

<b>jetBlue</b> A320 Flight Crew Operating Manual	<b>Landing Gear</b>		<b>Pg. 13-38</b>	
	<b>Brakes And Anti-Skid</b>		<b>Vol. II</b>	<b>REV 00</b>

The pilot controls the braking with the pedals (acting on the dual valves). Alternate servo valves are fully open. The pilot must refer to the triple indicator to limit brake pressure in order to avoid locking a wheel. The accumulator can supply at least 7 full brake applications. Autobrake is inoperative.

**\*\*EFFECTIVE ON A/C: ALL**

### **Parking Brake**

**\*\*EFFECTIVE ON A/C: 503 - 517**

Setting the PARKING BRK deactivates the other braking modes and the anti-skid system.

**\*\*EFFECTIVE ON A/C: 519 and later**

If the parking brake is activated and no yellow hydraulic or accumulator brake pressure is available, then the normal braking system can be applied via the brake pedals.

**\*\*EFFECTIVE ON A/C: 503 - 665**

The yellow hydraulic system or accumulators supply brake pressure via the dual shuttle valves. Alternate servo valves open to allow the application of full pressure.

**\*\*EFFECTIVE ON A/C: 703 and later**

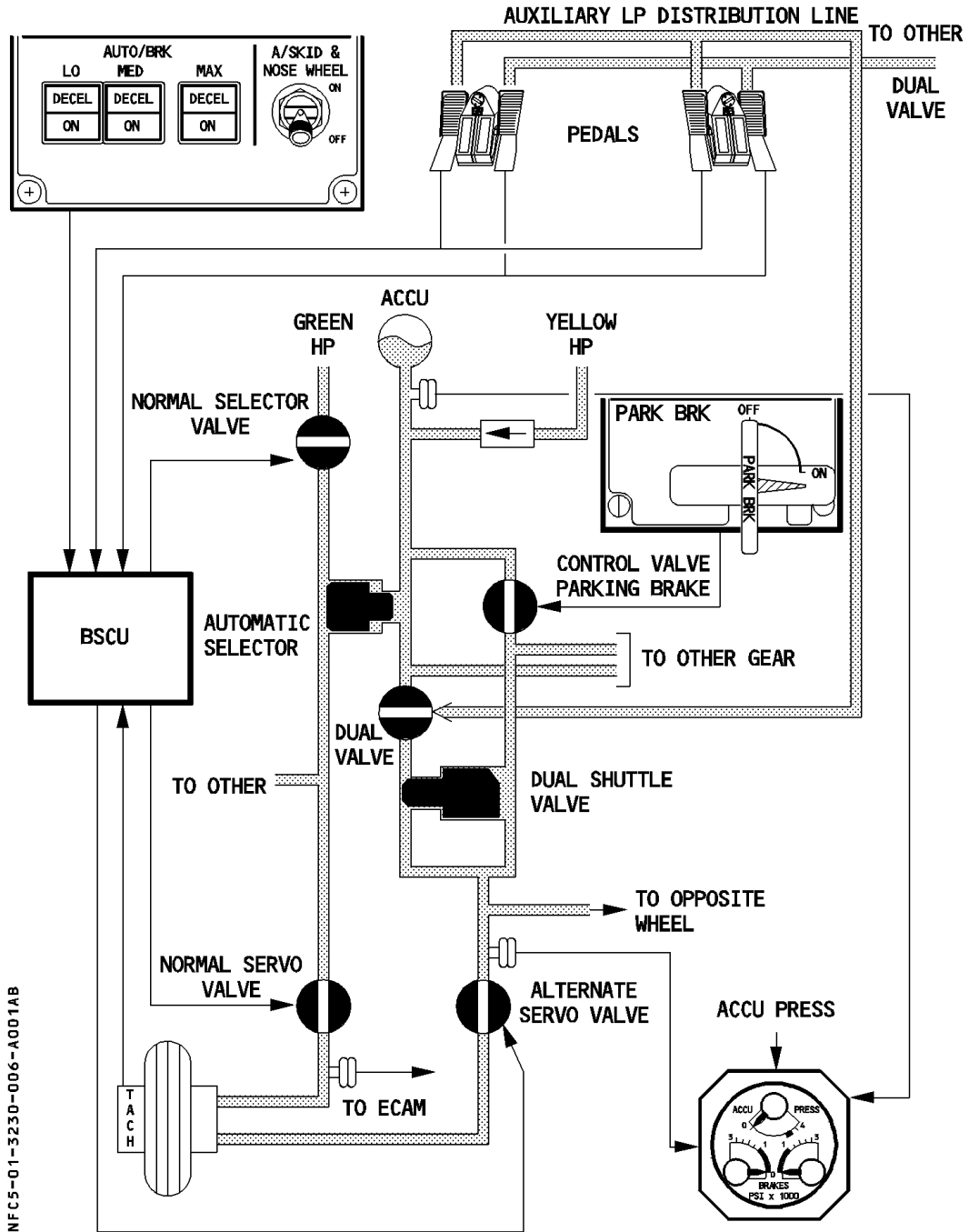
The yellow hydraulic system or accumulators supply full brake pressure to the main gear wheels through the parking brake control valve.

**\*\*EFFECTIVE ON A/C: ALL**

Accumulators maintain the parking pressure for at least 12 hours. Yellow accumulators can be pressurized by pressing the yellow electric pump switch. Brake and accumulator pressure are indicated on the triple indicator.

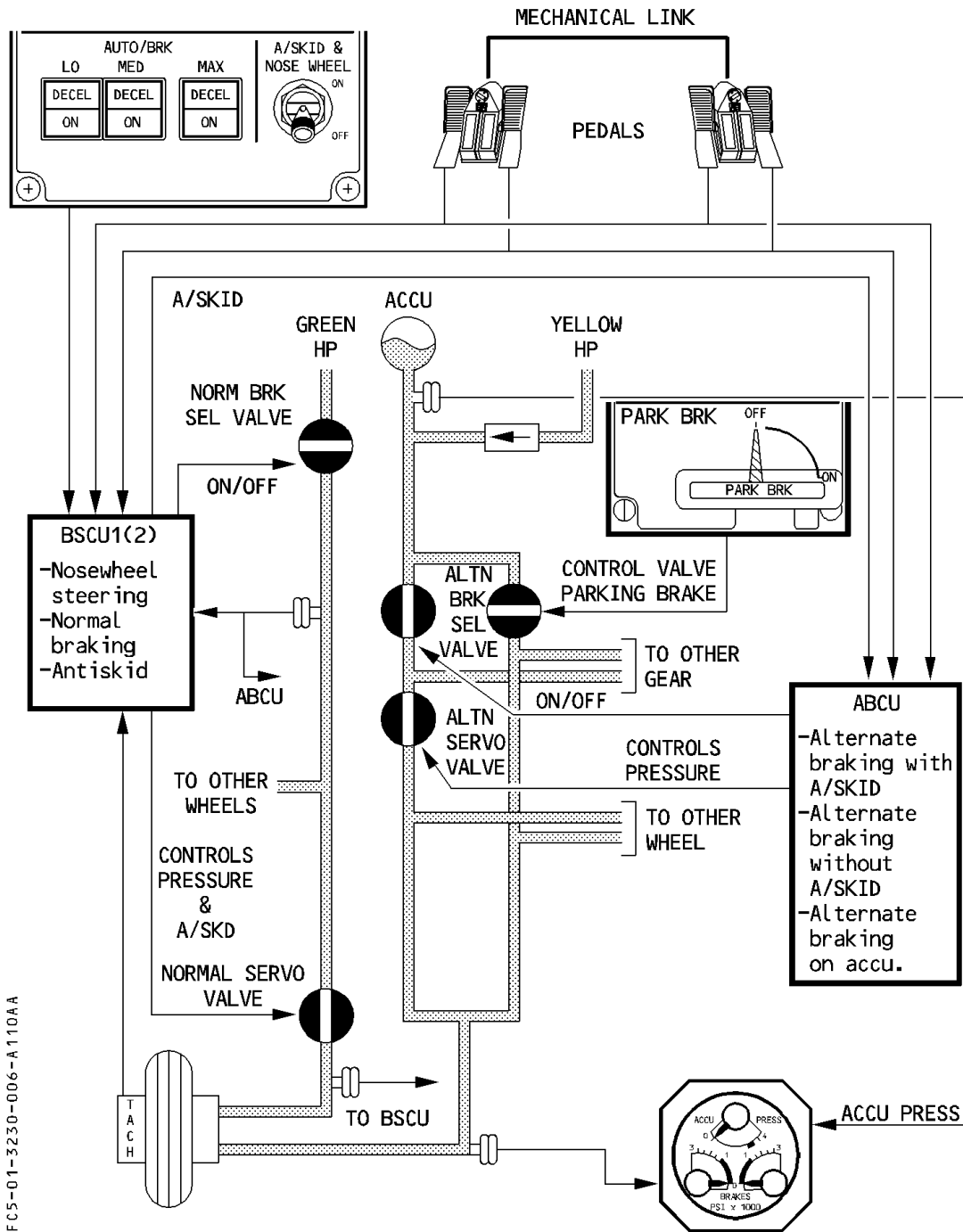
13.2.1.7 Braking Schematic

**\*\*EFFECTIVE ON A/C: 503 - 665**



NFC5-01-3230-006-A001AB

**\*\*EFFECTIVE ON A/C: 703 and later**



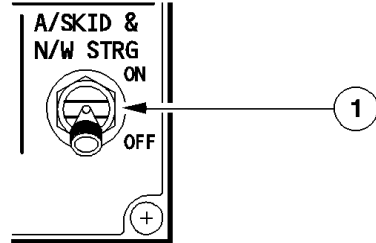
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**\*\*EFFECTIVE ON A/C: ALL**

### 13.2.2 Controls And Indicators

#### 13.2.2.1 Center Instrument Panel

NFC5-01-3230-007-A001A



**\*\*EFFECTIVE ON A/C: 503 - 665**

#### 1 - A/SKID & N/W STRG SW

- **ON:** If green hydraulic pressure is available:
  - Anti-skid is available.
  - Nose wheel steering is available.
  - If green hydraulic pressure is lost:
    - Yellow hydraulic pressure takes over automatically to supply the brakes.
    - Anti-skid remains available.
    - Nose wheel steering is lost.
    - The triple indicator shows yellow system brake pressure.
- **OFF:** Yellow hydraulic system supplies pressure to the brakes.
  - Anti-skid is deactivated. The pilot must refer to the triple indicator to limit brake pressure and avoid locking a wheel.
  - Nose wheel steering is lost.
  - Differential braking remains available through the pedals.
  - The triple indicator displays yellow system brake pressure.

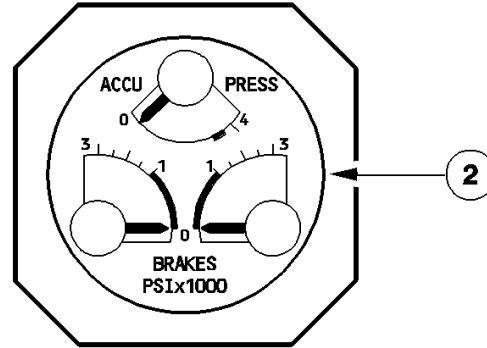
**\*\*EFFECTIVE ON A/C: 703 and later**

#### 1 - A/SKID & N/W STRG SW

- **ON:** If green hydraulic pressure is available, then antiskid is available:
  - If green hydraulic pressure is lost:
    - Yellow hydraulic pressure takes over automatically to supply the brakes.
    - Anti-skid and nosewheel steering remain available.
    - The triple indicator shows yellow system brake pressure.
- **OFF:** Yellow hydraulic system supplies pressure to the brakes.
  - Anti-skid is deactivated. The pilot must refer to the triple indicator to limit brake pressure and avoid locking a wheel.
  - Nose wheel steering is lost.
  - Differential braking remains available through the pedals.
  - The triple indicator displays yellow system brake pressure.

**\*\*EFFECTIVE ON A/C: ALL**

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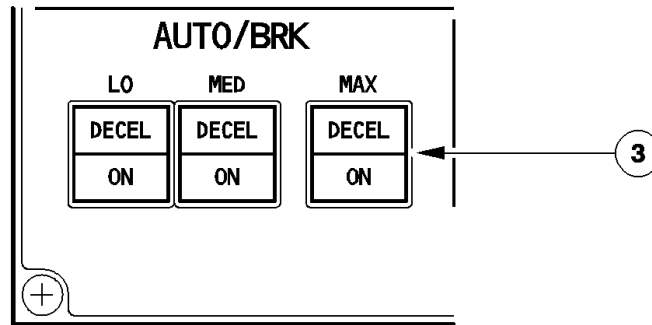


### 2 - BRAKES AND ACCU PRESS INDICATOR

- Brake pressure is only indicated when the yellow hydraulic system controls the brake pressure, which means when the:
  - Alternate braking system is activated, or
  - Parking brake is applied
- **ACCU PRESS:** Indicates the pressure in the yellow brake accumulators.
- **BRAKES:** Indicates the yellow pressure delivered to the left and right brakes, as measured upstream of the alternate servo valves.

### AUTO BRK Panel

NFC5-01-3230-008-A100AA



### 3 - AUTO/BRK PANEL

- The springloaded **MAX**, **MED**, and **LO** pushbutton switches arm the appropriate deceleration rate.
- MAX mode is normally selected for takeoff.
  - If the pilot aborts the takeoff, maximum pressure goes to the brakes as soon as the system generates the ground spoiler deployment order.
- MED or LO mode is normally selected for landing.
- LO mode sends progressive pressure to the brakes 4 seconds after the ground spoilers deploy in order to decelerate the aircraft at 1.7 meters/second<sup>2</sup> (5.6 feet/second<sup>2</sup>).
- MED mode sends progressive pressure to the brakes 2 seconds after the ground spoilers deploy in order to decelerate the aircraft at 3 meters/second<sup>2</sup> (9.8 feet/second<sup>2</sup>).

- Lights:
  - The blue **ON** light comes on to indicate positive arming.
  - The green **DECEL** light comes on when the actual deceleration is 80% of the selected rate.

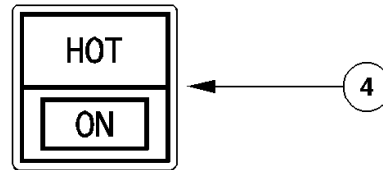
NOTE

On slippery runway, the predetermined deceleration may not be reached due to antiskid operation. In this case **DECEL** light will not illuminate. This does not mean that autobrake is not working.

- **OFF**: The indicated brake mode is not active.

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### BRK FAN

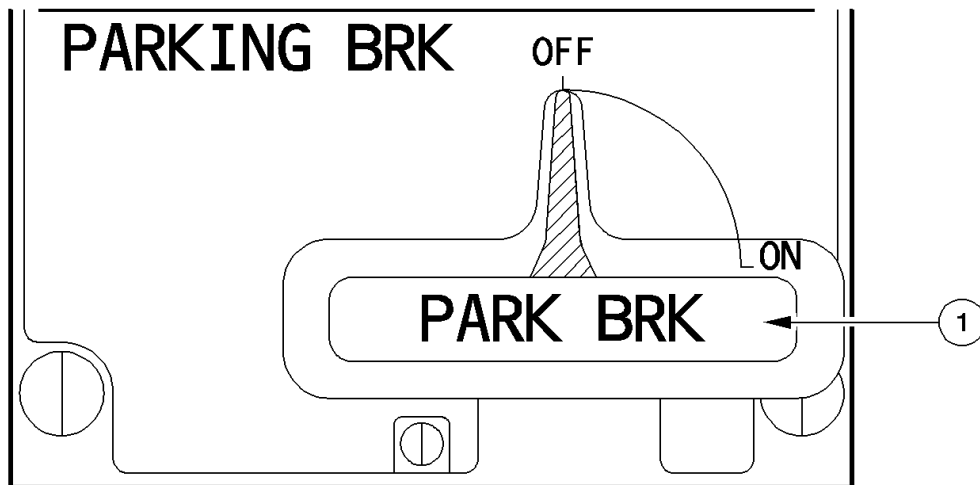


#### 4 - BRK FAN PB SW

- **ON**: The brake fans run if the lefthand main landing gear is down and locked.
- **OFF**: The brake fans stop.
- **HOT It**: This amber light comes on when the brakes get too hot. (A caution appears on ECAM, also.)

#### 13.2.2.2 Pedestal

NFC5-01-3230-009-B001AA



### 1 - PARKING BRK HANDLE

**\*\*EFFECTIVE ON A/C: 503 - 517**

- Applying the parking brake deactivates all the other braking modes.

**\*\*EFFECTIVE ON A/C: ALL**

- Flight Crew pulls this handle, then turns it clockwise, to apply the parking brake.
- The ECAM memo page displays “PARK BRK”.

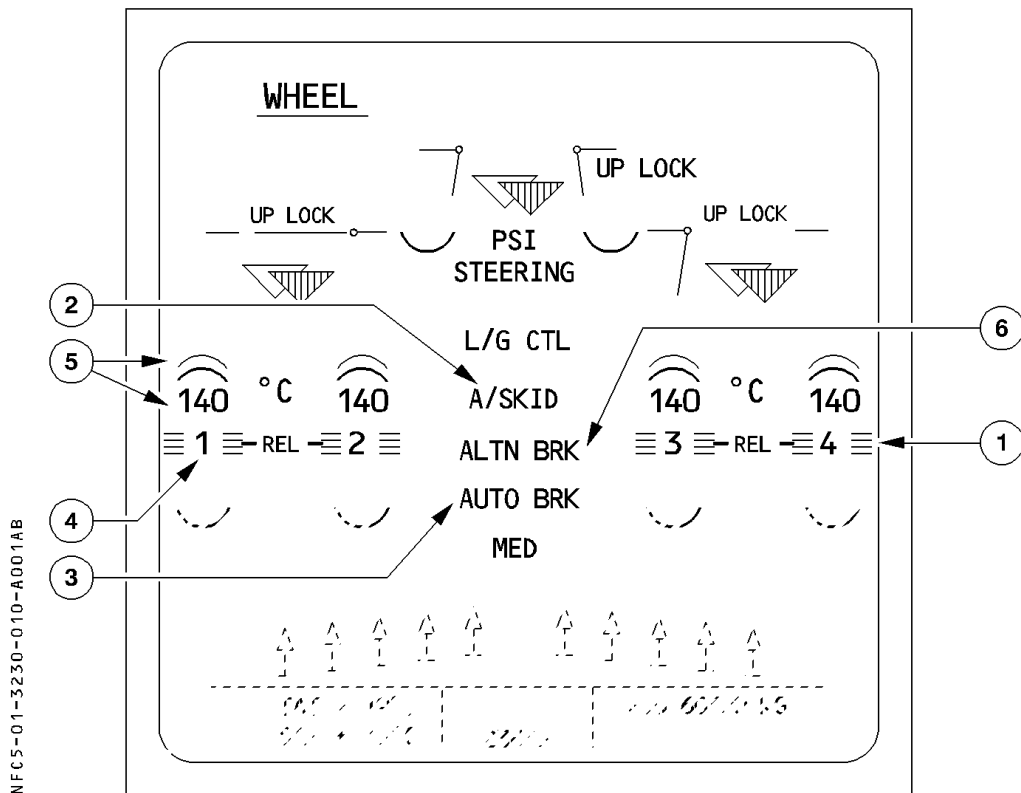


**CAUTION**

*If the pointer is not at ON, the parking brake is not on.*

### 13.2.2.3 ECAM WHEEL Page

**\*\*EFFECTIVE ON A/C: 503 - 588 equipped with EIS (CRT)**



### 1 - RELEASE INDICATORS

- (≡) These green lines appear temporarily after the landing gear has been lowered to indicate that the anti-skid function is ready.
- They reappear after touchdown, along with REL (blue), when the anti-skid is active.

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## 2 - A/SKID

This legend appears in amber, along with an ECAM caution, in case of total BSCU failure, or when the **A/SKID & N/W STRG** switch is OFF, or if the BSCU detects an ANTI-SKID failure.

## 3 - AUTO BRK

- This legend appears:
  - In green when auto brake is armed,
  - Flashing green for 10 seconds after autobrake disengagement.
  - In amber, along with an ECAM caution, to indicate a system failure.
- MED, LO, or MAX appears underneath in green to show which rate has been selected.

## 4 - WHEEL NUMBER

This white number identifies individual wheels of the main landing gear.

## 5 - BRAKE TEMPERATURE

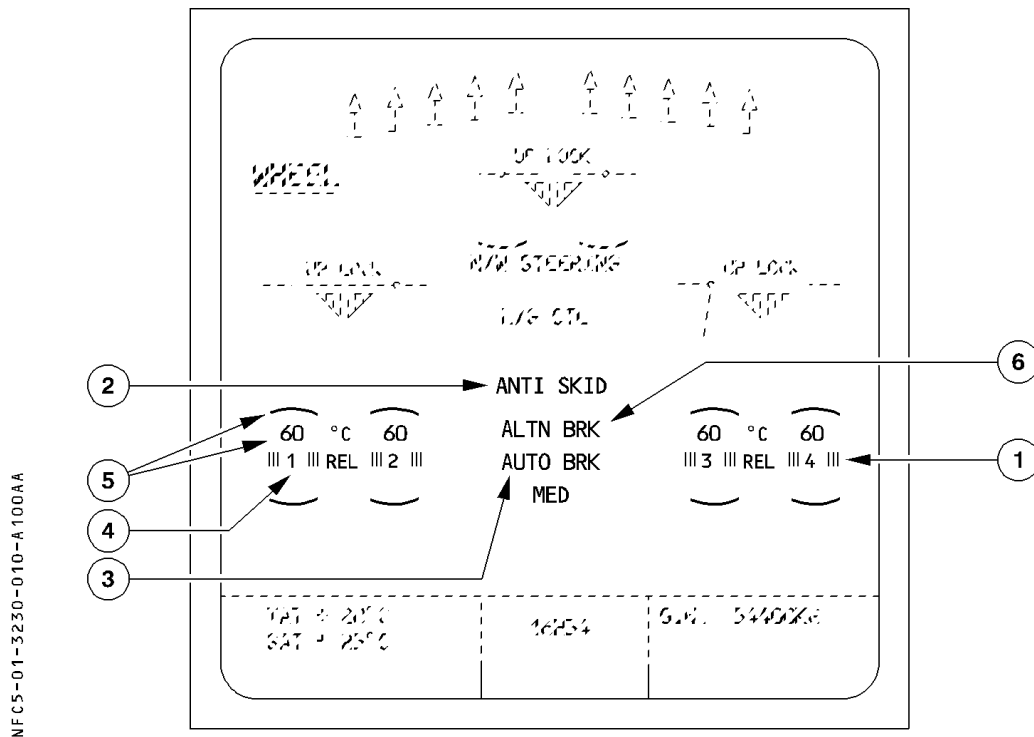
- The temperature normally appears in green.
- The green arc appears on the hottest wheel when one brake temperature exceeds 100°C
- The green arc becomes amber, and an ECAM caution appears, when the corresponding brake temperature exceeds 300°C.

## 6 - ALTN BRK

- This legend appears in green if the braking system is in alternate mode.



**\*\*EFFECTIVE ON A/C: 589 and later equipped with EIS II (LCD)**



### 1 - RELEASE INDICATORS

- (III) These green lines appear temporarily after the landing gear has been lowered to indicate that the anti-skid function is ready.
- They reappear after touchdown when the anti-skid is active.

### 2 - A/SKID

This legend appears in amber, along with an ECAM caution, in case of total BSCU failure, or when the **A/SKID & NW STRG** switch is OFF, or if the BSCU detects an ANTI-SKID failure.

### 3 - AUTO BRK

- This legend appears:
  - In green when auto brake is armed,
  - Flashing green for 10 seconds after autobrake disengagement.
  - In amber, along with an ECAM caution, to indicate a system failure.
- MED, LO, or MAX appears underneath in green to show which rate has been selected.

### 4 - WHEEL NUMBER

This white number identifies individual wheels of the main landing gear.

### 5 - BRAKE TEMPERATURE

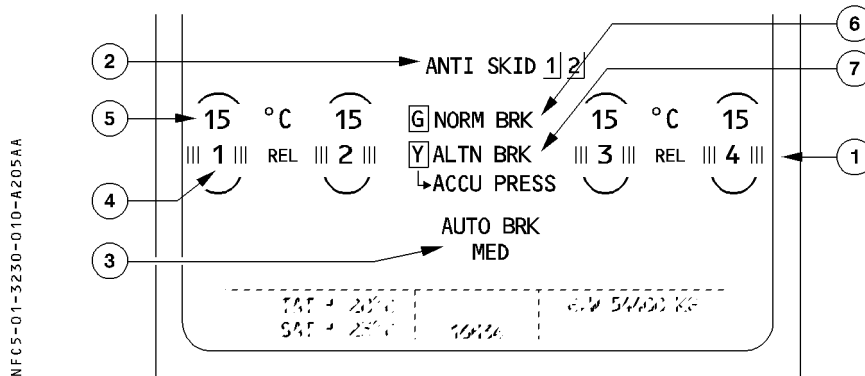
- The temperature normally appears in green.
- The green arc appears on the hottest wheel when one brake temperature exceeds 100°C

- The green arc becomes amber, and an ECAM caution appears, when the corresponding brake temperature exceeds 300°C.

### 6 - ALTN BRK

- This legend appears in green if the braking system is in alternate mode.

**\*\*EFFECTIVE ON A/C: 703 and later**



### 1 - RELEASE INDICATORS

(III) It appears in amber in case of brake released fault.

### 2 - ANTISKID INDICATION



NFC5-01-3230-010-B205AA

### A - ANTISKID LABEL

It appears in amber, along with an ECAM caution, in case of a total BSCU failure, or when the A/SKID and N/W STRG switch is OFF, or if the BSCU detects an ANTI-SKID failure, or in case of normal braking and yellow hydraulic system low pressure. It appears in green in case of autobrake, normal braking, or alternate braking failure, and antiskid is still available.

### B - BSCU CHANNEL INDICATION

When ANTISKID label is displayed, the number of the failed system(s) is (are) displayed in amber, if any.

### 3 - AUTO BRK

- This legend appears:
  - In green when auto brake is armed,
  - Flashing green for 10 seconds after autobrake disengagement.
  - In amber, along with an ECAM caution, to indicate a system failure.
- MED, LO, or MAX appears underneath in green to show which rate has been selected.

#### 4 - WHEEL NUMBER

This white number identifies individual wheels of the main landing gear.

#### 5 - BRAKE TEMPERATURE

- The temperature normally appears in green.
- The green arc appears on the hottest wheel when one brake temperature exceeds 100°C
- The green arc becomes amber, and an ECAM caution appears, when the corresponding brake temperature exceeds 300°C.

#### 6 - NORM BRK INDICATION



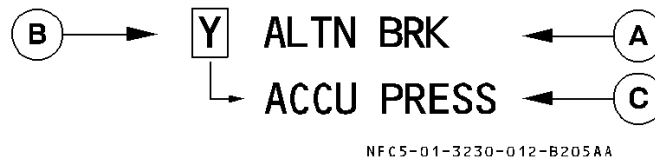
##### A - NORM BRK LABEL

- This indication appears in green when autobrake or alternate braking is failed, and normal braking is still available.
- The legend appears in amber when normal braking is failed due to total BSCU failure, or to the loss of the green hydraulic pressure, or to the loss of antiskid.

##### B - NORM BRK HYDRAULIC SUPPLY INDICATION

G is displayed when the NORM BRK label is displayed. It is green when green hydraulic pressure is available and amber, in case of green hydraulic low pressure.

#### 7 - ALTN BRK INDICATION



##### A - ALTN BRK LABEL

- This indication appears in green, if the braking system is in alternate mode and not failed, or in case autobrake or normal braking is failed and alternate braking is still available.
- This indication appears in amber when alternate braking is failed.

##### B - ALTN BRK HYDRAULIC SUPPLY INDICATION

Y is displayed when the ALTN BRK label is displayed. It is green when yellow hydraulic pressure is available and amber, in case of yellow hydraulic low pressure.

**C - ACCU INDICATIONS**

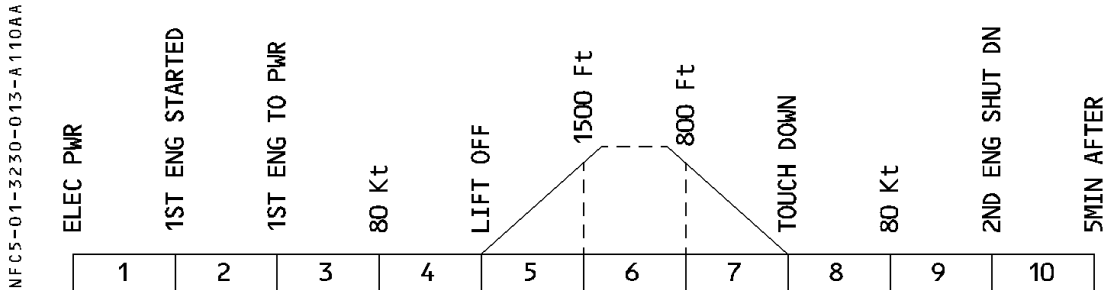
Y ALTN BRK  
 \* ↙ ACCU PR

Y ALTN BRK  
 \*\* ↖ ACCU ONLY

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- \* Appears in green, when the ALTN BRK label is displayed, and the yellow hydraulic pressure is available. Appears in amber, with no arrow, when the yellow hydraulic system and the accumulator are in low pressure.
- \*\* Appears in green when the alternate braking is pressurized by the yellow accumulator.

**13.2.3 Warnings And Cautions**



**\*\*EFFECTIVE ON A/C: ALL**

E/WD: Failure Title Condition	Aural Warning	Master Light	SD Page Called	Local Warning	FLT Phase Inhib
CONFIG PARK BRK ON Parking brake is on when thrust levers are set at TO or FLX TO power position	CRC	MASTER WARN	NIL	NIL	1, 2 5 to 10
PARK BRK ON* Parking brake is ON during flight	SINGLE CHIME	MASTER CAUT			WHEEL
BRAKES HOT One brake temperature higher than 300°C			4, 8** to 10*		
AUTO BRK FAULT Failure of autobrake when armed			3 to 5		
A/SKID NWS FAULT • loss of normal brake system associated with Y HYD sys lo press or • failure of both BSCU channels			4, 5		
ANTI SKID/NWS OFF Switch at OFF position			4, 5		
HYD SEL FAULT Failure of brake normal selector valve or NWS selector valve in open position			NIL	NIL	
SYS 1 (2) FAULT Failure of one BSCU channel	NIL	NIL			NIL

**\*EFFECTIVE ON A/C: With FWC H2-F3P (aircraft 705 and later and any retrofit aircraft) With(FWC) H2-F3P**

**\*\*EFFECTIVE ON A/C: 4, 8, 9, and 10 on aircraft 606 and later**