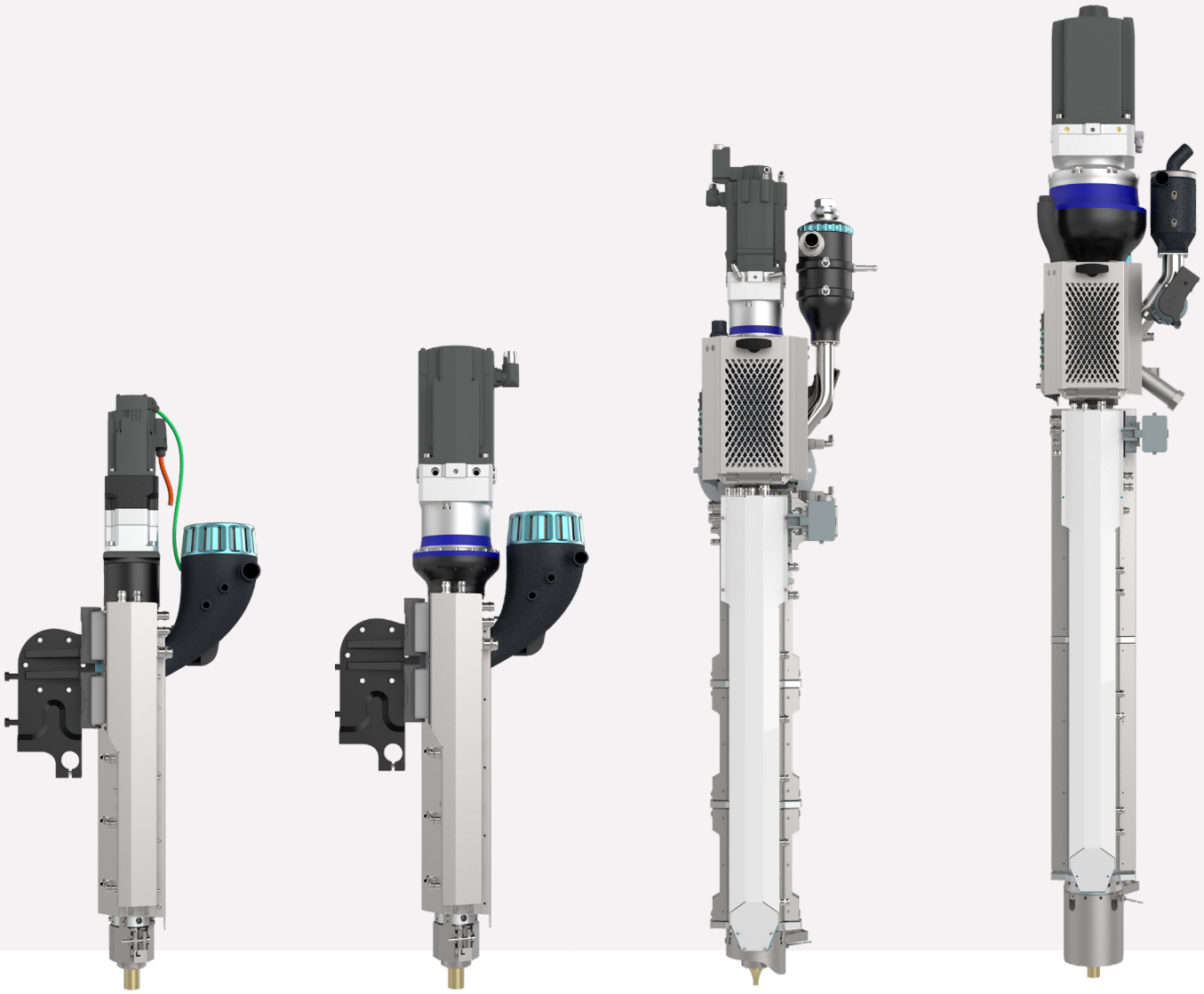
RE-Series overview

ROBOT EXTRUDER



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Stand-alone system

Our extruders are accompanied by a base unit that controls temperature, extrusion speed, automatic material transport and ensures safe operations. This allows our RE-Series to work as a stand-alone extrusion system.

Easy to integrate

The RE-series can be controlled by a wide variety of CNC or robot-controllers using analog-digital signals. With our lightweight solution you can transform your robot or gantry into a high output 3D printer.

Broad material variety

The nitrated barrel inside our extruders offers resistance against abrasive materials. This allows processing of a wide variety of short-fiber reinforced thermoplastic composites offering many applications in different industries.

E40 Robot-Extruder

General information

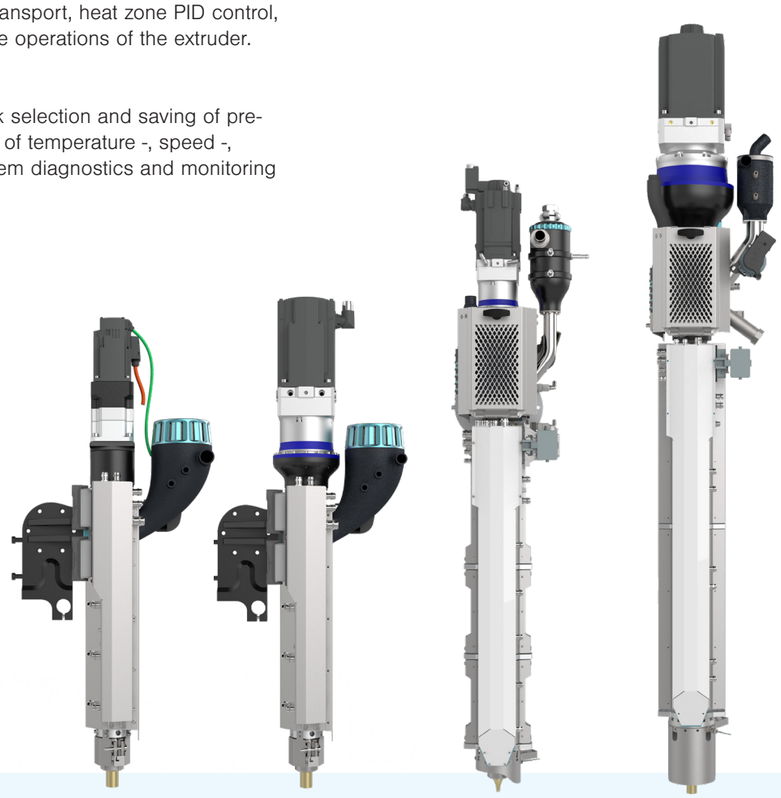
From the very beginning our Robot Extruder series have been designed specifically for large scale additive manufacturing. Since clients have different needs for their applications, we offer a broad range of models.
Our extruders vary in terms of weight, output, heating power and other specifications.

CEAD Software

The CEAD software is directed to material processing and controls, including material transport, heat zone PID control, water cooling and overall safe operations of the extruder.

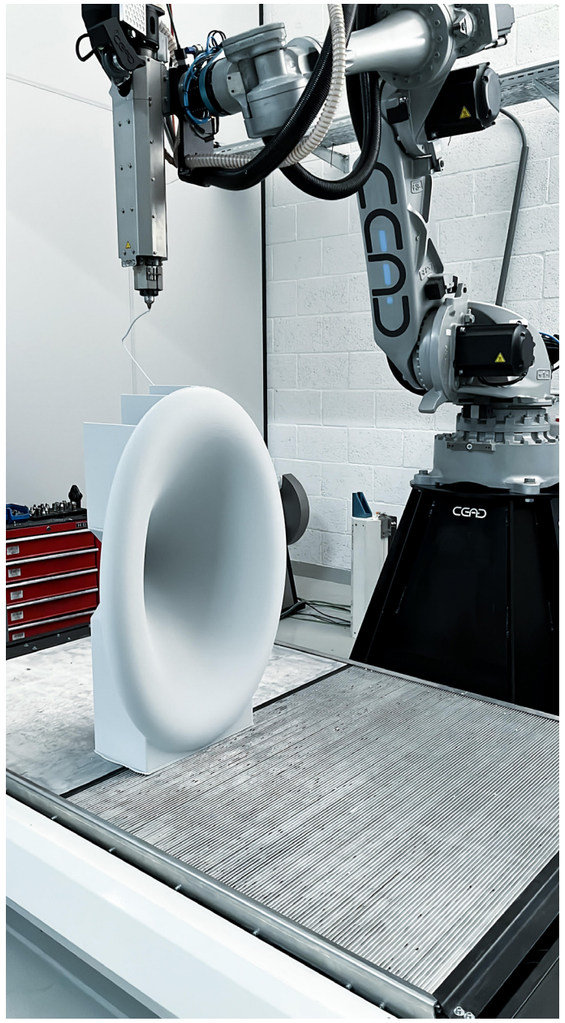
HMI

Allows extruder control, quick selection and saving of pre-set material recipes, tracking of temperature -, speed -, alarm - and torque logs, system diagnostics and monitoring operating statistics.



RE-Series comparison

Type	E25	S25	E40	E50
Weight (kg)	30	40	70	170
Dimensions W×D×H (mm³)	230×340×980	375×375×1100	380×300×1780	390×380×2250
Max output (kg/h)	12	24	60	84
Screw diameter (mm)	25	25	40	50
Heat zones	4	4	4	5
Electric heating power (kW)	2.75	2.75	8.9	11
Max temperature (C°)	400	400	400	400
Cooling zones	1	2	3	3
Motor power (kW)	1	2.7	6	8.2
Drive system	Siemens Servo	Siemens Servo	Siemens Servo	Siemens Servo
Nozzle size (mm)	2-18	2-18	4-24	4-24
DFC compatibility	Yes	Yes	Yes	Yes
Dryer (L)	100	300	300	400



Ancillary systems

To maximize your workflow and completely furnish your robotic cell, we offer additional technology components.

Pellet dryer
The pellet dryer is required when processing various thermoplastic materials. Optional: automated hopper loader for easy material loading and continuous 24/7 operations.

Print bed
The proprietary print bed facilitates a non-permanent mechanical bonding feature between the printed part and print surface. The CEAD solution provides a rigid and easy-to-use build platform.
Optional: multiple sizes and/or heated bed upgrade available.

Extruder mount
Easy to install parking spot for the extruder when the robot is used for multiple processes.

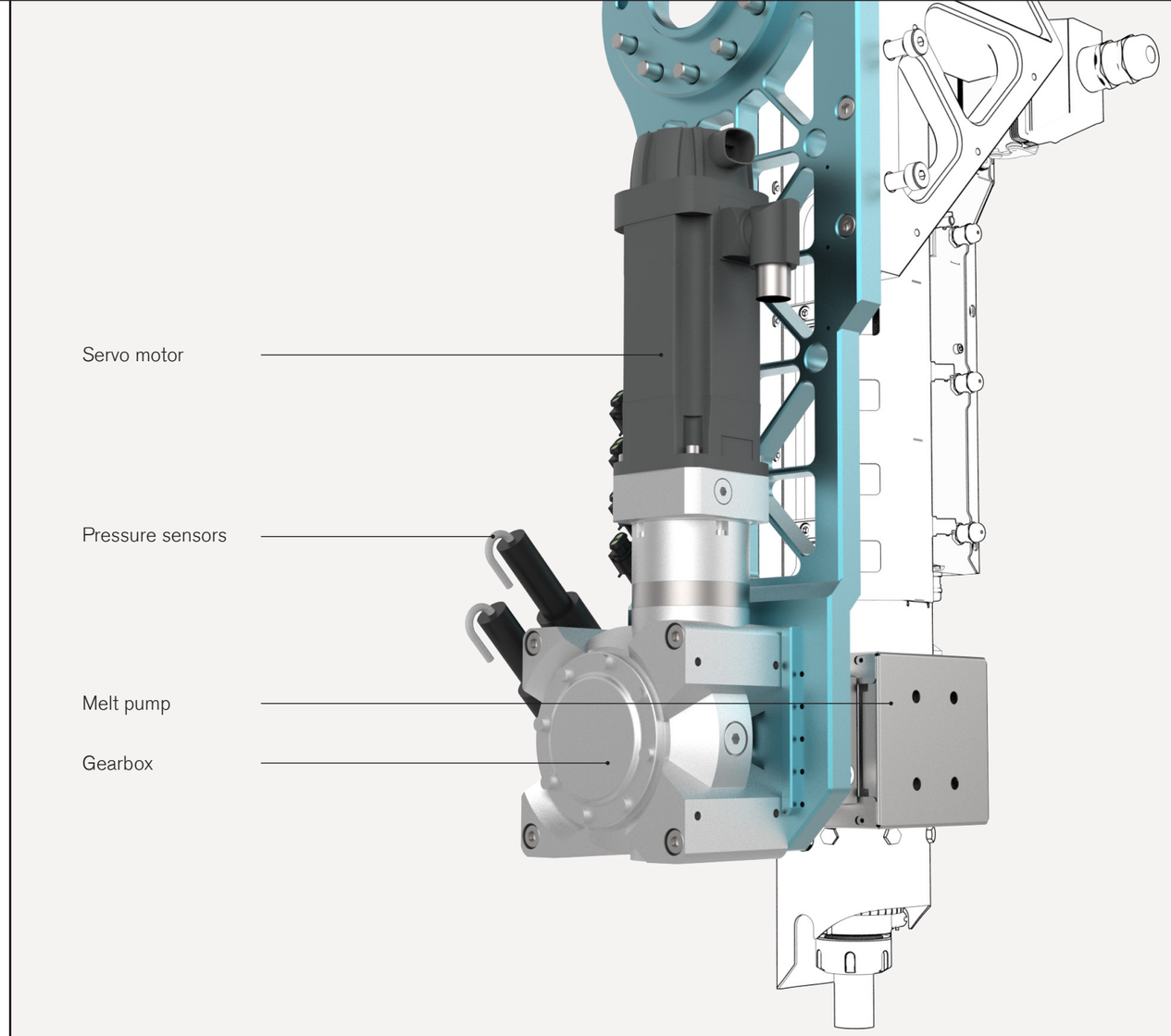
Materials

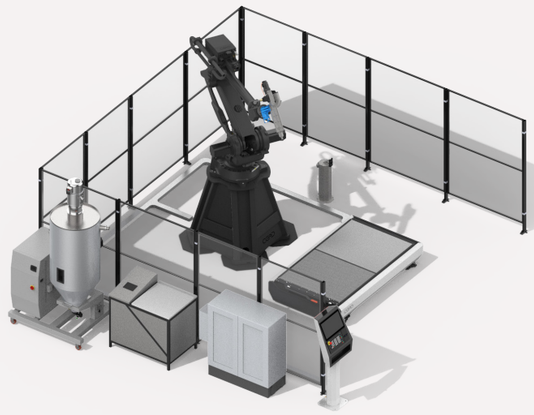
CEAD offers a wide variety of fiber reinforced plastic materials for different kind of applications. Find our latest materials brochure and up to date material offerings. All materials are supplied in pellets.

Biobased materials
Materials such as PLA/PP combined with cellulose fibers.

Commodity materials
The usual suspects PP/ABS/ASA/ PET/PC combined with glass fibers.

High-end materials
For ultra strong parts PEEK/PESU/ PPS combined with carbon fiber.





DFC is only available in combination with Flexbot series

Dynamic Flow Control

To achieve more complex parts with smaller feathers and start/stop possibilities CEAD has developed Dynamic Flow Control (DFC). Our DFC upgrade is only available in combination with our Flexbot series.

Control material flow
With DFC it is possible to accurately control the flow of thermoplastic material between the extruder and the nozzle, enabling to deposit exact desired amounts of material on a specific location. This enables the robot extruder to move along a toolpath without extrusion, allowing start and stop printing possibilities.

CNC control
The DFC upgrade and our Flexbot series are controlled by Siemens sinumerik Run MyRobot to completely tune the movements of the robot together with the flow of material and to eliminate the need of an extra robot controller.

CEAD is a technology supplier of 3D printing equipment and pioneer on the frontier of large scale composite additive manufacturing. We supply a total package when it comes to 3D printing solutions and offer the latest innovative technology, assistance with installation, training, maintenance and support. We will help you build your production process from start to finish.