

120 L HOPPER



Description

Production scaling has led to a substantial increase in AM machine throughput over the past decade. However, filling a machine with small containers of powder is an ineffective and hazardous process, heightening the probability of contamination and exposure, and impeding traceability of the powder.

Carpenter Additive's stainless steel 120 L Hopper (formerly known as PowderTrace) is an intelligent solution for the bulk storage of metal powders for AM. The 120 L Hopper is engineered for smaller AM sites and closed-loop system compatibility. For larger AM sites, new AM systems, and larger capacity and transport security, ask about our new 250 and 500 L Hoppers.

The 120 L Hopper facilitates handling and movement with two-way access. Its design diminishes packaging waste considerably over its lifetime, compared to plastic bottles. And it significantly reduces the risk of operator exposure and contamination.

Key Properties:

- Designed for additive manufacturing
- 120 L internal capacity
- Safe carrying capacity of up to 400 kg of powder¹
- UN certified for hazardous alloys
- Fitted pressure gauge and + 0.2 bar pressure relief valve
- Push fit inerting gas connection points

Handling:

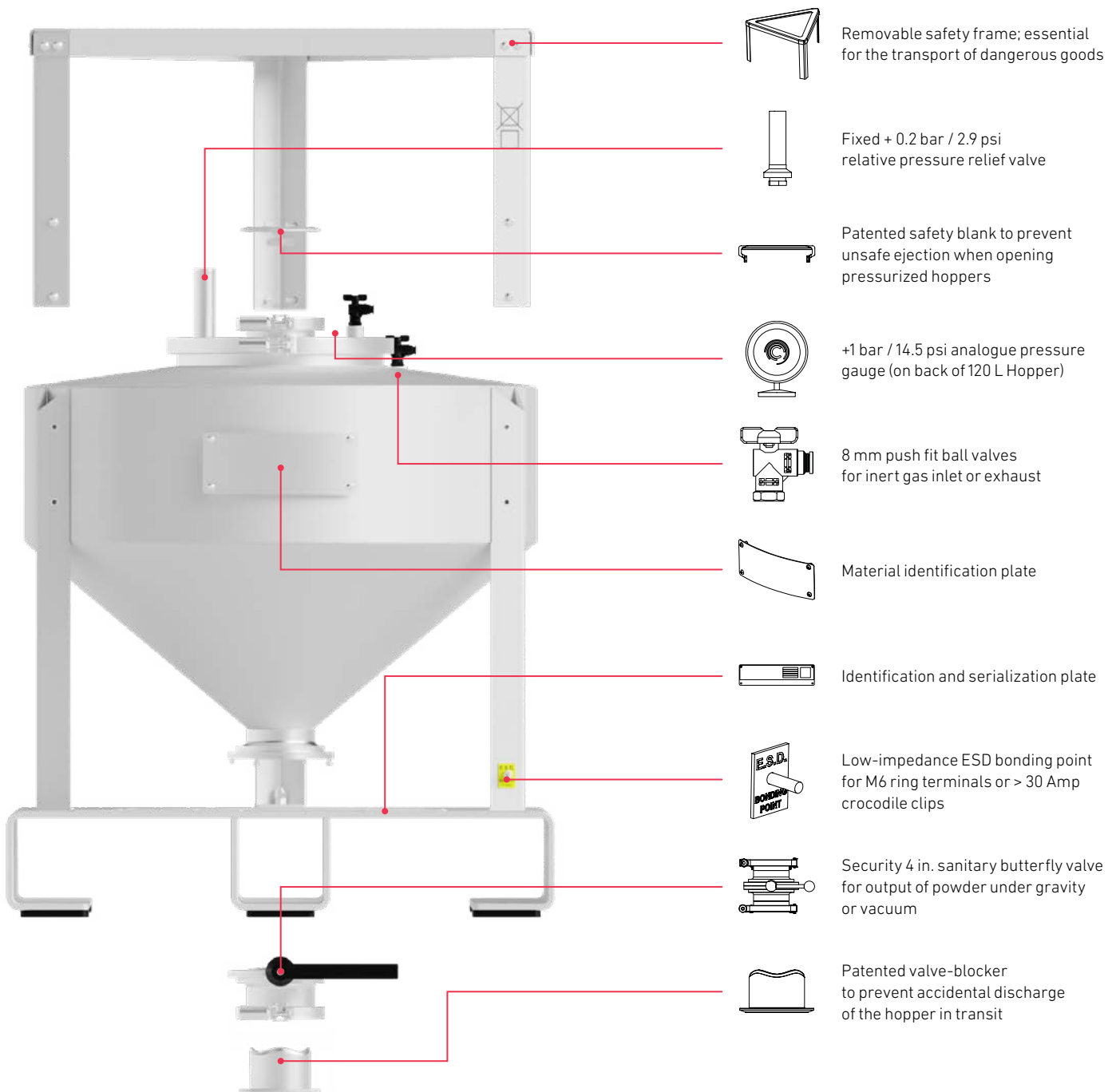
- 2-way access for pallet, pedestrian, and forklift equipment

Connectivity:

- 4 in. sanitary output valve connection
- Patented safety blank and valve blocker caps²

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Features



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Handling


A: COUNTERBALANCE FORKLIFT

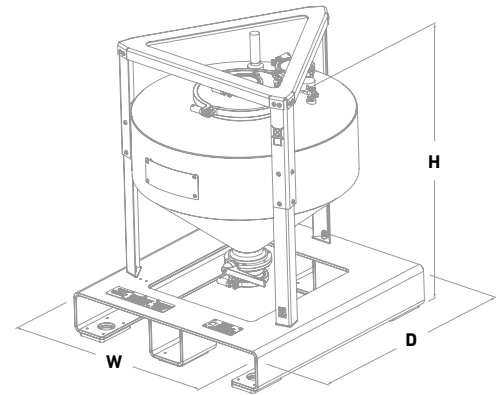
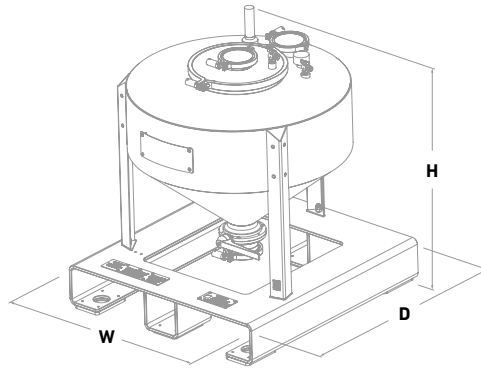
Type	2-way access
Fork spacing CTC	635 mm / 25 in
Fork length	> 660 mm / 26 in
Fork width	< 127 mm / 5 in
Load limit	> 800 kg / 1764 lb

B: PALETTE / PEDESTRIAN TRUCK

Type	2-way access
Outer width	< 560 mm / 22 in
Lift height	> 180 mm / 7 in
Fork length	> 660 mm / 26 in
Load limit	> 800 kg / 1764 lb

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Specifications



	120 L / 31 GAL	120 L / 31 GAL WITH UN TRANSPORT FRAME
Width (W)	810 mm / 32 in	810 mm / 32 in
Depth (D)	865 mm / 34 in	865 mm / 34 in
Height (H)	965 mm / 38 in	1015 mm / 40 in
Net weight	145 kg / 319 lb	155 kg / 341 lb
Max gross weight	545 kg / 1202 lb	555 kg / 1224 lb

LOAD LIMIT ³	MAXIMUM LOAD MASS		MAXIMUM LOAD MASS	
	ON-SITE, ROAD, OR SEA	AIR FREIGHT	ON-SITE, ROAD, OR SEA	AIR FREIGHT
ALLOY⁴				
Nickel / Iron / Cobalt	400 kg / 881 lb	400 kg / 881 lb	400 kg / 881 lb	400 kg / 881 lb
Titanium (> 45 µm)	275 kg / 606 lb	275 kg / 606 lb	275 kg / 606 lb	275 kg / 606 lb
Aluminum alloy	150 kg / 330 lb	150 kg / 330 lb	150 kg / 330 lb	150 kg / 330 lb
♦ Copper	—	—	400 kg / 881 lb	400 kg / 881 lb
♦ Titanium (< 45 µm)	—	—	275 kg / 606 lb	50 kg / 110 lb [†]
♦ AlMgSc	—	—	150 kg / 330 lb	—
Other alloys	Contact Carpenter Additive		Contact Carpenter Additive	

♦ Classified as dangerous goods. 120 L Hopper frame must be fitted for transport. Max. capacity adjusted accordingly. Consult the Material Safety Datasheet (MSDS).

[†] Value limited by dangerous goods legislation.

OTHER SPECIFICATIONS	
Material	Body: 304L Stainless Steel. Skid-plates: Nylon. Gaskets: EPDM.
Finish	External surfaces: Uncoated, bead-blasted. Internal surfaces: Uncoated, polished (0.5 Ra).
IP rating	IP 65 ⁵
External environment	+1°C to +50°C (< 95 % RH non-condensing), keep out of direct sunlight
Internal environment	Argon (Ar), Nitrogen (N ₂), or Air (< 40 % RH non-condensing, low-salinity)
Internal pressure	-0.25 bar / 75% vacuum to +0.2 bar (relative)
Contents	Metal powder for AM: 1 µm to 150 µm particle size
Certification	UN: IBC 21A/Y/MM YY/GB/LPW - 7558/0/753
Standards	ISO 16495:2022
Maintenance	Monthly: External inspection. 30-month: Pressure-test and full inspection. 5-year: UN revalidation. ⁶
Product status	Not recommended for new designs. ⁷

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Frequently asked questions

HOW MUCH POWDER CAN THE 120 L HOPPER HOLD?

The Hopper has the capacity to hold up to 120 L or 400 kg. However, the actual amount can vary based on the type of alloy, its relative density, and its usage. For specific limits, refer to the Load Limit table or contact us.

WHAT ARE BEST PRACTICES FOR USING THE 120 L HOPPER?

Our team of experts can help evaluate your operations and offer comprehensive solutions for managing your powder inventory. This includes guidance on how to optimally use the 120 L Hopper for tasks like receiving powder (eliminating the need for bottles or drums), returning scrap/revert, and integrating it into your shop floor processes. This way, you can concentrate on maximizing the uptime of your printers.

CAN I USE THE 120 L HOPPER WITH DIFFERENT ALLOYS?

Yes, but it is crucial to thoroughly review the 120 L Hopper datasheet, the Material Safety Data Sheet (MSDS), and adhere to local and transport regulations. Contact us with questions.

CAN I SWITCH THE ALLOY CONTENTS OF THE 120 L HOPPER?

Yes, provided that a comprehensive cleaning is performed. For detailed instructions on cleaning and maintenance, please refer to the Product Manual. Additionally, we can provide replacement material identification plates upon request.

CAN YOU DELIVER POWDER WITH THE HOPPER VIA AIR FREIGHT?

Yes, most non-hazardous alloys can be transported by air. However certain restrictions apply to dangerous goods. For specific limits, refer to the Load Limit table or contact us.

HOW SHOULD I CLEAN THE 120 L HOPPER?

Please consult the Product Manual for detailed instructions on cleaning and maintenance procedures.

WHAT IS THE BEST WAY TO MOVE THE 120 L HOPPER?

The Hopper may be handled using a Euro-sized pallet truck, a pedestrian truck, or a counterbalance forklift. Do not attempt to move the product by hand. For specific ratings, refer to the Handling section or contact us.

HOW IS POWDER TRACKED IN STORAGE?

Each 120 L Hopper is produced with a unique serial number for easy identification. Additionally, our expert team can help assess your operations and propose a full range of solutions for effective powder inventory management.

WHAT IS THE EXPECTED LIFESPAN OF THE 120 L HOPPER?

The 120 L Hopper is designed to be a reusable powder vessel for continuous use on the shop floor. With the right usage, maintenance, and cleaning, it doesn't have a defined operational lifespan. Some 120 L Hoppers have been functioning effectively since 2011, demonstrating their durability.

CAN THE 120 L HOPPER BE CONNECTED TO MY AM MACHINE?

Absolutely. Our expert team can provide connection solutions to most AM machines and ancillary processes. Contact us for assistance. However, please consider the Carpenter Additive 250 and 500 L Hoppers for a future-proof connectivity solution. Contact us for assistance.

WHY ISN'T THE 120 L HOPPER RECOMMENDED FOR NEW DESIGNS?

Carpenter Additive has introduced a new standard in powder handling vessels with the 250 and 500 L Hoppers. We suggest that new customers consider these advanced platforms for their needs. The 120 L Hopper is available to support the needs of our existing customers.

¹ Alloy dependent.

² Patents granted: US11287056B2, GB2583110A. Patents pending.

³ Capacity limits based on typical alloy bulk density, do not exceed gross mass limit or internal volume. 120 L Hopper is classified as, and should be used as, single packaging; capacity values reflect this. Do not palletize. Consult local legislation on material transportation. The sender is ultimately responsible for complying with the relevant transport legislation.

⁴ Certain alloys may be classified as dangerous goods under the UN Recommendations on the Transport of Dangerous Goods (UNRTDG). Consult the Material Safety Datasheet (MSDS) for classification. This product must only be filled with metal powder for Additive Manufacturing.

⁵ Designed to IP 65.

⁶ Consult the product manual for further information.

⁷ Not recommended for new designs. This product continues to be in production to support existing customers.



**Sustainable powder storage
for scaling up AM**

CarpenterAdditive.com/Talk-To-Us

**For additional information, please
contact your nearest sales office:**

info@carpenteradditive.com | 610 208 2000

The mechanical and physical properties of any additively-manufactured material are strongly dependent on the processing conditions used to produce the final part. Significantly differing properties can be obtained by utilizing different equipment, different process parameters, different build rates and different geometries. The properties listed are intended as a guide only and should not be used as design data.

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