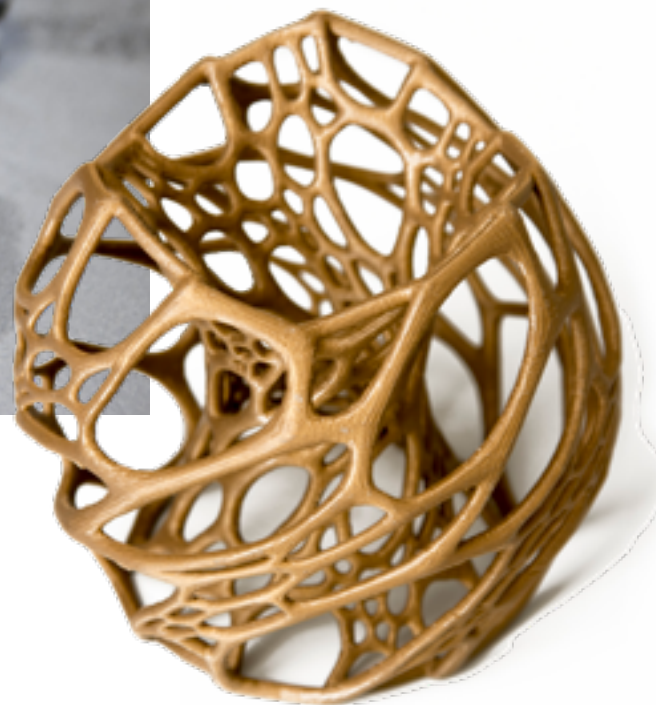


It's all about

the finishing touch



Normfinish 3D Series

Focus on de-powdering and finishing 3D printed products



normfinish.com/additivemanufacturing

NORMFINISH
SURFACE TREATMENT

Normfinish 3D Series

For over a decade, Leering Hengelo has been developing and manufacturing blast cabinets specifically for the Additive Manufacturing industry with the main focus on de-powdering and finishing 3D printed products. Meanwhile, this industry is scaling up its production capabilities to produce larger series to satisfy the increasing demand. This requires new, automated solutions for an efficient and high-quality post production.



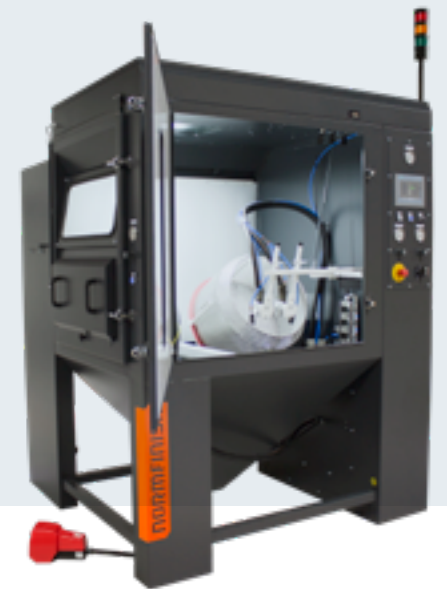
Normfinish 3D DI



Normfinish 3D Solid



Normfinish 3D Smart



Normfinish 3D Excel



Basket
Normfinish 3D Smart

‘With the innovative Normfinish 3D Series, Leering Hengelo offers a wide range of solutions for both plastic and metal post-processing. The Normfinish 3D Series are designed to continuously serve the high standards of the AM-industry at all times. Customer-specific modifications are possible through our own engineering department and on-site production facility’

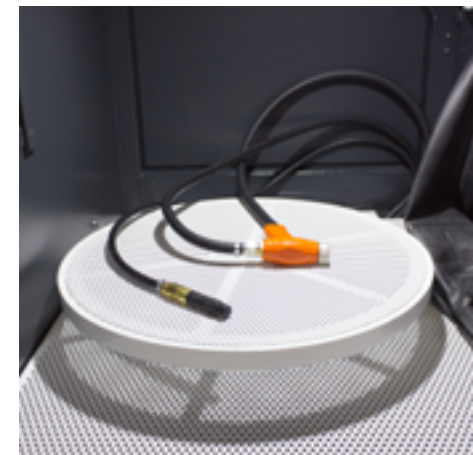
Transportation trolley [option]
Normfinish 3D Excel



Normfinish 3D DI

Normfinish **3D DI** depowdering system is developed for manually cleaning of powder bed printed parts. Suitable for blasting of **individual, large parts**.

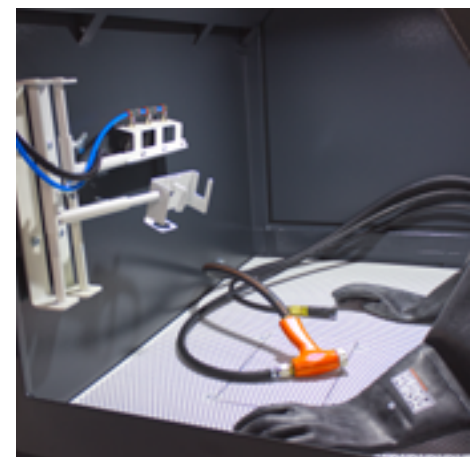
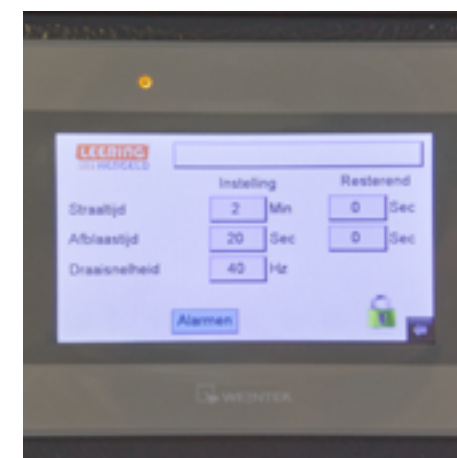
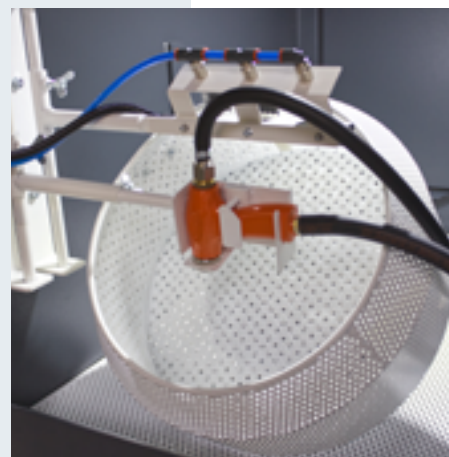
- ✓ Manual blasting of 3D printed parts up to a load of max. 350 kg
- ✓ [Optional] stationary turntable Ø 600 mm
- ✓ Equipped with a cyclone to remove dust and powder from the blast media
- ✓ [Optional] integrated ionisation [ATEX] unit ensures cleaner dust free products
- ✓ Also suitable for shotpeening, without any modifications
- ✓ ATEX certified for processes class II 3/-D T125°
- ✓ [Optional] special preparation for unpacking metal printed parts s.a. titanium
- ✓ Easy-care; solid proven industrial concept, low maintenance costs



Normfinish 3D Solid

The Normfinish 3D Solid is our entry-level model solution to automatically cleaning of powder bed printed parts. Suitable for **small print volumes on a regular basis**.

- ✓ Serial, PLC controlled, production up to a volume of 10 L
- ✓ Manually adjustable basket angle; removable basket
- ✓ Integrated manual blasting
- ✓ Equipped with a cyclone to remove dust and powder from the blast media
- ✓ Also suitable for shot-blasting, without any modifications
- ✓ ATEX certified for processes class II 3/-D T125°
- ✓ Easy-care; solid proven industrial concept, low maintenance costs



Normfinish 3D Smart

The Normfinish 3D Smart is suitable for **large print volumes on a frequent basis**. This de-powdering system provides bigger capacity than the 3D Solid, containing a large basket, using 2 blasting nozzles, which enables a serial production up to a volume up to 30 L at once.

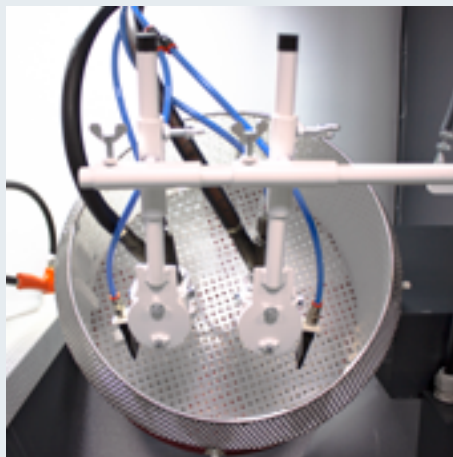
- ✓ Serial, PLC controlled, production up to a volume of 30 L
- ✓ Integrated ionization (ATEX) unit ensures cleaner, dust free products
- ✓ Fixed basket angle; loading/unloading outside cabinet
- ✓ Integrated manual blasting
- ✓ Equipped with a cyclone to remove dust and powder from the blast media
- ✓ Also suitable for shot-blasting, without any modifications
- ✓ ATEX certified for processes class II 3/-D T125°
- ✓ Easy-care; solid proven industrial concept, low maintenance costs



Normfinish 3D Excel

Normfinish 3D Excel depowdering system offers a perfect solution for **big print volumes on a high frequent basis**. The PLC allows 20 different recipes and guarantees process repeatability, independent from the operator. Industry 4.0 Ready.

- ✓ Serial, PLC controlled, production up to 20 L; Key process parameters can be put in 20 individual recipes. Guarantees process repeatability independent from operator
- ✓ Integrated ionization (ATEX) ensures cleaner dust free products
- ✓ Automatic adjustable basket angle, PLC controlled settings: Reproducible process and a good mixing of products with different geometries
- ✓ Easy load / unload via front door; media/dust stays inside cabinet
- ✓ Separate manual blasting station, equipped with 1 blast pistol
- ✓ Also suitable for shot-blasting, without any modifications
- ✓ ATEX certified for processes class II 3/-D T125°



Main features



Normfinish 3D DI



Normfinish 3D Solid



Normfinish 3D Smart



Normfinish 3D Excel

MAIN FEATURES	Normfinish 3D DI	Normfinish 3D Solid	Normfinish 3D Smart	Normfinish 3D Excel
ATEX Classification II 3/-D T125°	yes	yes	yes	yes
Cyclone for a constant blasting mixture	yes	yes	yes	yes
Linatex lining in cyclone	option	option	option	yes
Automatic cartridge cleaning	yes	yes	yes	yes
Turn-Key 1 unit	yes	yes	yes	yes
Doors	two side doors	two side doors	two side doors	front and side door
Safety on doors	yes	yes	yes	yes [hold contacts]
LED lighting	yes	yes	yes	yes
Ionisation	option	option	yes	yes
HEPA filter	option	option	option	option
Basket				
Dimension basket [mm]	n/a	Ø 450 x 210	Ø 600 x 400	Ø 500 x 320 [stainless steel]
Adjustment angle of the basket	n/a	manual	fixed angle	electrical
Removable basket	n/a	yes	yes	yes
Protective lining in basket	n/a	yes	yes	yes
Loading/ unloading	n/a	in the cabinet	outside the cabinet	in the cabinet [nozzles move automatically away at the end of the process]
Switch box				
Controls	n/a	PLC, Siemens logo	PLC, Siemens Logo	PLC, Siemens S7-1200
HMI	n/a	Weintek [colour] 4,3"	Weintek [colour] 4,3"	Siemens [colour] 7"
Recipes	n/a	no	no	20
eWon module	n/a	no	no	option
Adjustable parameters				
Blasting time	n/a	yes	yes	yes [recipe]
Time for blowing off	n/a	option	yes	yes [recipe]
Angle of the basket	n/a	manual	no	yes [recipe]
RPM of the basket	n/a	yes	yes	yes [20x]
Blasting pressure by regulator	n/a	yes	yes	yes [recipe]
Blasting pressure through HMI	n/a	no	no	yes [recipe]
Blasting nozzles				
Nozzles basket [amount]	n/a	1	2	2
Material nozzle [basket]	n/a	Silicium carbide	Borium carbide	Borium carbide
Extra nozzle for manual blasting	n/a	no, remove from basket system	no, remove from basket system	yes

Technical specs

	Normfinish 3D DI	Normfinish 3D Solid	Normfinish 3D Smart	Normfinish 3D Excel
External dimensions [l x w x h] excl. motor	1.220 x 1.275 x 2.035 mm	1220 x 1275 x 2035 mm	1434 x 1585 x 2204 mm	1853 x 1686 x 2507 mm
External dimensions [l x w x h] incl motor		n/a	1626 x 1585 x 2206 mm	n/a
External dimensions [l x w x h] incl collection tray		n/a	2182 x 1585 x 2206 mm	n/a
Effective blast room [l x w x h]	1.105 x 800 x 800 mm	1105 x 800 x 800 mm	1320 x 939 x 1060 mm	1278 x 1051 x 1105 mm
Working height	840 mm	840 mm	725 mm	853 mm
Side door openings [w x h]	692 x 640 mm	692 x 640 mm	835 x 826 mm	827 x 974 mm
Front door openings [w x h]	n/a	n/a	n/a	1000 x 974 mm
View front window [w x h]	656 x 266 mm	656 x 266 mm	656 x 266 mm	266 x 656 mm
View side window [w x h]	n/a	450 x 300 mm	450 x 300 mm	656 x 266 mm
Maximum load cabinet	350 kg	350 kg	350 kg	Max 50 kg [only manual blasting area]
Basket with lining				
* Dimensions	n/a	ø 450 x 210 mm	ø 600 x 400 mm	ø 500 x 320 mm
* Approx. volume [depends on size and form of products]	n/a	10 liter	30 liter	20 liter
* Maximum load	n/a	10 kg	15 kg	20 kg
Blast guns	ø 6, 8 of 10 mm, at choice	ø 6, 8 of 10 mm, at choice	Hardened blast guns with boron carbide nozzles [ø 8 mm]	Hardened blast guns with boron carbide nozzles [ø 8 mm]
Filter cartridges [polyester, M-class]	1 filter cartridge of 4m²	1 filter cartridge of 4 m²	2 filter cartridges of 4 m² each	2 filter cartridges of 4 m² each
Capacity ventilator	600 m³/h [0,75 kW]	600 m³/h [0,75 kW]	800 m³/h [1,1 kW]	900 m³/h [1,1 kW]
Dust emission	< 1,8 mg/Nm³	< 1,8 mg/ Nm³	< 1,8 mg/Nm³	< 1,8 mg/Nm³
Atex classification	Class II 3/-D T125°C	class II 3/-D T125°C	Class II 3/-D T125°C	class II 3/-D T125°C
Lighting	LED light 20 Watt	LED light 20 Watt	LED light 50 Watt	LED light 50 Watt
Electrical connection	230V, 50 Hz	230 V, 50 Hz	3 x 400V, 50 Hz, earth and zero	3 x 400V, 50 Hz, earth and zero
Total power consumption	0,85 kW	0,85 kW	1,3 kW	3,0 kW
Colours powder coating	Anthracite grey [= Ral 7016]	Anthracite grey [= Ral 7016]	Anthracite grey [= Ral 7016]	Anthracite grey [= Ral 7016]
Cabin weight [complete]	ca. 380 kg	± 380kg	± 570 kg	± 1.000 kg



‘Our Engineering department develops blasting solutions in close cooperation with the Additive Manufacturing industry to achieve optimal results. These cabinets are produced in accordance to ISO certification. Normfinish blast cabinets are durable and economical to maintain in the long run and are even suitable for medical and industrial applications. Customer-specific solutions are possible, just as a wide range of options. We can also provide high quality blasting media fit for the post-production process’





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