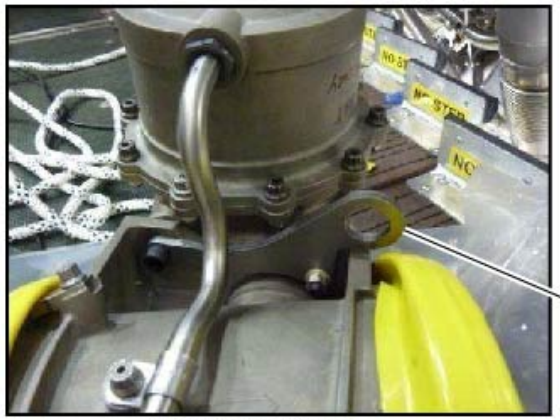
PNEUMATIC SYSTEM MAINTENANCE (3)

MAINTENANCE NOTE

Engine Bleed Air System (EBAS) Valves Removal/Installation

The EBAS valves are heavy components (approximately 12.5 kg (27.5 lb)) and are located at 12 o'çlock position between engine thrust links. The valve replacement (Manifold Pressure Valve (MPV), High Pressure Bleed Valve (HPV) or Fan Air Valve (FAV)) is done by 2 mechanics using a Ground Support Equipment (GSE) with a simple sling. The GSE which is install using three permanent hooks fitted on pylon to sustain the GSE sling.

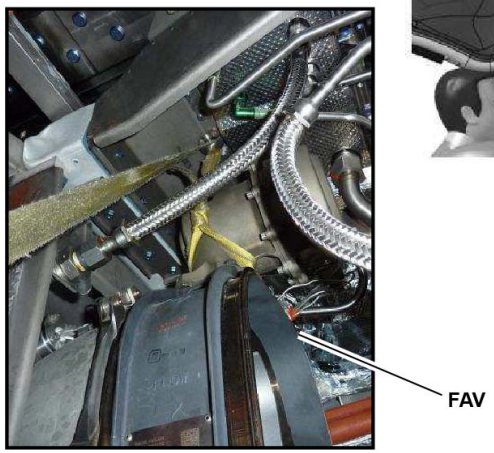


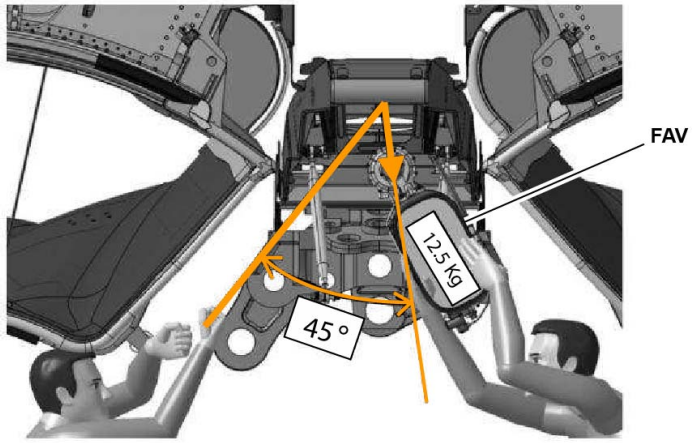


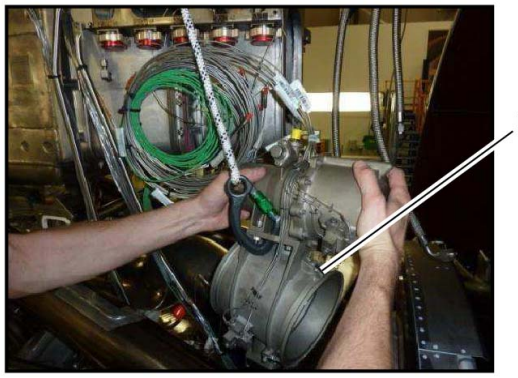
MPV / HPV / FAV

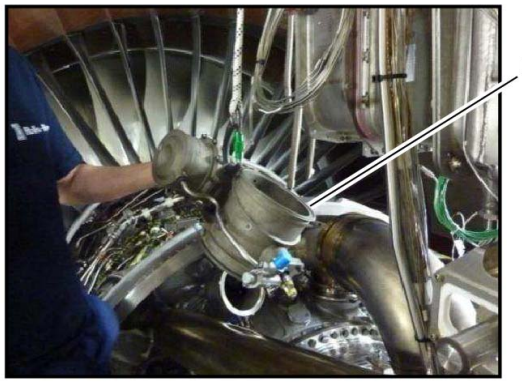
FAV: Fan Air Valve
HPV: High Pressure Bleed Valve
MPV: Manifold Pressure Valve

MAINTENANCE NOTE - ENGINE BLEED AIR SYSTEM (EBAS) VALVES REMOVAL/INSTALLATION









MAINTENANCE NOTE - ENGINE BLEED AIR SYSTEM (EBAS) VALVES REMOVAL/INSTALLATION

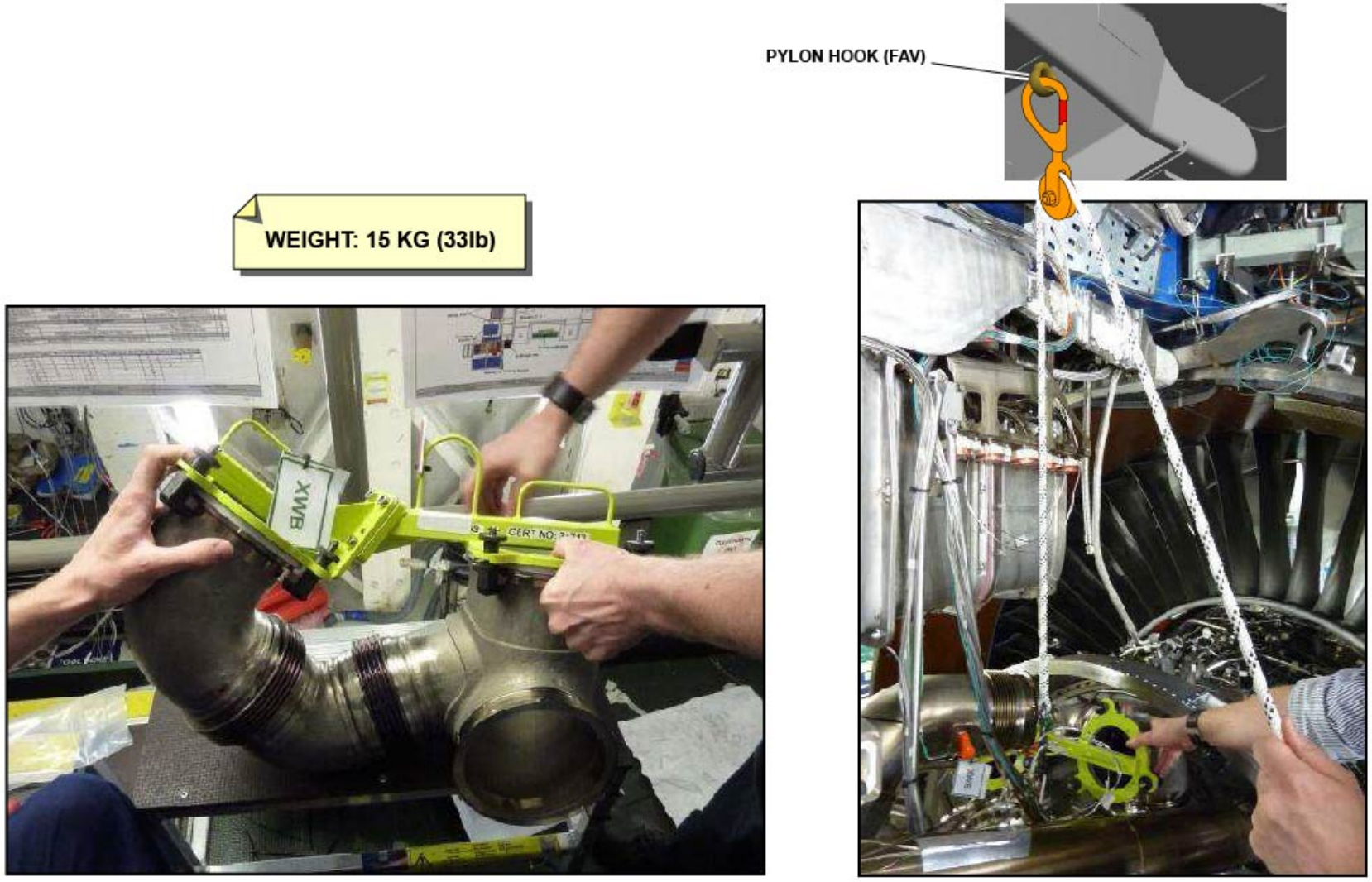
This Page Intentionally Left Blank

PNEUMATIC SYSTEM MAINTENANCE (3)

MAINTENANCE NOTE (continued)

T-Duct Removal/Installation

The replacement of the T-duct (weight = 15 Kg (33 lb)), between Intermediate Pressure Check Valve (IPCV), HPV and MPV is done by 2 mechanics using GSE with a simple sling fitted on the FAV pylon hook.



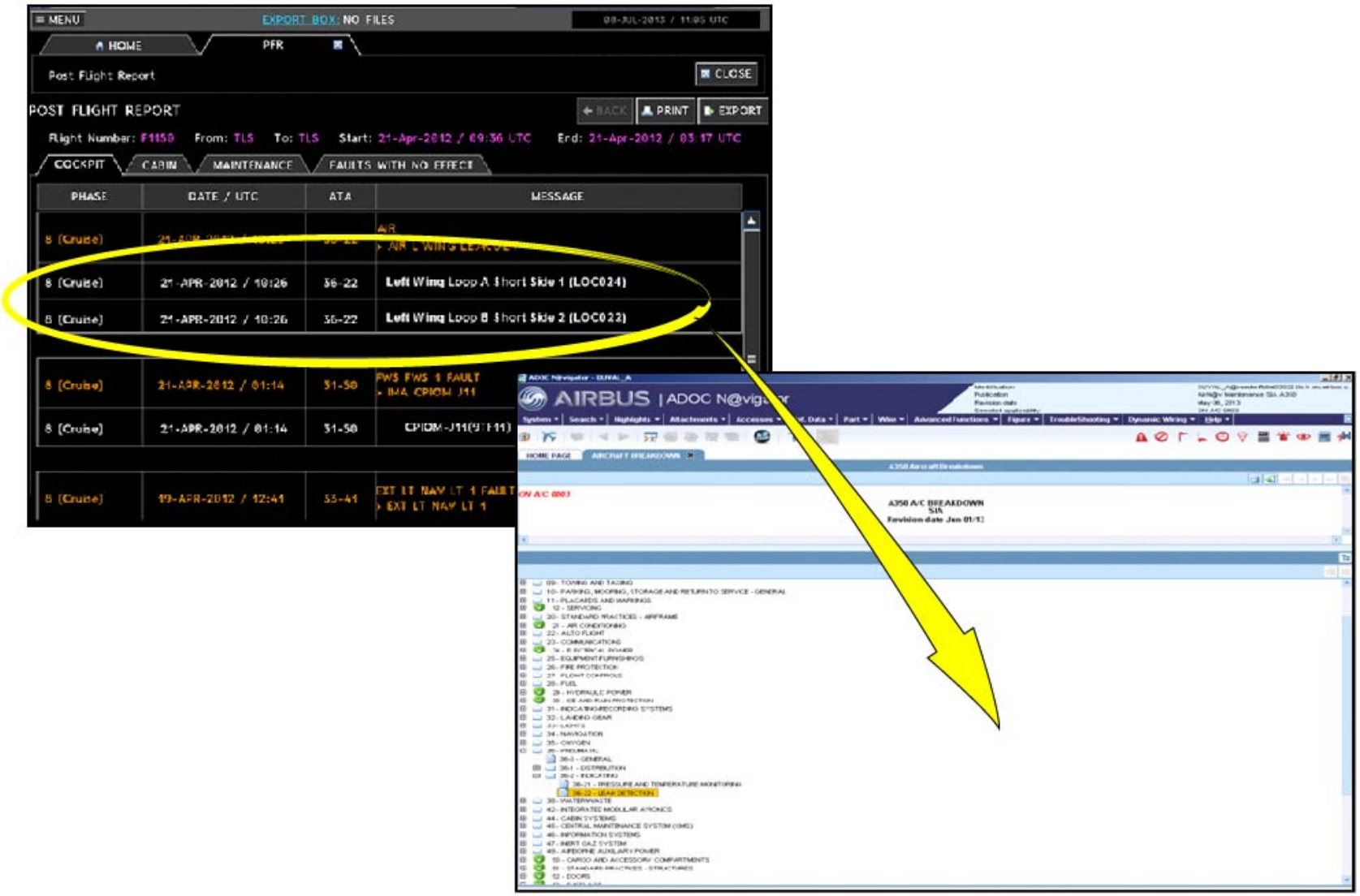
MAINTENANCE NOTE - T-DUCT REMOVAL/INSTALLATION

PNEUMATIC SYSTEM MAINTENANCE (3)

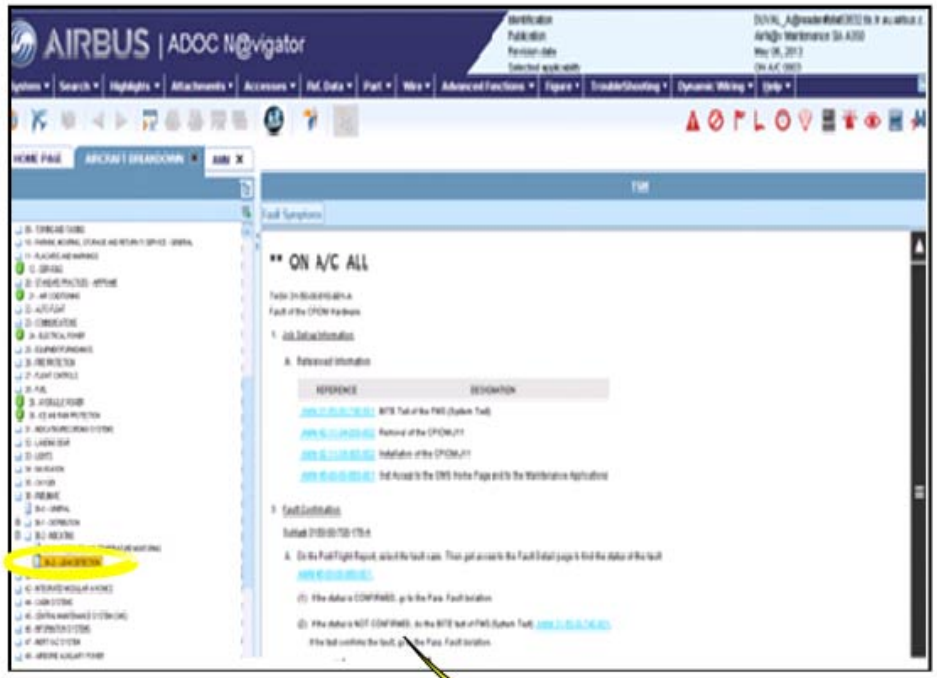
MAINTENANCE NOTE (continued)

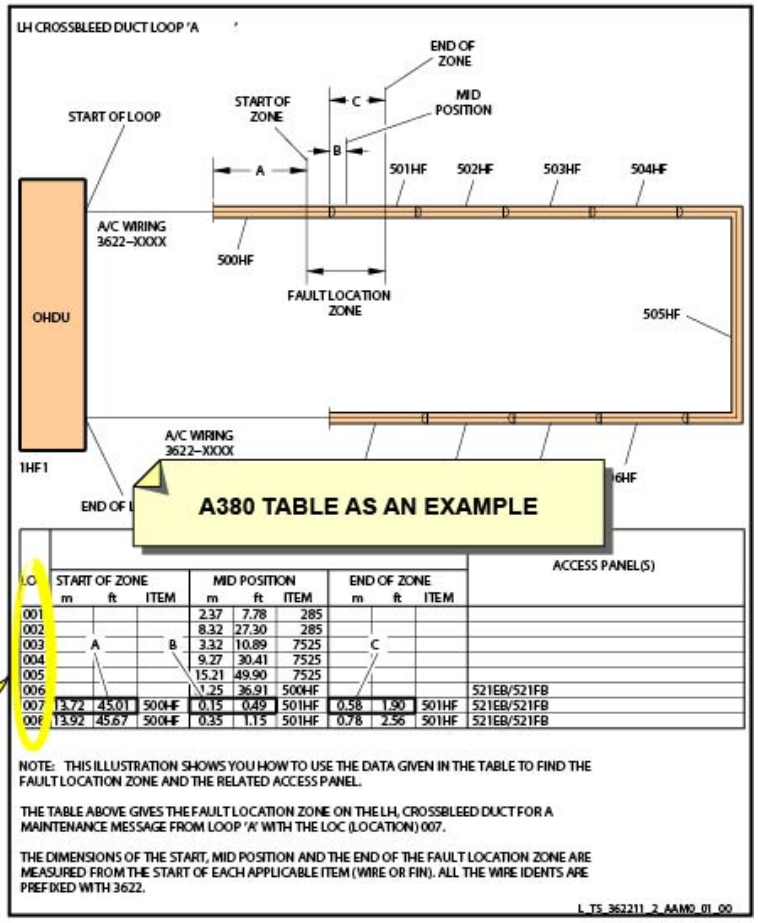
Bleed Air Leak Localization

In case of bleed air leak or loop overheat detection failure, the maintenance crew can get the corresponding location through the CMS message that gives the location data. This data is used to get access to a table in TSM, where the fault location zone and the related access panel references are given for the troubleshooting.



MAINTENANCE NOTE - BLEED AIR LEAK LOCALIZATION





LOC	START OF ZONE m	ft	ITEM	MID POSITION m	ft	ITEM	END OF ZONE m	ft	ITEM	ACCESS PANEL(S)
001				2.37	7.78	285				
002				8.32	27.30	285				
003	A		B	3.32	10.89	7525	C			
004				9.27	30.41	7525				
005				15.21	49.90	7525				
006				11.25	36.91	500HF				521EB/521FB
007	13.72	45.01	500HF	0.15	0.49	501HF	0.58	1.90	501HF	521EB/521FB
008	13.92	45.67	500HF	0.35	1.15	501HF	0.78	2.56	501HF	521EB/521FB

NOTE: THIS ILLUSTRATION SHOWS YOU HOW TO USE THE DATA GIVEN IN THE TABLE TO FIND THE FAULT LOCATION ZONE AND THE RELATED ACCESS PANEL.

THE TABLE ABOVE GIVES THE FAULT LOCATION ZONE ON THE LH, CROSSBLEED DUCT FOR A MAINTENANCE MESSAGE FROM LOOP 'A' WITH THE LOC (LOCATION) 007.

THE DIMENSIONS OF THE START, MID POSITION AND THE END OF THE FAULT LOCATION ZONE ARE MEASURED FROM THE START OF EACH APPLICABLE ITEM (WIRE OR FIN). ALL THE WIRE IDENTS ARE PREFIXED WITH 3622.

L_TS_362211_2_AAM0_01_00

MAINTENANCE NOTE - BLEED AIR LEAK LOCALIZATION

This Page Intentionally Left Blank

PNEUMATIC SYSTEM CONTROL AND INDICATING (2/3)

Pneumatic System - General (2)

The Bleed system controls are located on the lower part of the AIR panel (Overhead panel). The Bleed system parameters are displayed on the ECAM BLEED page that can be manually selected using the BLEED key of the ECP.
Each engine bleed air system is controlled by a dedicated ENG BLEED P/BSW.
The APU bleed air supply is controlled by the APU BLEED P/BSW.

HP Ground Cart Bleed Supply (2)

When HPGC is connected and supplying air pressure above 20psi, the green triangle and GND white indications are displayed on the BLEED page. The CBV, that is normally open while the system is not pressurized, will remain open provided the XBLEED selector is in AUTO position.

APU Bleed Supply (2)

When the APU BLEED P/BSW is set to ON (blue ON light illuminated), the APU Bleed valve opens and then the Cross-bleed valve opens provided the XBLEED selector is set in the AUTO position. The HPV, MPV and OPSOV are closed to isolate the engine bleed.
An amber FAULT light illuminates on the APU BLEED P/BSW if the APU Bleed valve fails to open or in case of bleed air leak detected along the APU bleed duct (with associated alert triggered on ECAM).

APU Bleed leak (3)

If a leak is detected along the APU bleed air ducts, the OHDS logic generates:
- CBV auto-closure, if its selector is in AUTO position,
- APU bleed valve auto-closure,
- FAULT light illumination on the APU BLEED P/Bsw.

Engine Bleed supply (2)

Each ENG BLEED P/BSW controls its related engine bleed system valves:
o When released out (OFF light illuminated), the corresponding MPV, HPV and FAV are commanded to close through the related Remote Servo (RS) and the OPSOV is commanded to close through its solenoid.
o When pressed in (OFF light is off), the corresponding MPV and HPV regulate the bleed air pressure, the OPSOV is fully open (normal condition) and the FAV regulate the fan airflow sent to the PCE for bleed air temperature regulation.
When the engine is not running, all related engine bleed valves (including the OPSOV) are maintained in the closed position.
A FAULT light illuminates when a failure has been detected in the related engine bleed system; it is associated to an ECAM alert.
On the BLEED page FAV and OPSOV are not displayed
Since the APU bleed air supply has always priority over the engine bleed air supply, the HPV, MPV, FAV and OPSOV of each engine are automatically controlled to the closed position as soon as the APU BLEED P/BSW is set to ON in order to isolate both engine bleed air systems.
A smooth switching from engine bleed to APU bleed is required to ensure a continuous and regular air supply to the AGS.
The three-position XBLEED selector permits to control the Crossbleed valve (CBV) position either automatically or manually. The CBV position is displayed on the BLEED page.
In the AUTO position, the CBV is automatically controlled depending on the bleed air sources configuration (as per BAS application logic):
- Closed position when both engine bleed air systems are operating,
- Open position when air pressure is supplied either from the HP ground cart or from the APU. It is also automatically open when no air pressure is available or in case of failure of one engine bleed air system.

When the selector is manually set to CLOSE, the CBV moves to the closed position, and when it is set to OPEN, the CBV opens. The manual control has always priority, overriding the BAS application logic.

Engine Bleed - HP/IP Switching (3)

For each running engine, when the related thrust lever is at IDLE and the related BLEED P/Bsw is selected ON:
- the HPV bleed valve is open and regulates,
- the MPV is fully open when HPV regulates,
- the OPSOV is fully open as per normal operation,
- the FAV regulates fan airflow through the precooler, to adjust the EBAS outlet temperature.
- Pressure / temperature indications are displayed on BLEED page.

When air is supplied from both engines, the CBV valve is normally closed.
The APU check valve prevents reverse flow.
At engine low power setting, the HPV opens and regulates bleed air pressure (value depends on A/C altitude and system configuration). The IPCV is closed to prevent reverse flow into IP compressor.
At higher power setting, the HPV closes and air pressure is bled from IP compressor port through the IPCV.

Engine 1 Bleed Fault (MPV stuck OPEN) (3)

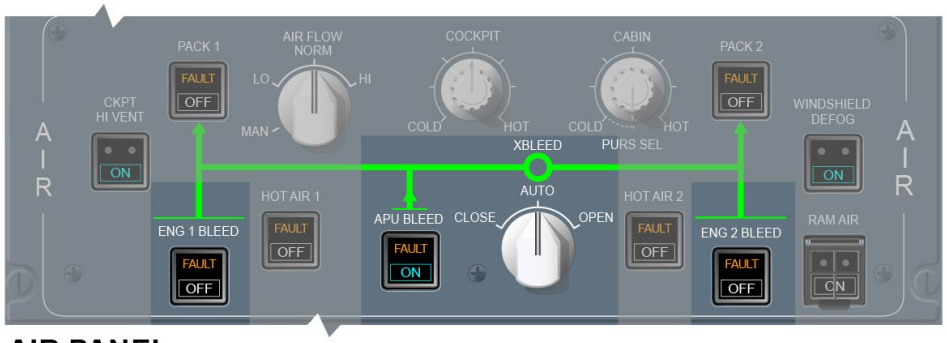
In case of overpressure detection (from BAS IMA or BAS BAM application), the related MPV, HPV and OPSOV are automatically commanded to close with corresponding warning generation. In case of failure of this automatic protection, the OPSOV will ensure air pressure limitation (90 psi) in order to protect the downstream systems against excessive overpressure.
As per ECAM action, the related ENG BLEED P/BSW must be set to OFF in order to isolate completely the affected system.

Engine 1 Bleed Fault (HPV stuck OPEN) (3)

In case of overtemperature detection (from BAS IMA or BAS BAM application), the related MPV, HPV and OPSOV are automatically commanded to close with corresponding warning generation.
As per ECAM action, the related ENG BLEED P/BSW must be set to OFF in order to isolate completely the affected system.

Wing Bleed leak (3)

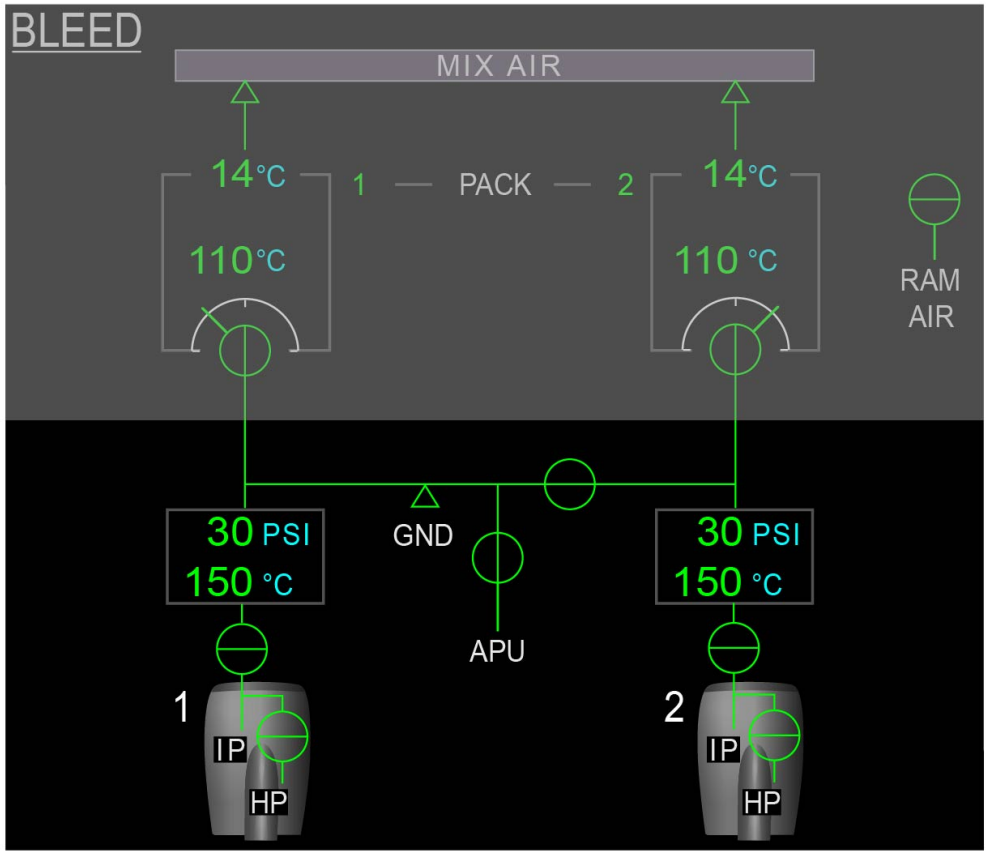
In case of leak detection, the OHDS isolates the affected side:
- the related MPV, HPV and FAV are commanded to close,
- the CBV is commanded to closure if its selector is in AUTO,
- the related FCV is commanded to close.



AIR PANEL

ECAM CONTROL PANEL

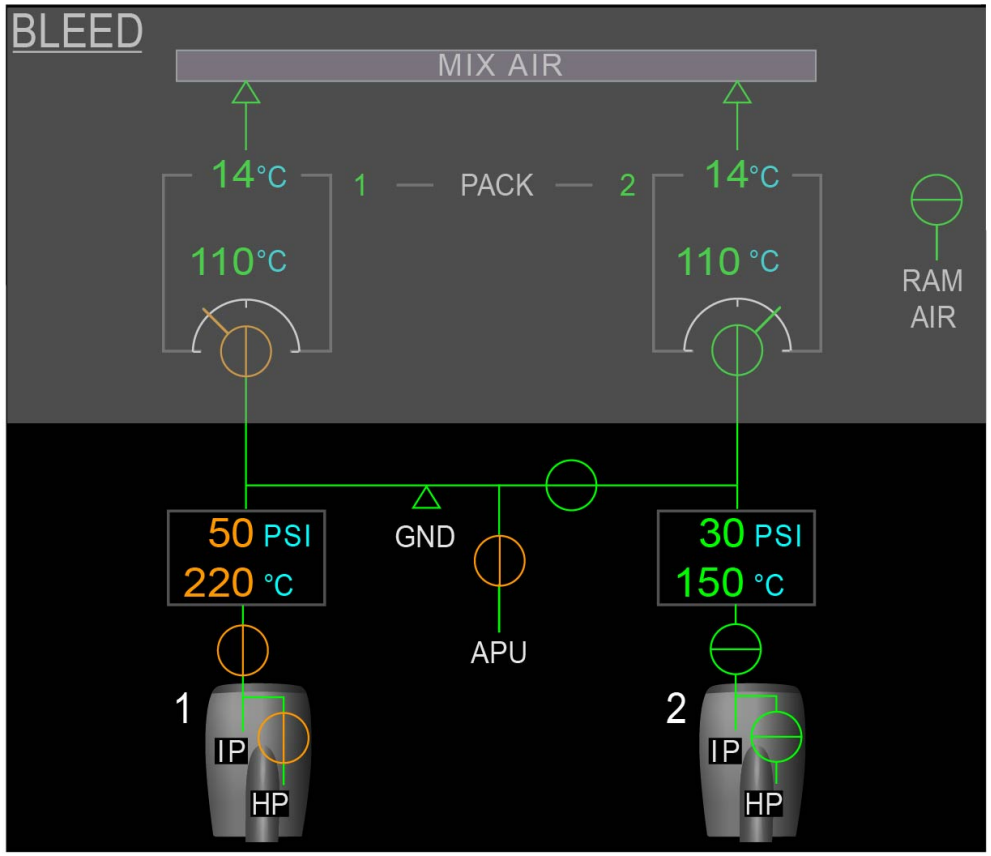
PNEUMATIC SYSTEM - GENERAL (2) ... WING BLEED LEAK (3)



BLEED SD PAGE

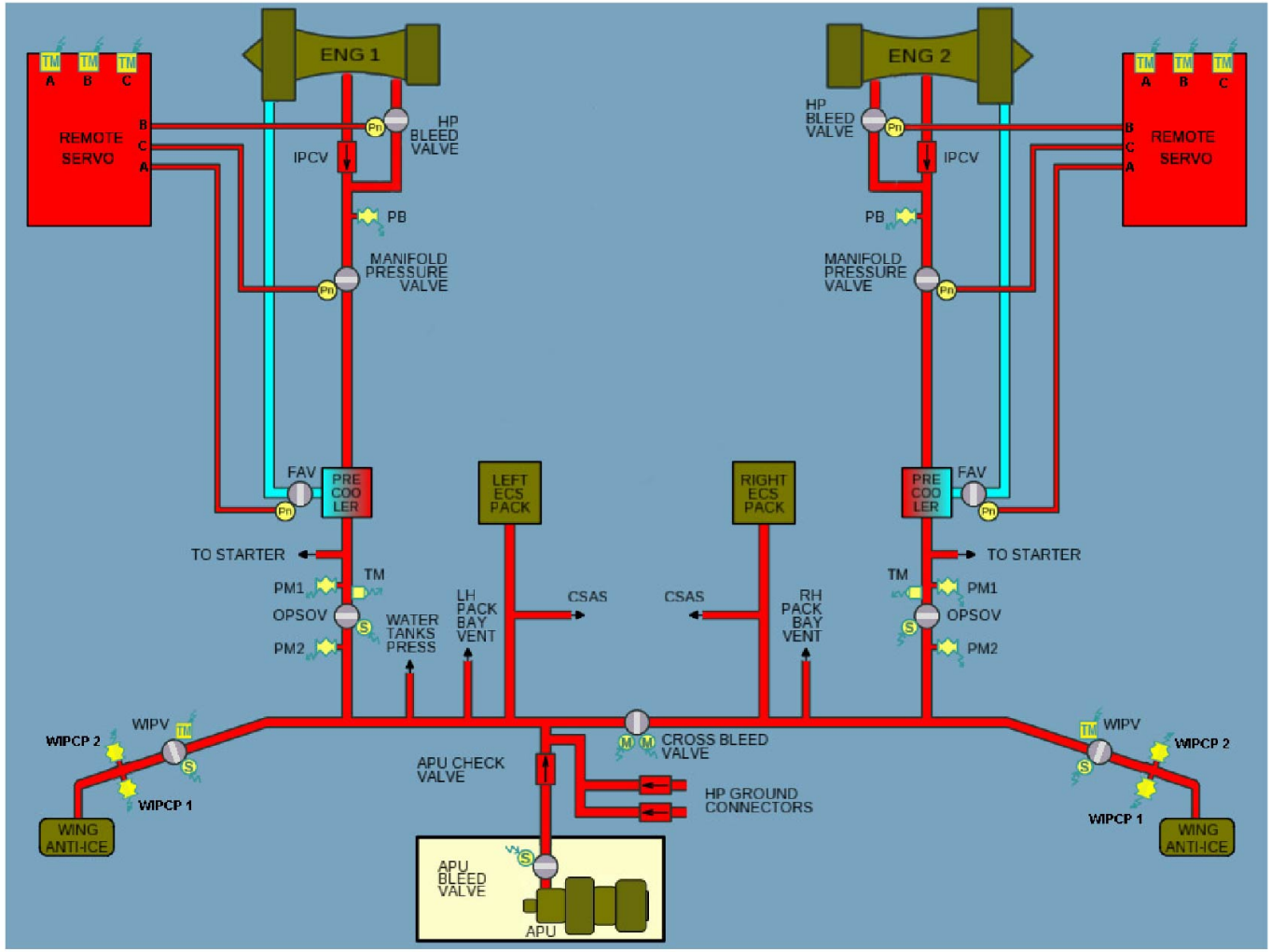
This SD page shows all available indications but not a system configuration

PNEUMATIC SYSTEM - GENERAL (2) ... WING BLEED LEAK (3)



BLEED SD PAGE ABNORMAL

This SD page shows all available indications but not a system configuration



PNEUMATIC SYSTEM - GENERAL (2) ... WING BLEED LEAK (3)

AIRBUS S.A.S.
31707 BLAGNAC cedex, FRANCE
STM
REFERENCE V1813401
OCTOBER 2013
PRINTED IN FRANCE

AN EADS COMPANY