



DESIGN GUIDE

CABINETS INTERIOR - JOINING METHOD

BG-7700-01-04-07

Rev. F

BOMBARDIER INC., PAR L'INTERMÉDIAIRE DE SES GROUPES, DIVISIONS ET/OU FILIALES CORPORATIVES, FOURNIT LES PRÉSENTES INFORMATIONS AU GOUVERNEMENT À TITRE CONFIDENTIEL. CES INFORMATIONS ONT UNE TENUE CONFIDENTIELLE, AVEC DROITS DE PROPRIÉTÉ, ET NOUS LES CONSIDÉREONS EXCLUES DE L'APPLICATION DE TOUTE LOI SUR L'ACCÈS À L'INFORMATION. ELLES PEUVENT AUSSI CONSTITUER DES SECRETS INDUSTRIELS DE NOTRE SOCIÉTÉ OU DE TIERCES PARTIES. LA DIVULGATION PUBLIQUE DE CES INFORMATIONS NUIRAIT À BOMBARDIER INC. OU À DES TIERCES PARTIES. TOUTE INTENTION DE LES DIVULGUER EN TOUT OU EN PARTIE DEVRA ÊTRE SIGNIFIÉE À L'AVANCE ET PAR ÉCRIT AU VICE-PRÉSIDENT SERVICES JURIDIQUES, BOMBARDIER AÉRONAUTIQUE.

BOMBARDIER INC., BY ITS GROUPS, DIVISIONS AND/OR CORPORATE SUBSIDIARIES, PROVIDES THIS INFORMATION TO THE GOVERNMENT IN CONFIDENCE. THIS IS PROPRIETARY CONFIDENTIAL INFORMATION WHICH WE CONSIDER EXCLUDED FROM THE APPLICATION OF ANY ACCESS TO INFORMATION LAWS AND MAY ALSO CONSTITUTE TRADE SECRETS OF OUR COMPANY OR THIRD PARTIES. PUBLIC RELEASE OF THIS INFORMATION WOULD BE HARMFUL TO BOMBARDIER INC. OR THIRD PARTIES. ANY INTENTION TO DISCLOSE SUCH INFORMATION, OR PART THEREOF, MUST BE NOTIFIED IN ADVANCE AND IN WRITING TO THE VICE-PRESIDENT LEGAL SERVICES, BOMBARDIER AEROSPACE.

LES INFORMATIONS AINSI QUE LES DONNÉES ET DESSINS TECHNIQUES DIVULGUÉS DANS LES PRÉSENTES SONT LA PROPRIÉTÉ EXCLUSIVE DE BOMBARDIER INC. ET/OU COMPORTENT DES DROITS DE PROPRIÉTÉ APPARTENANT À AUTRUI ET NE PEUVENT ÊTRE DIVULGUÉS À QUICONQUE NI UTILISÉS OU REPRODUITS PAR QUI QUE CE SOIT SANS LE CONSENTEMENT ÉCRIT DE BOMBARDIER INC. DANS TOUS LES CAS OÙ BOMBARDIER INC. CONSENT À LEUR DIVULGATION, LEUR DIFFUSION OU LEUR REPRODUCTION, LE PRÉSENT AVIS DE PROPRIÉTÉ INTELLECTUELLE AINSI QUE L'AVIS ÉNONCÉ SUR CHAQUE PAGE DES PRÉSENTES DEVRA ÊTRE INDIQUÉ DE LA MÊME FAÇON. LES INFORMATIONS CONTENUES AUX PRÉSENTES PEUVENT AUSSI ÊTRE SOUMISES AUX LOIS RELATIVES À L'EXPORTATION. TOUTE EXPORTATION OU RÉ-EXPORTATION DE DONNÉES SANS AUTORISATION EST INTERDITE.

THE INFORMATION, TECHNICAL DATA AND DESIGNS DISCLOSED HEREIN ARE THE EXCLUSIVE PROPERTY OF BOMBARDIER INC. AND/OR CONTAIN PROPRIETARY RIGHTS OF OTHERS AND ARE NOT TO BE USED, REPRODUCED OR DISCLOSED TO OTHERS WITHOUT THE WRITTEN CONSENT OF BOMBARDIER INC. If consent to disclosure, release or reproduction is provided by Bombardier Inc., this proprietary information notice and the notice set forth on each page of this document shall appear in such full or partial disclosure, release and/or reproduction. The information contained in this document may also be controlled by export control laws. Unauthorized EXPORT OR RE-EXPORT OF ANY DATA IS PROHIBITED. D.3363-25 REV 2004-10

		GUIDE NO:	BG-7700-01-04-07
DESIGN GUIDE		REVISION:	F
CABINETS INTERIOR - JOINING METHOD		DATE:	2016-10-12

Revision History

REVISION	DATE:	PREPARED BY:	CHECKED BY:	APPROVED BY:	REMARKS:
--	2015-05-07	A. Lemaitre			
A	2015-07-02	A. Lemaitre			
B	2015-09-17	A. Lemaitre			
C	2015.12.15	A. Lemaitre			
D	2016.04.15	A. Lemaitre			
E	2016.10.24	S. Morissette			
F	2017.02.22	S. Morissette			

BOMBARDIER the evolution of mobility	GUIDE NO:	BG-7700-01-04-07
DESIGN GUIDE	REVISION:	F
CABINETS INTERIOR - JOINING METHOD	DATE:	2016-10-12

Table of Contents

1. Cabinetry	1
1.1 Joining Method	1
1.1.1 Tongue & Groove	1
1.1.2 Pins.....	2
1.1.3 Biscuit Joining	4

DESIGN GUIDE

CABINETS INTERIOR - JOINING METHOD

List of Tables

Table 1 – Pin selection 2

Table 2 – Pin installation..... 2

DESIGN GUIDE

CABINETS INTERIOR - JOINING METHOD

List of Figures

Figure 1 – Example of Tongue & Groove..... 1
Figure 2 – Pin installation..... 3
Figure 3 – Example of Biscuit Joint..... 4

	GUIDE NO:	BG-7700-01-04-07
DESIGN GUIDE	REVISION:	F
CABINETS INTERIOR - JOINING METHOD	DATE:	2016-10-12

1. CABINETRY

1.1 JOINING METHOD

1.1.1 Tongue & Groove

The tongue & groove joint is the preferred process to bond panels together. Use the Tongue & Groove (T&G) tools per [BM10099.08.03.16](#) for 3D definition.

Before using tongue & groove, the designer shall take into consideration several rules:

- The width of the panel cannot be less than 3". Use pins under 3" width.
- Only perpendicular joints can use T&G process. Angled joints must use pins.
- Finish materials such as veneer, laminate, etc. shall not be included in T&G joints.

Refer to BAPS 732-001 for manufacturing process regarding Tongue & Groove.

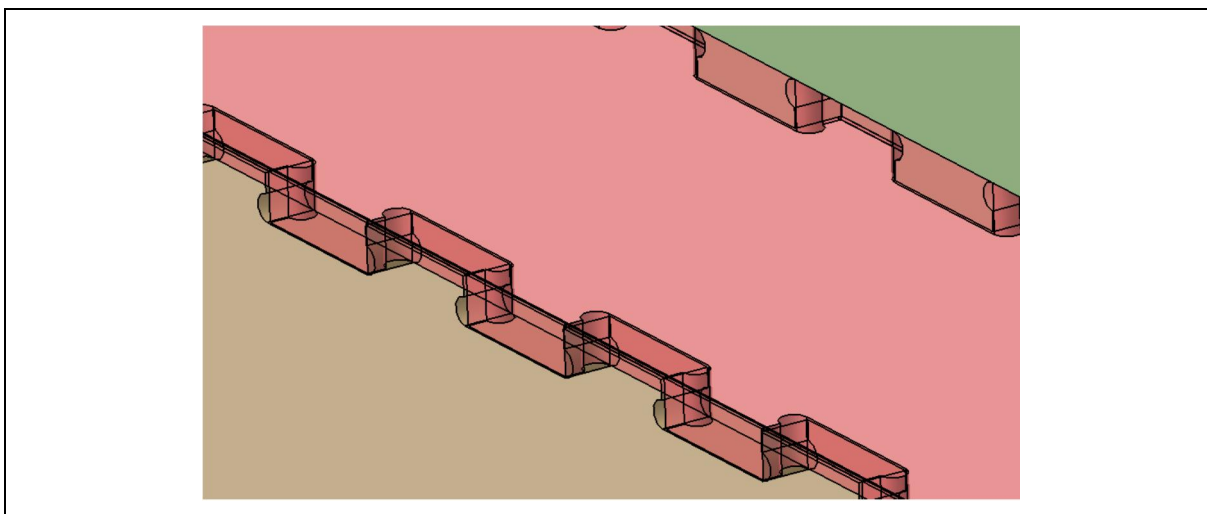


FIGURE 1 – EXAMPLE OF TONGUE & GROOVE

	GUIDE NO:	BG-7700-01-04-07
DESIGN GUIDE	REVISION:	F
CABINETS INTERIOR - JOINING METHOD	DATE:	2016-10-12

1.1.2 Pins

Pins are used to join panels together when Tongue & Groove is not appropriate, such as for angled joints and narrow panels (width ≤ 3 in). When using pins to attach panels, the 3D model of the pins shall be represented in the digital mockup.

The pin shall always be selected according to panel thickness, refer to [Table 1](#). More information can be found in [BAPS 730-005](#).

Pin type	Part number	Panel Thk
Blue	ATR-150-1875F	0.250, 0.375
Gold	ATR-200-3125F	0.500, 0.625
Pin-Insert	ATR-200-3125	
Red	ATR-250-4375F	0.750, 1.000

TABLE 1 – PIN SELECTION

Pins ATR-200-3125 are used to add threads to the edges of panels. The tolerance on the threads is not very good, so if tight tolerances are required then a PEI block with helical coil should be used. Refer to Design Guidelines [BG-7700-01-04-10](#) regarding block insert in panel.

Design should be done in such way that the use of cut pins is not required or kept to a strict minimum.

The following rules should be respected for composite panel's pin installation:

- A pilot hole of 0.098" (#40) must be represented in 3D
- For panel's lengths greater than 6", the edge distance should be 1" for blue and gold pin and 1.25" for red pin.
- The pitch between centers of two consecutive pins is 4" to 5".
- For panel's lengths between 2.5" and 6" only two pins should be installed with a minimum edge distance of 0.75".
- The minimum distance between the center of pin and the center of insert shall be 1.25" (C in [Table 2](#)) when pin and insert are on the same plane.
- The minimum distance between the center of pin and the center of insert shall be 1" (D & E in [Table 2](#)) when pin and insert are perpendicular plane.
- The pin shall always be parallel to the inner panel skin.

Panel length	Pin	A	B	C	D	E
L ≥ 6"	Blue	Min 1"	4 to 5"	1.25"	1"	1"
	Gold					
	Red	Min 1.25"				
2.5" ≤ L ≤ 6"	Blue	Min 0.75"	Max 2 pins			
	Gold					
	Red					

TABLE 2 – PIN INSTALLATION

DESIGN GUIDE

REVISION: F

CABINETS INTERIOR - JOINING METHOD

DATE: 2016-10-12

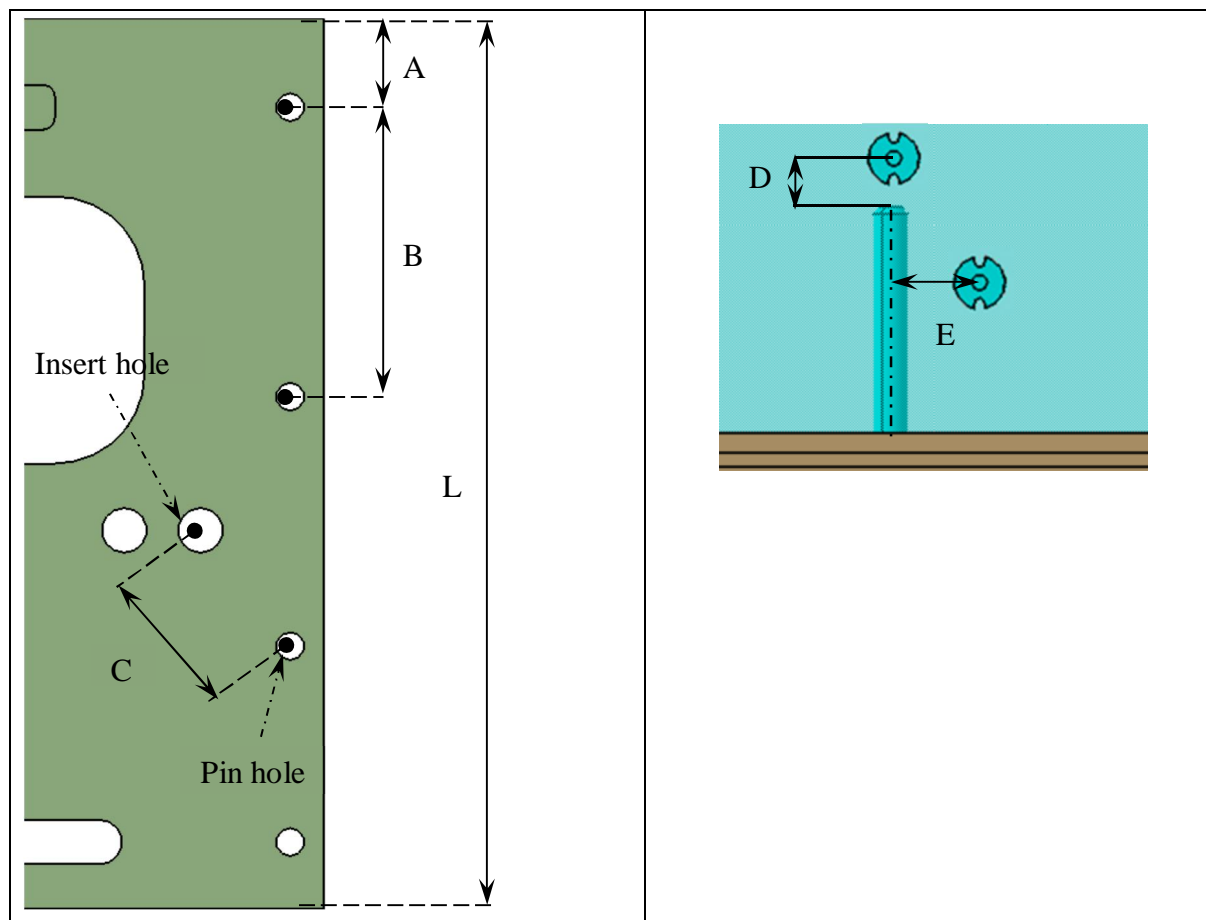


FIGURE 2 – PIN INSTALLATION

The pilot holes (diameter 0.098”) should be represented in 3D definition. These pilot holes are located on the outer panel. Refer to [BAPS 730-005](#) for manufacturing process regarding pin installation.

	GUIDE NO:	BG-7700-01-04-07
DESIGN GUIDE	REVISION:	F
CABINETS INTERIOR - JOINING METHOD	DATE:	2016-10-12

1.1.3 Biscuit Joining

The biscuits are used to join hardwood together, typically for the table bullnose. Biscuits are standard parts part of the S9061 family. Different sizes of biscuits are available (FF, 0, 10, 20, etc), however we typically use size FF biscuits because they are the smallest. Depending on the use, a different biscuit may be used.

Biscuit slot geometry **MUST** be defined in 3D on the detail part, and biscuit **MUST** be part of the assembly structure and be captured in drawing parts list.

Standard flag note **MUST** be applied on the slotted detail part as well as on the assembly drawing. For applicable notes, refer to the CATIA standard notes catalog.



FIGURE 3 – EXAMPLE OF BISCUIT JOINT