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TIME LIMITS / MAINTENANCE CHECKS

Manuel référence : **BRG-ALTP-02**

Référence document : **MC-STC-002**

				Statut (à compléter, terminé, approuvé)	**Signature du responsable conception**
Référence équipement: STC-002 **Pilatus PC-6**					
Révisions	Date	Sujet	Revised pages		
0	2010.05.17	Initial edition			
1	2012.02.23	Minor changes on §3.3			
2	2012.04.05	Update with ALS section			
3	2014.08.08	Update with optional small wheel			
4	2015.01.21	Update with axle for ski, update of maintenance intervals §2.3 and §3			
5	2015.08.05	Update with new disc DSC-011.2(A)			
6	2017.02.20	Update with new Brake pad PQT-016(A)			
7	2018.04.04	Update of the wear limit of DSC-011.2	all	Terminé	

This document (MC-STC-002) is the principal manual used for day to day maintenance.

Associated documents:
MM-STC-002 “Maintenance and overhaul manual” - revision 7

Table of contents

1. General

BERINGER brake system functioning is similar to original brake system except when dual (pilot + copilot brakes) are installed.

On original system only one of the two pilots can have the brake action due to shuttle valves.
With BERINGER there is no shuttle valve and both pilots can brake simultaneously.
The brake pressure at the wheel is then the highest reached by pilot or co-pilot

CAUTION: Both pilot and co-pilot can brake simultaneously

When using skis, an optional small main wheel size 24x7.7 can be installed in place of the 11.00-12 standard main wheels.

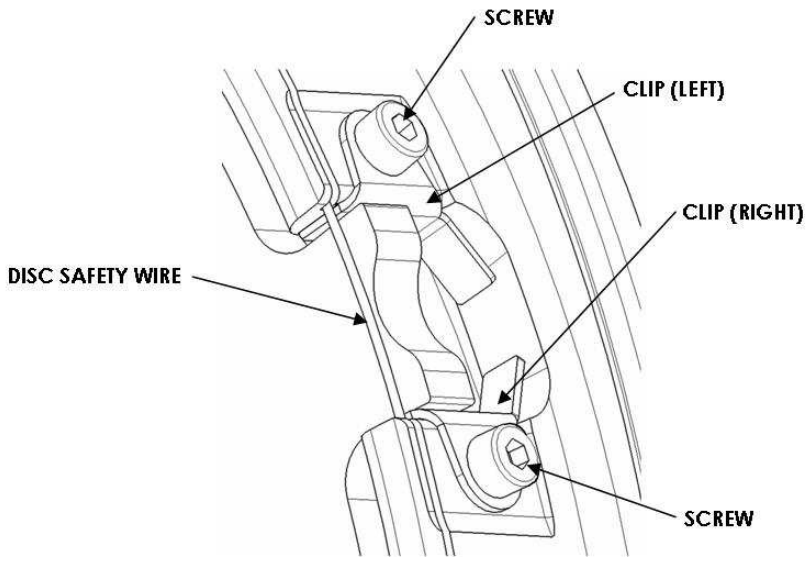
NOTE: Optional brake pad PQT-016(A) are only for use in specific conditions: high temperature and intensive use.

2. Scheduled maintenance checks

2.1. Flight maintenance checks

Next flight maintenance checks are in addition to PC-6 maintenance manual.

Additional flight maintenance checks	**Preflight inspection**
Component	**Operation**
Safety wire of brake disc	Visual inspection
Brake pads	Inspect for wear and damage



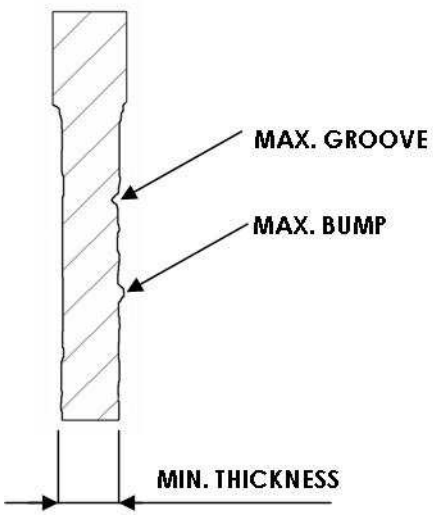
CAUTION: Disc safety wire must be in place, it prevents disc from sliding out the slots.

2.2. 100h / Annual inspection

Next maintenance checks replace corresponding ones into the PC-6 maintenance manual.

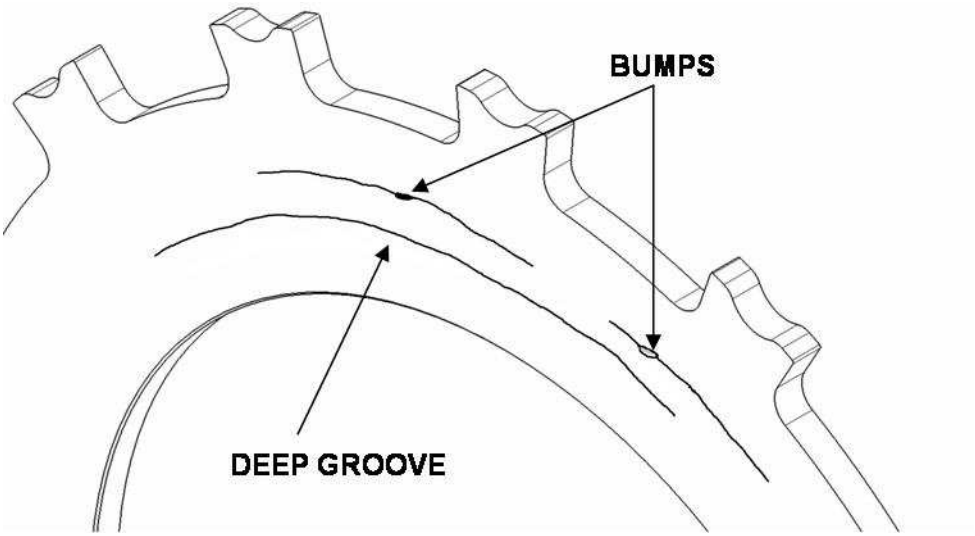
Inspection		Operation	
Component	**Wear limit**	**100h**	**Annual inspection**
Brake system	-	Check brake fluid level Apply brakes, examine system for leaks	
Brake system	0.6 mm 0.024 in	Check play between disc and key disc drive	
Main wheel tires	-	Examine Check inflation pressure	
Hydraulic Hoses	-	Examine	
Brake Disc DSC-011	6.4 mm 0.252 in	Check disc wear	Examine Check for wear
Brake Disc DSC-011.2*	6.4 mm ~~7.0 mm~~ 0.252 in ~~0.275 in~~	Check disc wear	Examine Check for wear
Brake Pads PQT-008 and PQT-016	Visual inspection	Check brake pad wear	Check brake pad wear
Main wheels	-	Examine	Remove from axle Examine bearings, valve, axles and wheels, lubricate bearings, change lip seal
Brake unit	-	Examine	Examine Disassemble, check pistons movement, check bolts
Tail wheel tire	-	Examine Check inflation pressure	
Tail wheel	-	Examine	Remove from landing gear Examine bearings, axle and wheel
Master cylinders	-	Examine	Remove axles, grease axles

***NOTE** : the wear limit on the DSC-011.2 disc has been lowered to reach the minimum wear of the DSC-011 disc. Below 7.0 mm, the DSC-011.2 disc is no more considered as a high energy disc.



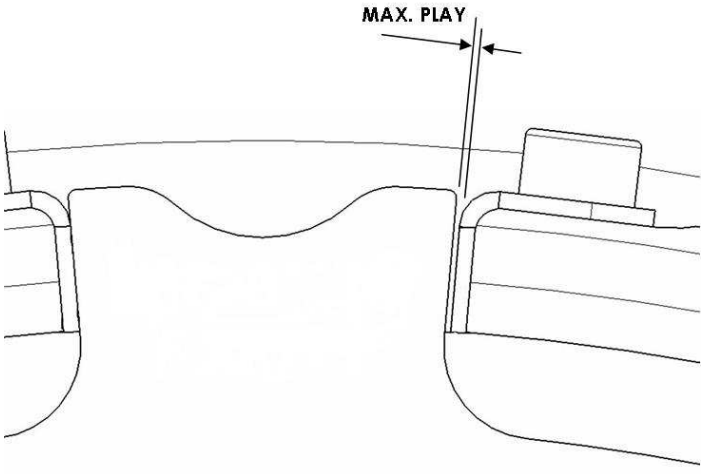
DISC WEAR LIMITS:

Min. Thickness DSC-011	6.4mm	0.252 in
Min. Thickness DSC-011.2	~~7.0mm~~	~~0.275 in~~
	6.4mm	0.252 in
Max. Coning	0.3mm	0.012 in
Max. Groove	0.2mm	0.008 in
Max. Bump	0.2mm	0.008 in



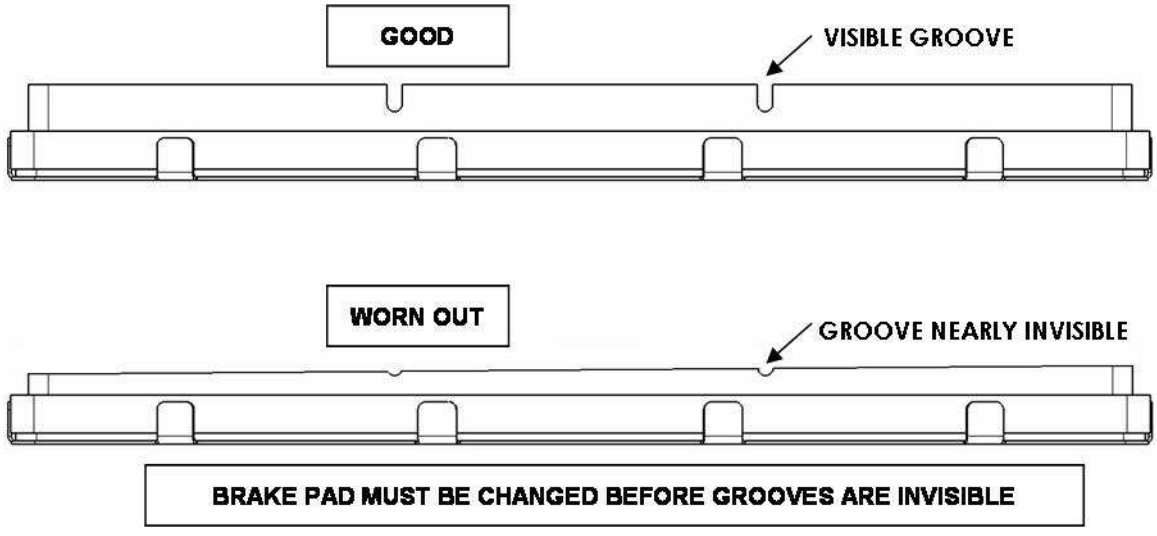
CLIP WEAR LIMITS:

Max. Play 0.6mm 0.024 in



PAD WEAR LIMITS:

Min. Thickness groove nearly invisible
Friction material min. thickness 2.5mm (0.100 in)



2.3. Replacement schedule of wear parts

Replacement schedule of wear parts		
Component - item	**Note**	**Replacement schedule**
Wheel assembly bolts	a	On condition 7 years
Main wheel bearings	-	On condition Immediate replacement if rust or marks
Bearing retaining ring (BGE-002 and BGE-004)	-	On condition 7 years
Main Wheel O-ring seals	-	On condition at each tire change
Main Wheel lip seal	-	at each removal from inner wheel half 1 year - annual inspection
Main wheel disc clips	a	On condition If found worn, all key disc must be replaced
Brake caliper seals and pistons	b	7 years
Brake assembly screws	b	On condition 7 years
Brake pad guides	b	On condition 7 years
Brake pads	c	On condition After each brake disc change 7 years
Brake discs	b	On condition 7 years
Tail wheel bearings	-	On condition 7 years

NOTE:

a All screws of the assembly must be changed at the same time. It is not allowed to change only few of them.

b Brake parts must be changed by pair on both left and right sides.

c Brake pads must be changed all 4 at the same time even if not worn out (the 2 on left side and the 2 on right side). When new brake discs are installed brake pads must be changed to new ones even if not worn out.

2.4. Conditioning procedures

When new brake pads have been installed, it is important to condition them properly to obtain the service life designed into them. Rated brake torque value is reached only after a full conditioning of brake pads and disc.

CAUTION: Brake torque value can be only 50% of rated brake torque before the conditioning. It means that even with full brake effort aircraft will not stop as usual. Pilot must take into consideration this parameter to avoid loose of aircraft control during the conditioning procedure.

CONDITIONNING PROCEDURE:

1. Taxi aircraft for 500m (1500 feet) with light brake effort.
2. Perform two (2) consecutive stops from 30 – 35 knots down to 5 knots. Apply light brake effort during these two stops; do not try to apply full brake effort.
3. Allow the brakes to cool for 10 to 15 minutes.
4. Apply brakes and check for restraint at high static throttle. If brakes hold, conditioning is complete.
5. If brakes cannot hold aircraft during static run-up, allow the brakes to cool completely and repeat steps 1 through 4.

This conditioning procedure will wear off high spots and prepare pads and disc friction surfaces. A visual inspection of disc will indicate the pads condition: a smooth surface with light and regular grooves indicates that pads and disc are properly conditioned.

NOTE: A rough surface of disc with deep grooves and isolated bumps indicates that an excessive brake effort has been applied during conditioning. In this case, bumps must be sanded and conditioning procedure repeated.

CAUTION: A wrong conditioning may affect brake performances and increase wear of pads and disc.

NOTE: The brake pad PQT-016(A) may require two times the conditioning procedure

3. Airworthiness Limitations Section

GENERAL:

This airworthiness limitations Section (ALS) is FAA approved and specifies maintenance required under § 43.16 and 91.403 of the FAR unless an alternate program has been FAA approved.

LIFE LIMITED PARTS:

The replacement time of life limited components listed next must be accomplished not later than the specified period of operation for that component.

Component	Time limit	Maintenance interval	Complete overhaul interval
Flexible stainless braided hoses	-	-	-
Brake master cylinder	-	-	3500 flying hours or 7 years*
Brake regulator	-	-	3500 flying hours or 7 years*
Brake unit	-	3500 flying hours or 7 years*	7000 flying hours or 14 years*
Wheel unit	-	3500 flying hours or 7 years*	7000 flying hours or 14 years*

*Whichever limit occurs first

For replacement schedule of components please report to §2.3

A tolerance of 10% can be applied on maintenance intervals with a limitation to 500h and 6 months