HP 3D Printing - Quotation Tool

Customer profile

Company	decip _engrenage
Quotation date	2018/04/04
Sales representative	DECIP

Part information

Part number	engrenage
Volume (cm³)	4,00
x,y,z (cm)	38,00 x 28,45 x 38,00
Weight (gr)	4,04

Quotation information

HP Jet Fusion 3D 4200

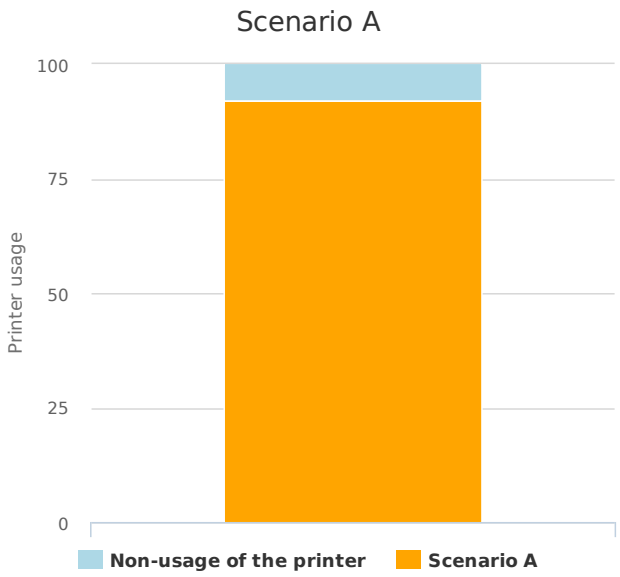
	Scenario A
Job size (cm)	38,00
Parts on a job	1.028
Packing density	10%
Full builds per day	1,3
Working days per year	220
Amortization of Hardware (years)	5
Print mode	Balanced *(Layer thickness: 0.008 cm)*
Additional printers	0
Additional build units	0
Additional PPS	0
Additional Sand & Air Blasting Units	0
Material	*HP 3D High Reusability PA12*
Powder Material price per kg	50,00
Detailing agent cartridge size (L)	5
Fusing agent cartridge size (L)	5

Service care pack years	3

Hardware Solution

HP Jet Fusion 3D 4200

	Scenario A
Total printers	1
Total build units	2
Total post processing stations	1
Sand and air blasting units	1
Printer usage	92%



Summary

HP Jet Fusion 3D 4200

	Scenario A
Fixed cost per part	0,29 EUR
Variable cost per part	0,67 EUR
Total cost per part	**0,96 EUR**
Fixed cost per job	301,82 EUR
Variable cost per job	688,22 EUR
Total cost per job	**990,03 EUR**
Fixed cost per gram	0,07 EUR
Variable cost per gram	0,17 EUR
Total cost per gram	**0,24 EUR**
Parts per year	294.008
Fresh material/year consumption (kg)	1.779
Detailing agent per year (L)	187,79
Fusing agent per year (L)	118,81
Cleaning rolls per year (units)	49
Printheads per year (units)	26

Quotation Tool V2.27 based on the TCO Excel version Final Tool 2.27.0

Hardware price, maintenance cost, labor cost, consumables price and material prices are based on standard industrial solution configuration recommended by HP. These prices are based on non-binding MRSP and resellers free to set up their own prices. Data for Hardware, Materials & Services, Printer speeds and productivity values is based on internal testing. Results are approximate and should not be taken as 100% conclusive by whoever receives the information.

Agent and other consumables consumption is highly dependent on part size, part geometry, packing density and build height among other factors. This average consumption has been estimated for an HP internal test build with a 9.53% packing density. Any variation of the variables stated above may lead to a significant difference on average agents usage consumption. 30 gr part used as an average.

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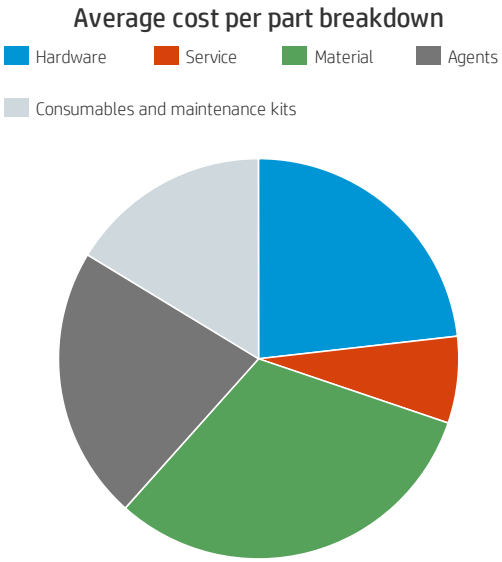
Cost per part breakdown

HP Jet Fusion 3D 4200

	Scenario A
Hardware	0,22 EUR
Service	0,07 EUR
Material	0,30 EUR
Agents	0,21 EUR
Consumables and maintenance kits	0,16 EUR
Total cost per part	**0,96 EUR**



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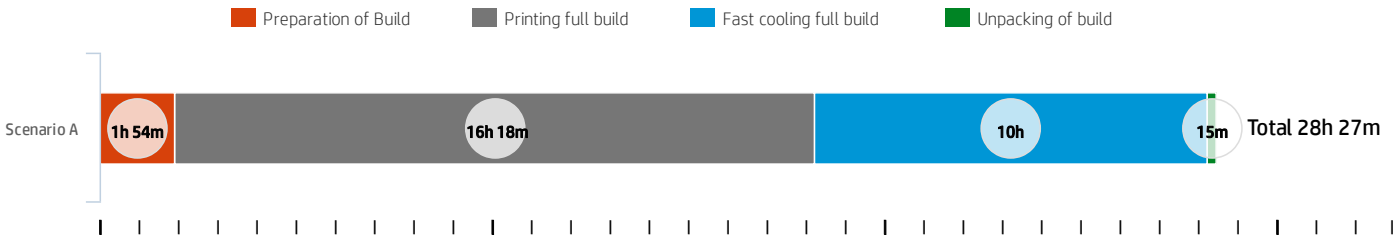
Average time for build production

HP Jet Fusion 3D 4200

Printing process detailed timeline	Scenario A
Preparation of Build (hours)	1,88
Printing full build (hours)	16,31
Fast cooling full build (hours)	10,00
Unpacking of build (hours)	0,25

Mix and Load	45 min to 1 hour
Render *	18 min
Printer Maintenance *	15 to 30 min
Checks and startup	1 hour to 1 hour 30 min
Printing per build (depends on job height and printmode)	16 hours 18 mins
Safety cooling *	30 min
Fast cooling per build (depends on job height and printmode)	10 hours 0 mins
Unpack w/ fast cooling	15 min
Processing Station maintenance	20 min

* The listed activities can be done in parallel with others or omitted, in the final time sum they are not counted.



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COST OUTPUTS:

- Fixed cost per part: Total sum of fixed costs per part including Hardware, Service Care Packs, Preventive Service Maintenance, Maintenance Kits.
- Variable cost per part: Total sum of variable costs per part including Materials, Agents, Consumables (print heads, cleaning roll and lamps kit), Labor.
- Total cost per part: Sum of variable and fixed costs per part.
- Hardware: Includes printer, post processing station with fast cooling, build units (needed + additional selected on inputs page), accessories (sand and air blasting units) and installation costs (printer and post processing).
- Service: Includes the cost of the selected service Care Pack and the preventive service maintenance.
- Material: Includes cost of the fresh material used.
- Agents: Includes the cost of fusing and detailing agents used.
- Consumables and maintenance kits: Includes the cost of consumables (cleaning rolls, print heads) and maintenance kits (includes lamp kits).
- Labor: Includes the cost for printer and post-processing maintenance and average cleaning per build.

TIME OUTPUTS:

- Preparation of build (hours): Time to prepare the build, load the material and warm up. Based on number of parts with a minimum of 1 hour.
- Printing time full build (hours): Total printing time, based on number of layers and time per layer.
- Fast cooling full build (hours): Time to perform the fast cooling needed before unpacking the build.
- Unpacking of build (hours): Unpacking time of the material that has not been fused and can be reused.

SUMMARY OUTPUTS:

- Full builds per day: Number of full builds that are printed per day. Example: 4 builds of 75% build size would be 4*75% = 3 full builds.
- Parts per year: Number of parts produced yearly considering the number of parts per build, builds per day and working days per year.
- Fresh material/year consumption: kilograms of fresh material needed to achieve the production in every scenario.
- Amortization of hardware (years): number of years to amortize the purchase of Hardware. Print mode: layer thickness and time per layer depend on the print mode selected.

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