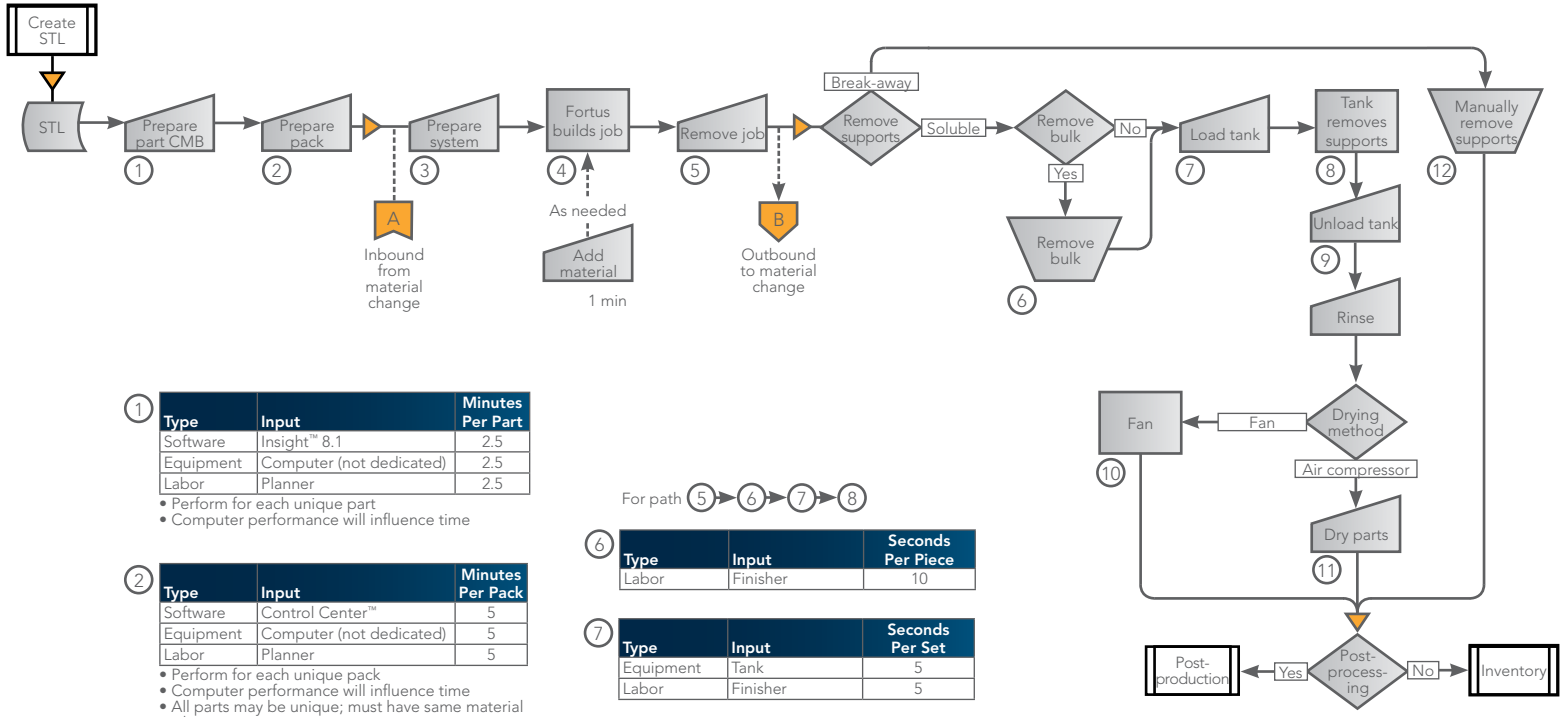
FUSED DEPOSITION MODELING (FDM®) PROCESS

FORTUS
3D PRODUCTION SYSTEMS



This process map offers detailed time estimates for all tasks related to building parts on a Fortus® 3D Production System. In this example, the two unique parts (images 1 and 2) make up one set (image 3), and 13 sets constitute a batch. A Fortus 400mc™ 3D Production System was used to produce these estimates, which also apply to the Fortus 900mc™ and 360mc™.

①

Type	Input	Minutes Per Part
Software	Insight™ 8.1	2.5
Equipment	Computer (not dedicated)	2.5
Labor	Planner	2.5

- Perform for each unique part
- Computer performance will influence time

②

Type	Input	Minutes Per Pack
Software	Control Center™	5
Equipment	Computer (not dedicated)	5
Labor	Planner	5

- Perform for each unique pack
- Computer performance will influence time
- All parts may be unique; must have same material and tip

③

Type	Input	Units Per Job
Equipment	Fortus	2 minutes
Labor	Operator	2 minutes
Misc.	Foundation	1 each

For each job

④

Type	Input	Units Per Job
Equipment	Fortus	16 hrs 47 min
Material	ABS-M30	9.16 inches^3
Material	SR-30	2.66 inches^3
Misc.	Part tip (T12)	9.16 inches^3
Misc.	Support tip	2.66 inches^3

For each job

⑤

Type	Input	Seconds Per Job
Equipment	Fortus	30
Labor	Operator	30

For path ⑤→⑥→⑦→⑧

⑥

Type	Input	Seconds Per Piece
Labor	Finisher	10

⑦

Type	Input	Seconds Per Set
Equipment	Tank	5
Labor	Finisher	5

⑧

Type	Input	Minutes Per Pack
Equipment	Tank	90
Consumable	Concentrate	*

Fresh tank = 1. If other, 1+(n*15) minutes per pack
*Removal time depends on model geometry.

For path ⑤→⑦→⑧

⑦

Type	Input	Seconds Per Set
Equipment	Tank	5
Labor	Finisher	5

⑧

Type	Input	Minutes Per Pack
Equipment	Tank	190
Consumable	Concentrate	*

- Fresh tank = 1. If other, 1+(n*30) minutes per pack

*Removal time depends on model geometry.

⑨

Type	Input	Seconds Per Set
Equipment	Tank	5
Labor	Finisher	5

⑩

Type	Input	Hours Per Pack
Equipment	Fan	2

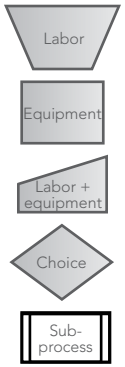
⑪

Type	Input	Minutes Per Part
Equipment	Compressed air	1
Labor	Finisher	1

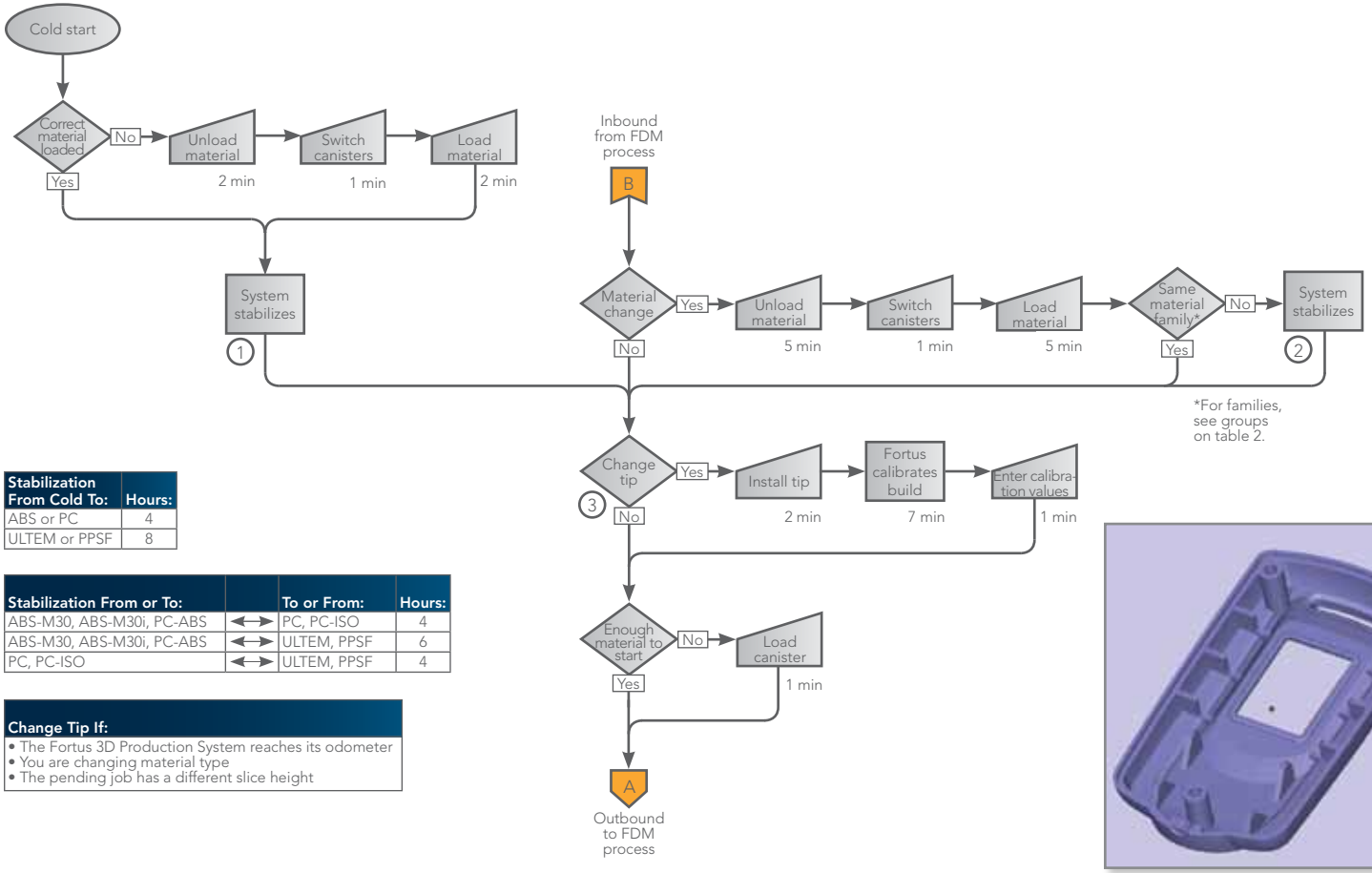
⑫

Type	Input	Minutes Per Part
Labor	Finisher	8*

*Learning curve should lead to 5 minutes per part.



Material Change Process



1

Stabilization From Cold To:	Hours:
ABS or PC	4
ULTEM or PPSF	8

2

Stabilization From or To:		To or From:	Hours:
ABS-M30, ABS-M30i, PC-ABS	⟷	PC, PC-ISO	4
ABS-M30, ABS-M30i, PC-ABS	⟷	ULTEM, PPSF	6
PC, PC-ISO	⟷	ULTEM, PPSF	4

3

Change Tip If:
• The Fortus 3D Production System reaches its odometer • You are changing material type • The pending job has a different slice height

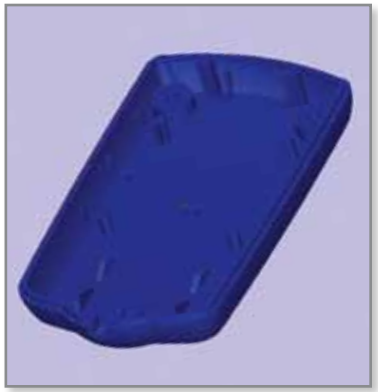


Image 2 shows the second part built in this example.

Image 1 shows the inside of one of two unique parts built in this example.



Image 3: The two parts make up a set.

For more information about Fortus 3D Production Systems, materials and applications, call **888.480.3548** or visit **www.fortus.com**

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