

ProX[®] DMP 300

3D Production Printer



Facility Requirements Guide

Original Instructions

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1 PREPARING FOR INSTALLATION

Use this guide to help you prepare your facility for the installation of the ProX® DMP 300.

As you satisfy the requirements for each section in this guide, you need to complete the “Facility Requirements Checklist - ProX® DMP300” on page 16. You must complete this checklist and send it to 3D Systems when you’re ready to have your equipment installed.

You will find all contact information for 3D Systems’ service and support on page 17 .

SAFETY PRECAUTIONS

Please review all safety information in the safety section of the ProX® DMP300 User Guide.

WHEN YOU ARE READY FOR INSTALLATION



Caution: After you receive your equipment, do not allow anyone to connect electrical power, compressed air, or gas to any of these devices. This must only be done by your 3D Systems-certified Customer Support Engineer (3D CSE) during installation.

Attempts to install equipment or auxiliary equipment by non-3D Systems-certified personnel could void the warranty and result in serious injury and equipment damage.



Caution: NEVER unpack, assemble, or connect any component of the shipment without the aid of a qualified, 3D Systems Field Service Engineer. 3D Systems accepts no responsibility for damaged, defective, or incomplete systems uncrated by anyone other than a 3D Systems Field Service Engineer.



Caution: Once the printer is installed, it cannot be moved without the aid of a qualified, 3D Systems Field Service Engineer. 3D Systems accepts no responsibility for damage to the printer by anyone other than 3D Systems Field Service Engineer.

Moving the printer may affect settings (alignments, calibration...). Contact your 3D Systems-certified Customer Support Engineer to check the operation of the printer after moving.

2 EQUIPMENT AND PACKAGING

THE PROX DMP 300 SYSTEM

This section lists all of the equipment that is provided as a part of the ProX® DMP300.

- Main cabinet (including process chamber, recycling system, loading/unloading system)
- Electrical and Pneumatic Control Cabinet
- Power, Gas and Compressed Air Supply Cabinet

CRATED WEIGHTS AND DIMENSIONS

Main cabinet

- Weight : 5200 kg, (11464.04 lbs)
- Dimensions (W x D x H) : 2890 x 2630 x 2170 mm, (113.78 x 103.54 x 85.43 in.)

Control cabinet

- Weight: 550 kg, (1212.54 lbs)
- Dimensions (W x D x H) : 1180 x 1180 x 2310 mm, (46.45 x 46.45 x 90.94 in.)

Supply cabinet

- Weight: 950 kg, (2094.39 lbs)
- Dimensions (W x D x H) : 1280 x 1280 x 2310 mm, (50.39 x 50.39 x 90.94 in.)

Process filter

- Weight: 150 kg, (330.69 lbs)
- Dimensions (W x D x H) : 1010 x 740 x 1310 mm, (39.76 x 29.13 x 51.57 in.)

Accessories crate

Depending on applications, the dimensions and the weight of the crate may vary. Information given below only match for the biggest accessories crate:

- Weight: 200 kg, (440.9 lbs)
- Dimensions (W x D x H) : 1140 x 1025 x 1300 mm, (44.88 x 40.35 x 51.18 in.)

Main cabinet

Supplied by : 3D Systems

Installed by : 3D Systems

Physical Dimensions

- Weight : 4000 kg (8818.49 lbs)
- Dimensions (H x W x D) : 2770 x 2380 x 1550 mm, (109 x 93.70 x 61.02 in.)

Electrical

The main cabinet will be connected to the Control Cabinet. Electrical connections have to be made on site. Cables are provided by 3D Systems.

Gas

The main cabinet will be connected to the Control Cabinet with flexible tubings. Pneumatic connections have to be made on site. All tubing is provided by 3D Systems.

Compressed Air

The main cabinet will be connected to the Control Cabinet with flexible tubings. Pneumatic connections have to be made on site. All tubing is provided by 3D Systems.

Cooling Water

Required for the scanhead and the laser. Supplied from chiller (installed in the Supply Cabinet). All tubing is providing by 3D Systems.

Network Connection - N/A

Noise Emission

- Noise pressure level : 76,9 dB(A).



Control Cabinet

Supplied by : 3D Systems

Installed by : 3D Systems

Physical Dimensions

- Weight : 450 kg (992.1 lbs)
- Dimensions (H x W x D) : 1970 x 800 x 1010 mm, (78.62 x 31.5 x 39.76 in.)

Electrical

Control cabinet will be connected to the Supply Cabinet. Electrical connections have to be made on site. Cables are provided by 3D Systems.

Gas

Control cabinet will be connected to the Supply Cabinet with flexible tubings. Pneumatic connections have to be made on site. All tubing is provided by 3D Systems.

Compressed Air

Control cabinet will be connected to the Supply Cabinet with flexible tubings. Pneumatic connections have to be made on site. All tubing is provided by 3D Systems.

Cooling Water - N/A

Network Connection - N/A

Noise Emission - N/A



Supply Cabinet

Supplied by : 3D Systems

Installed by : 3D Systems

Physical Dimensions

- Weight : 800 kg (1763.7 lbs)
- Dimensions (H x W x D) : 1970 x 950 x 1010 mm, (77.56 x 37.4 x 39.76 in.)

Electrical - Connected to Facility Power

- 400/480 VAC, 50/60Hz, 15kVA, 3ph

Note : the printer can also be supplied by 480 VAC. Wiring modifications must be made on site - by 3D Systems - during installation to support 480VAC.

- Nominal Current : 22A (400V), 18A (480V)
- 3 phases + PE electrical cable (6mm² section). Supplied by 3D Systems
- Connection on back of panel



The supplied electrical cable can be removed and replaced. Make sure to use cable having the same specifications as indicated. The maximal cable length is 20m (787.4 in.).

Gas : inert gas required. Nitrogen for non reactive powders, or Argon for reactive powders (Titanium...)

- Supply pressure : from 6 bar to 8 bar (87 - 116 PSI)
- Building process flowrate : 10 L/min (0.35 cubic feet per minute)
- Purge flowrate : 50 L/min (1.76 cubic feet per minute)
- Quality : purity > 99.99% for Nitrogen; purity grade 4.8 minimum for Argon
- Piping from inert gas supply to Supply Cabinet - Supplied by customer
- Connection on back panel - Quick coupler plug, internal diameter 6mm

Compressed Air

- Supply pressure : from 6 bar to 8 bar (87 - 116 PSI)
- Minimum flowrate : 100 L/min (3.5 cubic feet per minute)
- Quality class 4,4,4 according to ISO 8573-1:2010
- Lines from compressed air supply to Supply Cabinet - Supplied by customer
- Connection on back of panel - Quick coupler plug, internal diameter 6mm

Cooling Water

A chiller is fitted in the Supply Cabinet (required for the scanhead and the laser). The chiller requires demineralized water.

All tubing and demineralized water are providing by 3D Systems.

Network Connection

- Network cable, CAT6 - Provided by 3D Systems

Noise Emission - N/A



Process Filter

Supplied by: 3D Systems

Installed by: 3D Systems

The external process filter ships with the ProX DMP 300 system. The filter removes fumes, particles and any other products of the DMP process. The filter cannot be installed in a separate room. It must be installed adjacent to the main cabinet. The process filter is fitted on transport cart, allowing a quick, easy and safe filter replacement.

Physical Dimensions

- Dimensions (H x W x D) : 1431 x 809 x 879 mm, (56.34 x 31.85 x 34.61 in.)
- Weight : 50 kg (110.23 lbs)

Electrical - N/A

Mechanical Connection

The filter is connected to the main cabinet by flexible hoses. The hoses for installation ship with the ProX® DMP300 system.

Argon Gas - N/A

Compressed Air

The valves on the filter are controlled by the ProX® DMP300. Compressed air is delivered by 6mm Festo tubing from the ProX® DMP 300 to the filter. The tubing is provided by 3Dsystems.

Cooling Water - N/A

Network Connection - N/A

Noise Emissions - N/A



CUSTOMER SUPPLIED EQUIPMENT

The equipment listed below is not part of the ProX DMP 300 system however **all of the equipment listed is required**. The customer can purchase this equipment from an independent source or from 3D Systems (if so indicated).

- Vacuum Cleaner - Can be purchased from 3D Systems
- Oxygen Monitor - Can be purchased from 3D Systems
- Vacuum Extraction System

Vacuum Cleaner

Supplied by: Customer or 3D Systems

Installed by: Customer

Installations must have a wet separator, explosion proof vacuum cleaner. The RUWAC, NA35-110 explosion proof vacuum is required.

- Vacuum, Immersion Type, ATEX, HEPA, **230V, 50Hz** : P/N 151944
- Vacuum, Immersion Type, EXP 118, HEPA, **120V, 60Hz** : P/N 151923



Oxygen Monitor

Supplied by: Customer or 3D Systems

Installed by: 3D Systems

For safety when working with argon, you must install a room area oxygen monitor on the wall of your ProX DMP 300 room. The oxygen monitor should be installed approximately 60 cm (24 inches) above the floor.

The models offered by 3D Systems are:

- Oxygen Room Monitor, 120V (P/N 23746-101-01)
- Oxygen Room Monitor, 220V, Universal Plugs (P/N 23746-101-02)

Dust Extraction System

Supplied by: Customer

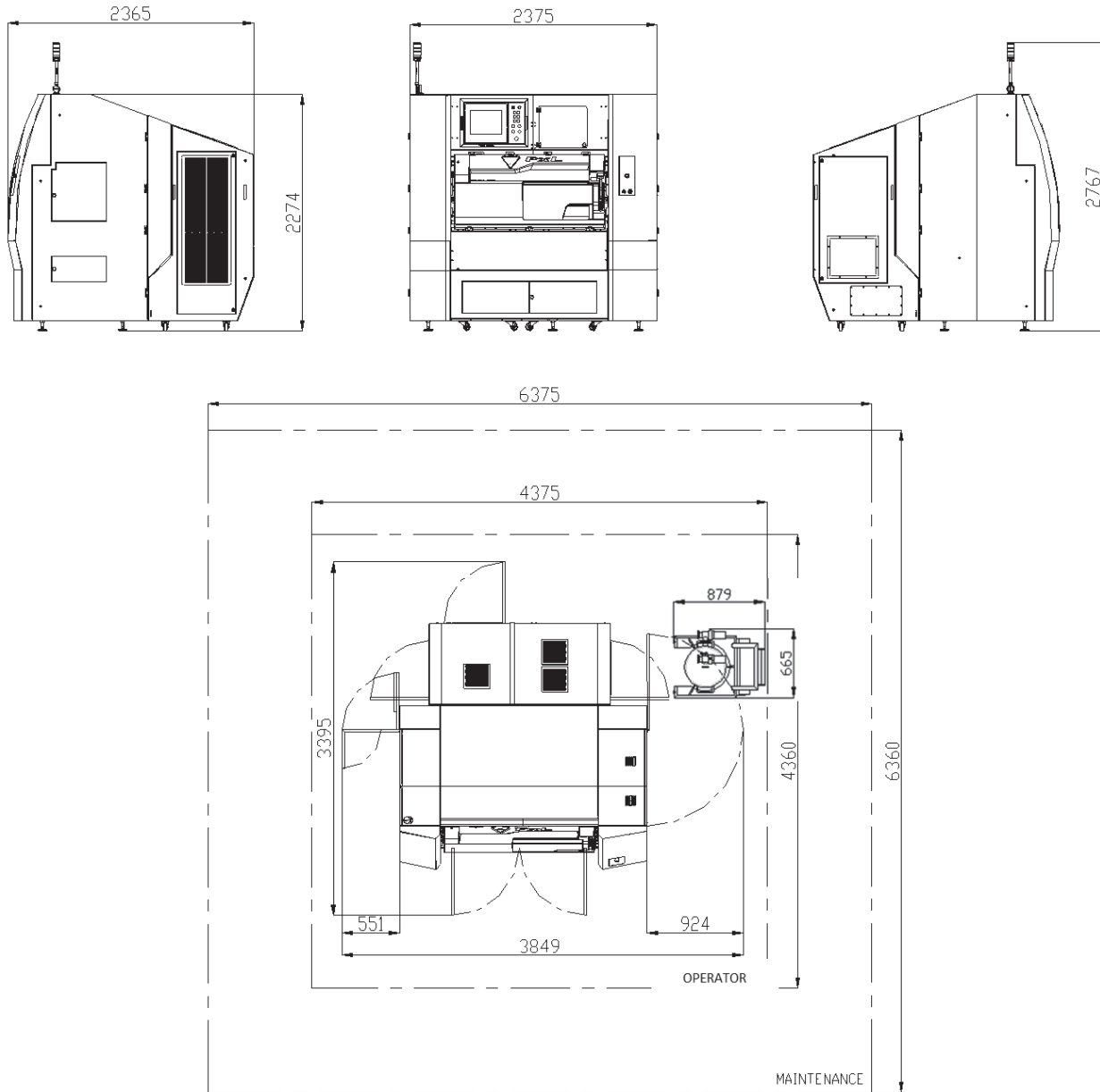
Installed by: Customer

3D Systems recommends a whole room, dust extraction system to remove airborne particles out of the air any time metal powder is handled.

3 ROOM REQUIREMENTS

WORKSPACE SPECIFICATIONS FOR THE PROX® DMP300

ProX® DMP300 installation requires a location with the following minimum dimensions (including maintenance access). The unit is mm.



FLOOR SPECIFICATIONS

REQUIREMENTS	COMMENTS
Vibration-free	Required
Floor load	3000 kg/m ²
First floor installation	Preferred
Grounded conductive or antistatic	Antistatic floor mats can be used

Conductive or dissipative flooring (metal/unpainted concrete) with a floor resistance of less than 10⁸ ohms .

REACTIVE METAL POWDER STORAGE

To store reactive metal powders in your facility:

- Use closed containers. Closed containers will prevent accidental dust generation and contamination.
- Always use conductive containers or containers lined with conductive material. Containers made from a conductive materials will help dissipate electrostatic charges.
- Store containers on a grounded conductive surface.
- Store separately from other chemicals such as, but not limited to, oxidizers and fuels.
- Store in a fireproof cabinet.
- Make certain you have small containers for small quantities of powder. Do not store small quantities of powder in large vessels.
- In the ideal case, large quantities of powder are stored in a suitable separate building, away from the production environment.

4 ATMOSPHERE REQUIREMENTS

ROOM VENTILATION

The DMP process takes place in an inert atmosphere inside the process chamber (Nitrogen or Argon, depending on material used). During the preparation and building process, the gas is released into the work place. Therefore, in small rooms, a minimum ventilation is required.

During loading and unloading the machine, powder particles will become airborne. The presence of metal powder in the work environment is unsafe and must be avoided as much as possible. Therefore adequate room ventilation (50 cubic meters/hour) is recommended and it is strongly advised to wear PPE (Personal Protective Equipment).

Air Conditioning

The facility air conditioning system where the printer is operating should be capable of dissipating 1.0 kW (3412 Btu/hr or 0.28 ton U.S. refrigeration) of heat or equivalent to maintain temperature requirements. Ensure that any air conditioning ducting does not vent directly onto the machine.

Room Air Source

The facility HVAC system provides **source air only**. Air that is introduced into the room is not allowed to recirculate back into the facility HVAC system.

The atmosphere in the ProX®DMP300 installation room must meet the following specifications:

ATMOSPHERIC VARIABLES	REQUIREMENTS
Room temperature	Heating and air conditioning installed A/C not blowing directly onto the main cabinet
Temperature	Operating range: (15 to 30) °C; (59 to 86) °F
	Storage range: (5 to 50) °C; (41 to 122) °F
Non-condensing relative humidity	No higher than 90%
Room air changes	4 per hour minimum
Heat dissipation	Maximum: 3.5 kW (12000 BTU/hr) Average: 2.6 kW (8900 BTU/hr)
Atmospheric corrosives	None; Clean Dry Air (CDA) is required

Room Air Exhaust

The facility must have a separate system for removing the air from the room. The system must remove the room air directly to the outside. For the exhaust system, 3D Systems recommends the use of TEFC (Totally Enclosed Fan-Cooled) motors for this application.



WARNING: FAILURE TO EXHAUST THE ROOM AIR DIRECTLY TO THE OUTSIDE WILL PUT PERSONNEL AT RISK FOR BREATHING AIR CONTAMINATED WITH METAL PARTICLES AND WILL PUT THE FACILITY AT RISK FOR AUTO-IGNITING FIRES.



WARNING: IF YOU ARE USING REACTIVE METALS, (TITANIUM OR ALUMINUM) AIR EXTRACTION EQUIPMENT SHOULD NOT CONTAIN FILTERS. FINE METAL PARTICLES WILL BE COLLECTED BY THE FILTER AND WILL BE A SOURCE OF AUTO-IGNITING FIRES.

5 ELECTRICAL REQUIREMENTS

The electrical cable ships with the printer, and consists of 3 phases + PE (section cable 6mm²). The phases and protective cables must all be connected to the facility's power.

The ProX[®]DMP 300 is designed to be connected to primary AC power directly from the facility's power circuit to the machine's input power. This task must be performed by a qualified electrician. The facility's power circuit must have a 32A branch protective circuit breaker (type D curve) with lockout/tagout capabilities.

All equipment and storage container must be grounded to prevent accumulation of static electricity.

6 GAS REQUIREMENTS

A customer supplied gas system (Nitrogen required when using non-reactive powders, Argon required when using reactive powders) must be in place **before** the ProX[®]DMP 300 is installed.

When installing the gas supply line:

- Route gas supply line through the ceiling.
- Locate the drop over the supply cabinet.

The connection of the gas supply is located on the back of the supply cabinet.

Gas	ProX [®] DMP300
Connection Type	Quick coupler plug, internal diameter 6mm
Flow Rate	Manufacturing : 10-15 liters/minute Purge : 50 liters/minute
Supply Pressure	Minimum 6 bar (87 psi) - Maximum 8 bar (116 psi)
Quality	Nitrogen : 99.99% or better Argon : 4.8 or better

For a gas supply, you may use a bulk (liquid) gas tank or gas cylinders.

If a liquid gas supply is used, the supply tubing from the gas source to the machine must be at least 20 meters (65.6 feet) long. This distance will act as a buffer and will make certain the temperature of the gas is not below freezing point when it enters the ProX[®] DMP300.



Caution: Allowing gas that is below 0 degrees C (32 F) to enter the DMP 300 will damage the machine.

If using gas cylinders, the following is recommended:

- Use one pack of twelve cylinders connected with an auto-switching manifold.
- A high volume flow pressure reducer must be used for the cylinders. This allows the chamber to fill quicker.
- Use two particle filters immediately after the reducer. One 5µm filter and one 0.01µm filter.

7 COMPRESSED AIR REQUIREMENTS

A customer supplied compressed air system must be in place **before** the ProX® DMP300 is installed.

When installing the compressed air supply line:

- Route compressed air supply line through the ceiling.
- Locate the drop over the control panel.
- Keep the compressed air line as short as possible to ensure proper pressure.

The connection for the compressed air supply is located on the back of the supply cabinet.

Compressed Air	ProX® DMP300
Connection Type	Quick coupler plug, internal diameter 6mm
Flow Rate	100 liters/minute
Supply Pressure	Minimum 6 bar (87 psi) - Maximum 8 bar (116 psi)
Quality	Class 4,4,4 according to ISO 8573-1:2010

8 WORKSTATION AND SOFTWARE REQUIREMENTS

CAD/CAM COMPUTER WITH PROX DMP MANUFACTURING SOFTWARE

Supplied by: Computer : Customer or 3D Systems - Software : 3D Systems

Installed by: Customer or 3D Systems

Before a part can be built on the printer, the manufacturing file must be loaded into the printer.

The manufacturing file is generated by **ProX DMP Manufacturing** standalone software. By using the industry-standard .stl file format, the manufacturing file includes a series of sliced cross-sections of the part and all the manufacturing parameters.

The manufacturing file can be uploaded by:

1. Ethernet network connection : the printer provides an integrated 10/100-megabit-per-second (Mbps) Ethernet network connection. This connection supports both the 10base-T and 100base-TX Ethernet standards. The connectors (RJ45 sockets located on the back panel of the supply cabinet and in front of the main cabinet) are designed for attaching a shielded twisted pair Ethernet cable (supplied with the printer).
2. USB connection : the printer provides an integrated USB socket. The manufacturing file can be uploaded with a USB key (not supplied).

The manufacturing file is then selected from the printer.

Prior to installing the software, ensure that workstation meets the following minimum specifications. The specifications described represent 3D Systems tested minimum “baseline” configuration for using the software. Although the software will run on less powerful computers, meeting the minimum recommended configuration will ensure acceptable performance.

ProX DMP Manufacturing system requirements		
	Minimum	Recommended
Operating System	Windows XP SP3	Windows 7 64bits
CPU	Dual Core @ 2.5 GHz	Intel ® Xeon ® E5-1620 v3 (Quadcore @3.5GHz)
RAM	2GB on 32bits, 8G on 64bits	16 Gbits
Hard Drive	7200 tr/min	SSD hard drive
Graphics	NVidia or AMD GPU with 2GB of RAM	NVidia or AMD GPU with 4GB of RAM
Screen resolution	1440 x 900	19" @ 1080p
Network	Internet connection	Internet connection

9 LIFTING EQUIPMENT

Before handling the equipment, verify the following:

- Use a forklift with a load capacity of at least 8000 kg (13200 lbs).
- Forks should be at min. 1.8 meters long (70.86 in.).
- Make certain all lifting equipment will fit through all doorways leading to the installation room.
- Standard moving and handling tools may be required (pallet truck, cargo trolley...).
- Staff insured and authorized to use the lifting equipment is necessary. 3D Systems-certified Customer Support Engineer are not qualified to use such equipment.

The equipment is delivered with steel beams (U profile for the main cabinet, I profile for control cabinet and supply cabinet), that must be removed during installation. After the installation, the control cabinet and the supply cabinet are easily moved as they are equipped with transport wheels. The main cabinet will stand on adjustable feets.

10 TOOLS

Tools that will be used in the presence of metal powders must be non-sparking, non-magnetic hand tools which are manufactured from Aluminum or special Aluminum-Bronze (AlBr) or Copper-Beryllium (CuBe2) alloys. These are the only tools that are safe to use in Ex zones where hazardous, flammable or combustible materials are present.

Please ensure that:

- All electric tools must be ATEX certified
- Work benches must be grounded (antistatic mats)
- Brushes and brooms must have natural fibers
- Only use aluminum dust pan

11 PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment (PPE), that is required when working with metal powders is as follows:

- Disposable masks and respirators - FFP3 class (EN149:2001), N99 or better (Occupational Safety and Health Administration standard)
- Eye protection
- Nitrile gloves
- Coveralls
- Head cover
- Shoes - antistatic, conductive soles, safety toe
- Antistatic or conductive outer garments
- Hearing protection depending on the dB level.

All of the items listed above must be acquired and available for each employee before the machine and materials arrive on site. All PPE must remain on site. Storage of the PPE must be made available.

12 WASTE DISPOSAL

Ability to dispose of:

- Contaminated filters
- Metal powder
- Clothes and paper towels used for cleaning

Need to have closed metal containers for waste and the ability to store the waste containers, if possible, in a closed environment outside the production facility.

Waste materials must be disposed of in accordance with all local, state and federal regulations.

13 FIRE SUPPRESSION

The facility must have a Class D fire extinguisher and a fire blanket present in the work area.

The automatic sprinkler system must be disabled in areas where reactive metals are used or stored. Several of the materials, (magnesium, titanium, aluminum, etc.) will react with water to produce hydrogen. With the sprinkler system disabled, local building code may require the installation of an inert gas system for fire suppression.

14 SPECIAL CONSIDERATIONS WHEN USING REACTIVE METALS

The modifications listed in this section must be observed if you will be using reactive metals in your facility. The following are considered to be reactive metals:

- Titanium and Titanium alloys
- Aluminum and Aluminum alloys
- Pure Nickel
- Pure Zinc

The automatic sprinkler system must be disabled in areas where reactive metals are used or stored. Several of the materials will react with water to produce hydrogen. With the sprinkler system disabled, local building codes may require the installation of an inert gas system for fire suppression.

Filters cannot be used in the ventilation system for the room. Fine metal particles will collect in the filter and become a source of auto-igniting fires.

15 FACILITY REQUIREMENTS CHECKLIST

In the sections that follow, you will find all the requirements your facility must meet before your ProX® DMP 300 can be installed. After your facility meets all of these requirements, complete and sign the **“Facility Requirements Checklist - ProX® DMP300”** on page 16 and submit it to 3D Systems Customer Support for review.

When Customer Support receives your completed checklist, a 3D Systems representative will contact you to verify your facility's readiness. When the representative is confident that all facility requirements are met, he or she will schedule a trip to your site to install the ProX DMP 300 and any additional equipment which was ordered.



NOTE: All facility requirements must be met before 3D Systems can schedule a trip to your facility to install the equipment.

HOW TO SUBMIT YOUR COMPLETED FACILITIES CHECKLIST

Submit your completed Facility Requirements Checklist by fax, mail, or email to one of the 3D Systems Customer Support sites below. This notifies them that your facility is fully prepared for installation.

COMMUNICATIONS FORMAT	NORTH & SOUTH AMERICA	EMEA; ASIA PACIFIC
Fax	+1 512-339-0634 attn: Customer Support	+33 473 334 586 attn: Customer Support
Mail	3D Systems Corporation 333 Three D Systems Circle Rock Hill, SC 29730, USA attn: Customer Support	3D Systems Parc Européen d'Entreprises Rue Richard Wagner 63200 Riom, France attn: Customer Support
Email	support@3dsystems.com	Hotline.Phenix@3DSystems-Europe.Com

Be sure to include the date you submitted your completed checklist so installation can be scheduled as quickly as possible.

If you need to speak to a 3D Systems Customer Support representative about your facility requirements, call:

- US and Canada: 888-598-1438
- International: +1 803-326-3930
- UK and EMEA: (+44) 1442 279883
- Europe: (+33) 4.73.33.45.85

FACILITY REQUIREMENTS CHECKLIST - ProX® DMP300

IMPORTANT			
<p>You must complete and sign this form before scheduling installation. The information on this form will be used to determine the necessary time that 3D Systems personnel will need to complete the installation.</p> <p>In case of multiprinters installation, use 1 x checklist per printer.</p>			
Contact name			
Phone, email, fax	Phone	Email	Fax
Facility address	COMPANY NAME:		
	ADDRESS:		
	ZIP CODE:		
	CITY:		
	COUNTRY:	STATE:	
Date submitted			
	<input type="checkbox"/>	Room Requirements completed	
	<input type="checkbox"/>	Atmosphere Requirements completed	
	<input type="checkbox"/>	Electrical Requirements completed	
	<input type="checkbox"/>	Measured 480 VAC facility power: _____ VAC, _____ Hz	
	<input type="checkbox"/>	Measured 400 VAC facility power: _____ VAC, _____ Hz	
	<input type="checkbox"/>	Gas Requirements completed	
	<input type="checkbox"/>	Compressed Air Requirements completed	
	<input type="checkbox"/>	Computer and Network Requirements completed	
	<input type="checkbox"/>	Lifting Equipment Available	
	<input type="checkbox"/>	Tools Available	
	<input type="checkbox"/>	Personal Protective Equipment Available	
	<input type="checkbox"/>	Waste Disposal System Established (Must comply with all applicable regulations)	
	<input type="checkbox"/>	Fire Suppression Equipment Available	
Comments			
Signature			

SECTION FILLED BY 3DSYSTEMS	
# Sales Order (S.O.)	
# Serial Number of the printer	

16 CONTACT INFORMATION

3D Systems

333 Three D Systems Circle

Rock Hill, SC 29730 USA

tel: 803.326.3900

email: moreinfo@3dsystems.com

www.3dsystems.com

NYSE: DDD

Customer Support Hotline

US and Canada: 888-598-1438

International: +1 803-326-3930

UK and EMEA: (+44) 1442 279883

Europe: (+33) 4.73.33.45.85

Sales and Service Phone Numbers

France: (+33) 4.73.33.45.85

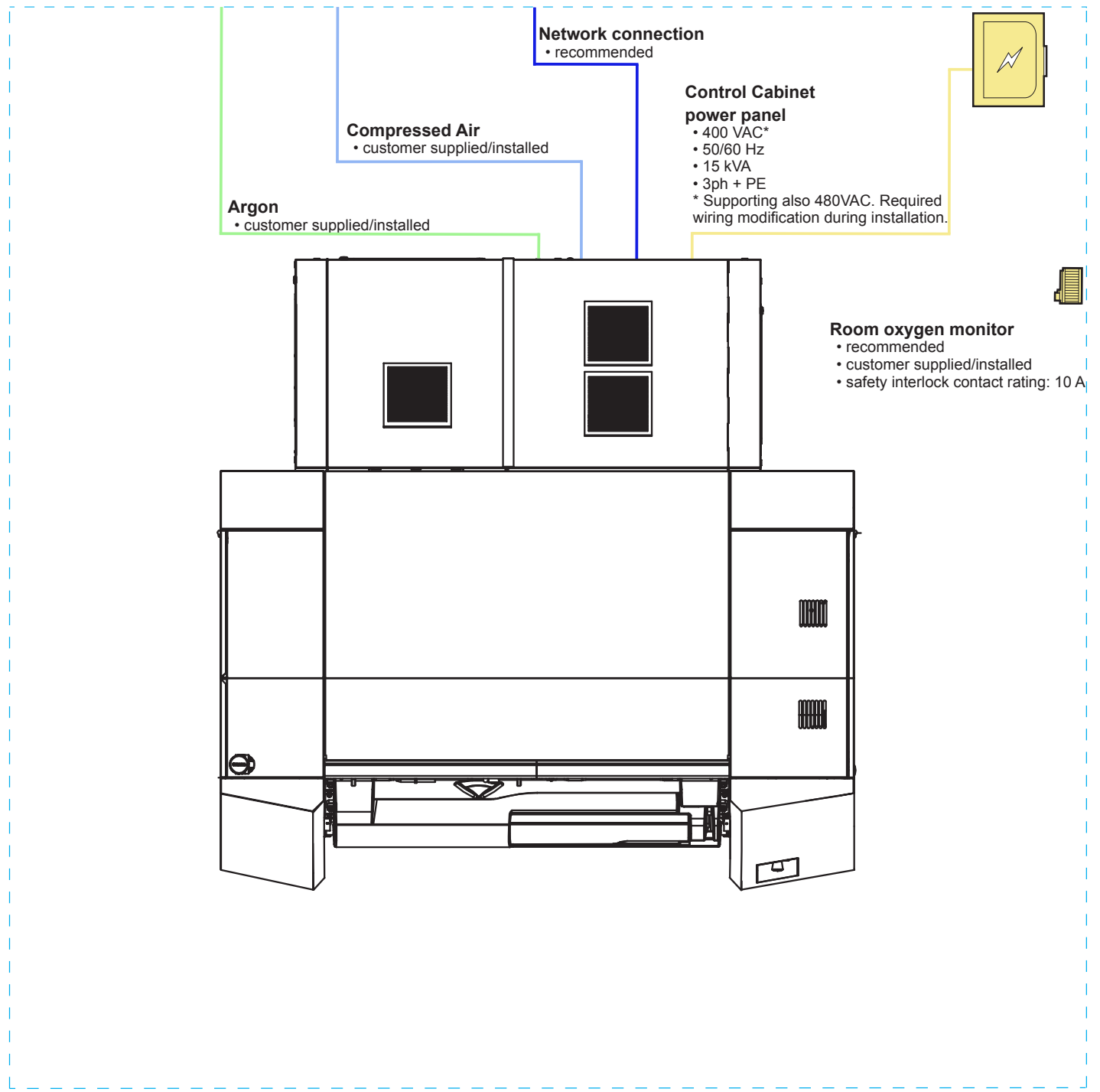
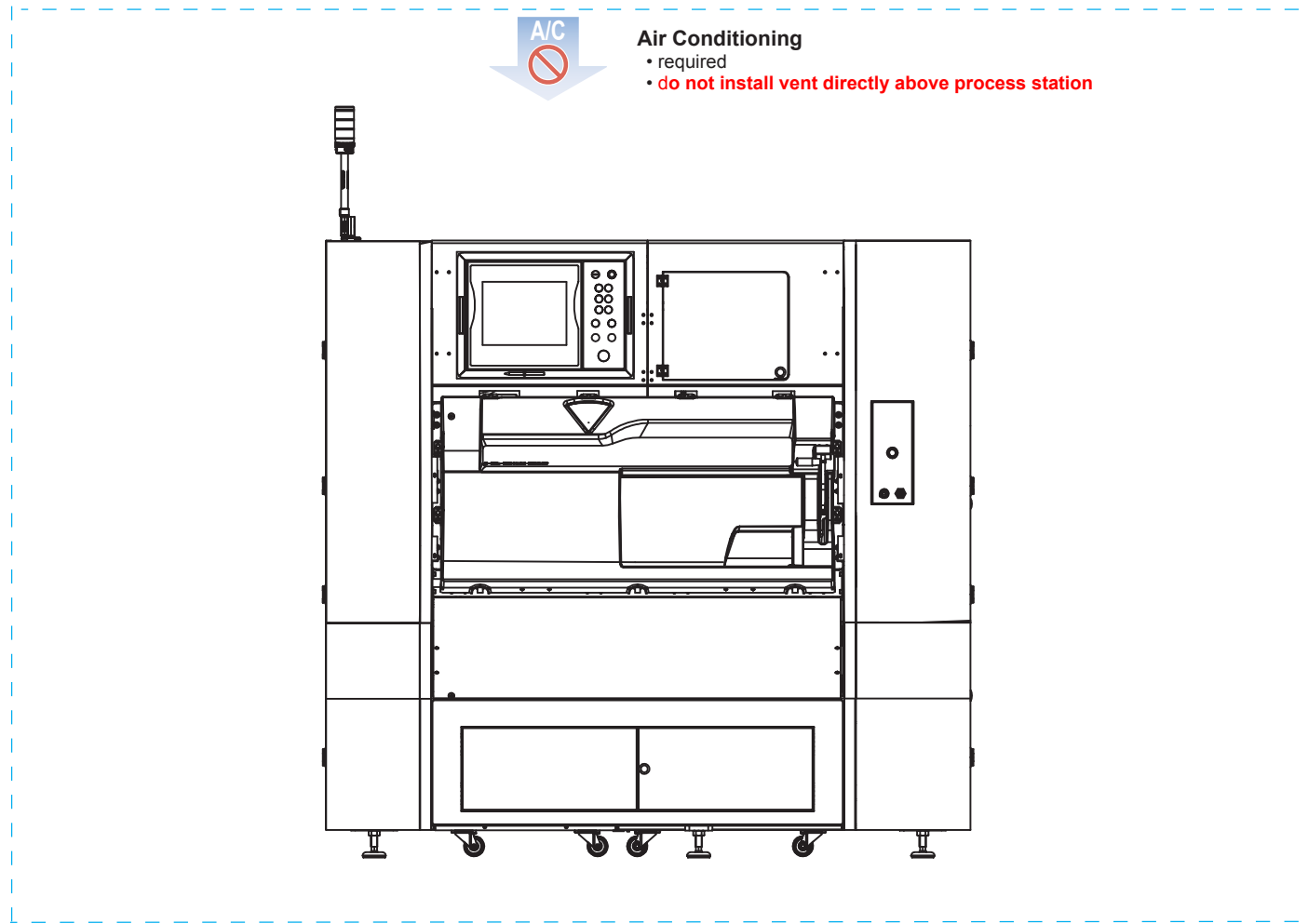
Italy: (+39) 039 68904 00

Germany: (+49) 6151 357-0

Hong Kong: (+852) 29 23 50 77

Switzerland: (+41) 26 439 95 90

UK: (+44) 1442 282 600



Gas

Gas	ProX DMP 300
Connection Type	Quick coupler plug, internal diameter 6mm
Flow Rate	Manufacturing : 10-15 liters/minute Purge : 50 liters/minute
Supply Pressure	Minimum 6 bar (87 psi) - Maximum 8 bar (116 psi)
Quality	Nitrogen : 99.99% Argon : 4.8 or better

- 1 **Bulk gas tank**
 - Nitrogen : 99.99% pure nitrogen
 - Argon : Quality 4.8

- 2 **Gas cylinders**
 - Nitrogen : 99.99% pure nitrogen
 - Argon : Quality 4.8
 - Connect cylinders with auto-switching manifold to ensure constant gas supply during build

Compressed Air

Compressed air	ProX DMP 300
Connection Type	Quick coupler plug, internal diameter 6mm
Flow Rate	100 liters/minute
Supply Pressure	Minimum 6 bar (87 psi) - Maximum 8 bar (116 psi)
Quality	Class 4,4,4 according to ISO 8573-1:2010

Atmosphere

max 30° C (86° F)

min 15° C (59° F)

Room temperature setpoint and stability

- set temperature between 20° C and 25° C (68° F and 77° F)
- temperature should be constant to ±5° C (± 9° F)

Note : the painting pipe colors are only for indication, and might not fit with your local, state and federal regulations. Always refer to the pipe color coding standards of your local, state and federal regulations.



3D Systems, Inc.

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