

ADDITIVE MANUFACTURING APPARATUS AND SYSTEM WITH VACUUM
ASSEMBLY, AND METHOD OF USING THE SAME

ABSTRACT

There is provided an AM apparatus (10) for an AM process (12). The AM apparatus
5 (10) has an AM assembly (14) with a build chamber (20) to support part(s) (22) built with a
powder (24), in a build operation (26). Unused powder (24a) accumulates in the build chamber
(18) during the build operation (26). The AM apparatus (10) has a vacuum assembly (52) with
duct line(s) (54) in flow communication with the build chamber (20), and a powder receptacle
(80) in flow communication with the duct line(s) (54). The powder receptacle (80) has coupling
10 member(s) (100) allowing the powder receptacle (80) to be reversibly attached to the duct line(s)
(54). The vacuum assembly (52) includes a vacuum apparatus (120) coupled to, and in flow
communication with, the powder receptacle (80), via vacuum duct line(s) (122). The vacuum
assembly (52) pulls the unused powder (24a) from the build chamber (20) to the powder
receptacle (80), and provides an automated removal (138) of the unused powder (24a) from the
15 build chamber (20) into the powder receptacle (80), to avoid manual removal (139) of the unused
powder (24a).

FIG. 1A