



REFLASH STATION

Support just-in-time software development processes with efficient in-plant reflash stations.

Movimento simplifies large-scale in-plant reflashing operations, making them more manageable and cost-effective via a system of ECU reflash systems controlled through a single hub.

Plant engineers can also dynamically set up reflash campaigns, and the system's scalability accommodates varying factory sizes.

In addition to supporting just-in-time software development, Movimento excels at large package flash campaigns that would otherwise risk costly production line delays. Additional features include:

- **Custom system definition:** Movimento defines tailored reflash, validation, and relabeling procedures for each customer.
- **Job request management:** Movimento rigs request reflash jobs from the hub, centralizing control of the process.
- **Easy-to-use operation:** Starting a reflash requires only two steps: (1) insert the ECU, and (2) pull down the handle.
- **Secure ECU handling:** An electronic lock protects the pogo pin connection interface between station and ECU.
- **Compatibility:** You can easily adapt rig stations for various vehicle protocols like CAN-FD, BroadR-Reach, FlexRay, and more.



BENEFITS

- **Easy to use.** Plant operators can operate the station after a small amount of training
- **One operator can manage multiple rigs**
- **Scalable number of rigs**
- **Automatic validation that each label printed and attached is the correct one**
- **Stations can be moved between factories**

- **Fixture adaptability:** Movimento utilizes replaceable fixtures for quick ECU changes and flexibility.
- **Movimento ECU reflash support:** A full suite of support services includes replaceable fixture design, vehicle protocol assistance, and reflash requirement definition for targeted ECUs.

IN-PLANT SOFTWARE UPDATES

Flashing stations allow plants to perform software updates on ECUs, ensuring vehicles ECUs have the latest software before leaving the factory.

COST EFFICIENCY

The cost-effective design of Movimento rig stations offers a significant return on investment by streamlining the ECU update process.



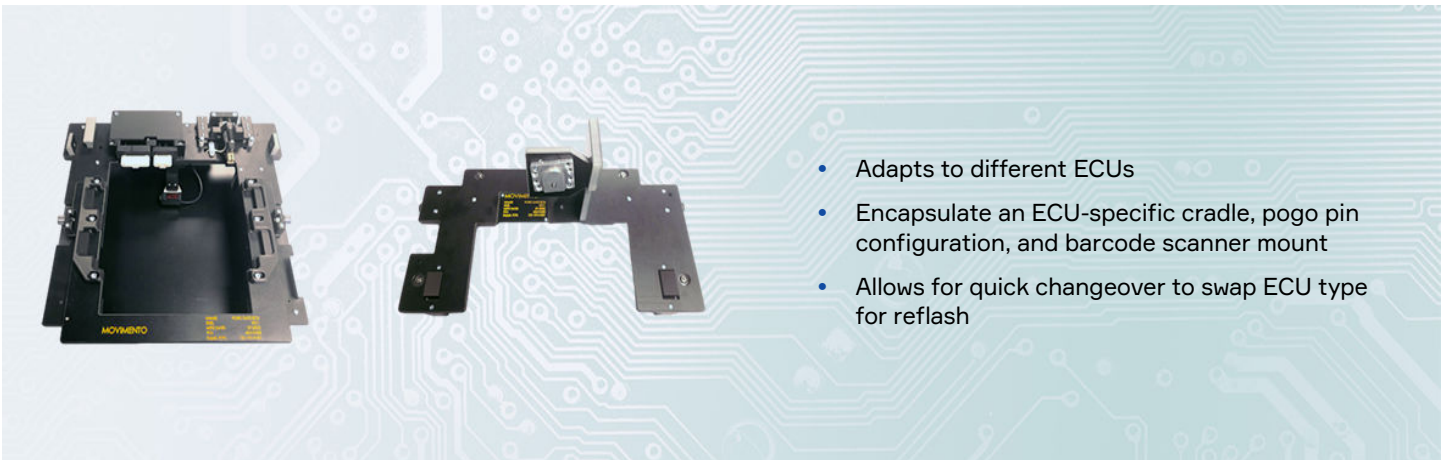
BASE UNIT FEATURES

Metal enclosure	Contains all base unit components
Industrial PC	Performs the reflash procedure, 10/100 Mbit ECU Ethernet communication
Vehicle comm adapter(s)	Communicates with ECU
Relays	VBAT and electric lock control
DIO	Sensor read
Circuit breaker 24V	Cuts components power in case of short
Circuit breaker 12V	Cuts VBAT power in case of ECU short
Confirmation button	Pressed by operator to indicate that the new label has been attached to the ECU
Power supply 24V	External power supply cable
Display	10" touchscreen
Barcode scanner	Keyence SR710, with quick mount
Stacklight	Four color
E-stop	Cuts power instantly (integrated with table)



REPLACEABLE FIXTURE FEATURES

Cradle and tray	For ECU loading
Pogo pins	For mating ECU connectors
Self-adjustable pogo pin blocks	Floating suspension for alignment to actual connector pin placement
ECU presence sensor	Detects when an ECU has been introduced into the cradle
Electric lock	Locks in the ECU during the reflash procedure
Lock sensor	Confirms successful lock-in
USB memory	Fixture configuration information (read by base unit for fixture type detection)
Barcode scanner holder	Holder with quick mount
Connector	Connects base unit cable



- Adapts to different ECUs
- Encapsulate an ECU-specific cradle, pogo pin configuration, and barcode scanner mount
- Allows for quick changeover to swap ECU type for reflash

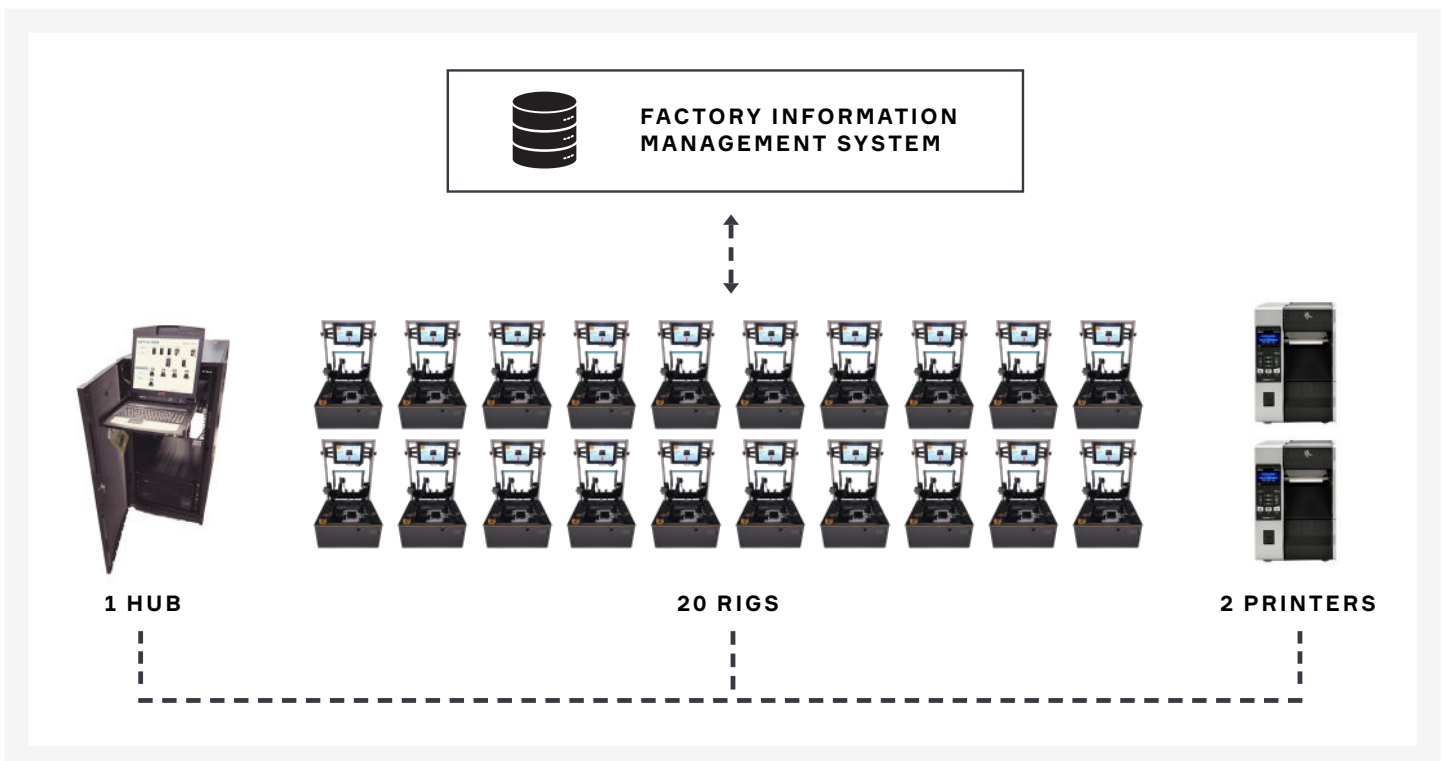
REFLASH STATION SYSTEM OVERVIEW

A Movimento reflash station typically contains three components:

- A central hub
- Multiple ECU rigs
- Label printer(s)

In the example below, a central hub controls 20 rigs, with two printers producing the updated labels.

99.9%
Movimento's overall flash and reflash success rate



EXAMPLE PRODUCTION FIGURES

Assuming a module flashing time of 13 minutes, with two minutes for attaching a new label and switching out ECUs, three operators can flash 600+ units over the course of a single eight-hour shift using the 20-rig setup shown above.

**REFLASH 600+
UNITS IN ONE
EIGHT-HOUR SHIFT**

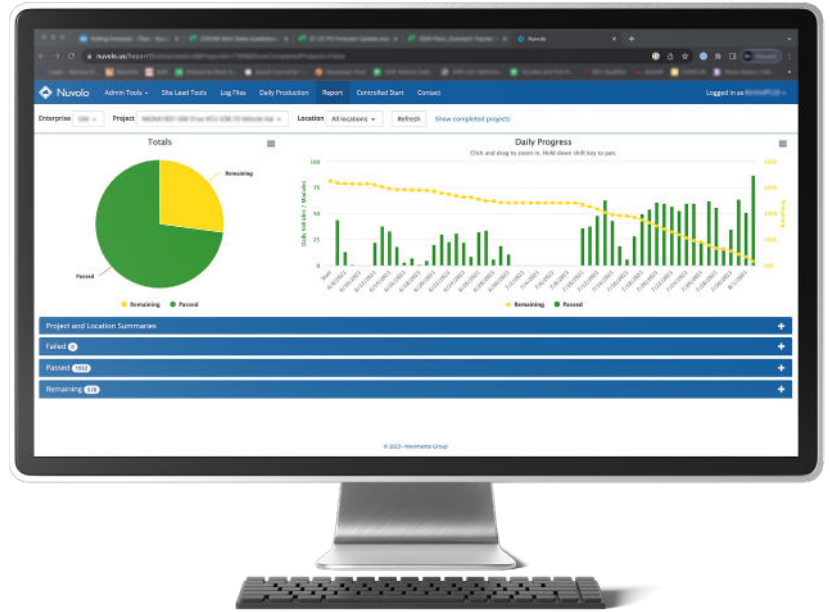
NUVOLO CLOUD SERVICES

To help manage on-site rig production, the Nuvolo Cloud serves as a tracking and reporting tool to manage reflash station production and quality.

For insights into your production and progress, you can log in and view current and historical production metrics.

Instantly know what modules were flashed when, with what device serial numbers and software types. This includes the ability to review individual log files for troubleshooting.

And, for compliance purposes, the Nuvolo Cloud tracks all module flashes with 100% traceability.



Did you know?

Nuvolo Cloud Services also offers a suite of project management tools to manage your reflash campaigns and track support tickets.

Meeting the demands of evolving software throughout the vehicle lifecycle

On-site teams
Dedicated teams that ensure early production, media, show, etc. vehicles' software is up-to-date



2

OEM production line software flashing
Dynamically flash ECUs while vehicles are on OEM production lines; no added wait time and reduced inventory complexity



3

Supplier software support
Initial module software flash; completed as part of existing Tier 1 manufacturing line processes



1



Universal software reflash
Delivers safety-critical, complex, and time-sensitive software updates to all vehicle modules for in-vehicle and loose modules

4

Movimento provides software management options for every stage of the vehicle production lifecycle

Pre-production

Production

ABOUT MOVIMENTO

Whether you're looking for preproduction, in-plant, or emergency reflash services, Movimento can help solve your flash and reflash challenges.

Visit movimentogroup.com