



MANUFACTURING

FORWARD MANUFACTURING CELL

A CONTAINERIZED PRODUCTION CELL FOR THE GOOSE ROUND

Ship the factory, not the rounds: a containerized cell that moulds, assembles and proves Goose rounds on an ally's own ground.



4 + 1

CONTAINERS: 40 FT HIGH-CUBE, 20 FT ISO

~200 kVA

ELECTRICAL SERVICE, GRID OR GENERATOR SET

~30 × 18 m

WORKING PAD

6–10

CREW PER SHIFT

~55 t

ALL-UP CELL MASS

1.6 kg

THE ONE ARTICLE: GOOSE CS-110, Ø90 MM

AT A GLANCE

A MOULDING SHOP IN FIVE CONTAINERS. ONE ARTICLE OUT OF THE FAR END.

Feedstock in at one end, a proven, serialized carrier round out of the other, on the host's ground and under the host's schedule, with the tooling art and the system's judgment kept in Canada.

SOVEREIGN SUPPLY

THE MAGAZINE'S SOURCE ON THE HOST'S SOIL

An allied nation moulds, assembles and proves its own rounds on its own floor, from its own feedstock, on dies cut in Canada. A shipping queue becomes a production schedule the host controls.

THE FENCE

WHAT STAYS IN CANADA STAYS IN CANADA

No mould-making, no fire control, no seeker, no autonomy and no guidance-electronics production travel with the cell. Worn tooling returns to the home plant for refresh.

ACCOUNTED FOR

EVERY PROVEN ROUND GETS A SERIAL

Each proven round is serialized against the cell's production ledger, which also schedules calibration, consumables and die rotation. The host can show an inspector what was made, when, and from what.

A MOULDING SHOP

NOT A MUNITIONS PLANT

The cell moulds airframes and assembles inert kinetic rounds. It holds no warhead, no seeker and no fire control, and no energetic material exists anywhere in the process.

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01 · SPECIFICATION

THE CELL BY CLASS AND ENVELOPE. EACH FIGURE WITH ITS BASIS.

The cell's form, its equipment by class, its materials, what it draws on and the fence it holds, from the production package and the published pages, with the basis of every figure beside it.

01 THE ARTICLE

PARAMETER	VALUE	BASIS
Article	Goose CS-110 round, 1.6 kg, Ø90 mm, fully unpowered	the only article the cell makes
Training article	The same round in recycled PET, on the same tooling	production package
Round construction	Moulded polymer body and fins, inert kinetic nose mass	production package; the published page
Launch	Compressed shop air	production package
Electronics in the round	None: no battery, no motor, no onboard guidance electronics	the published page
Energetic material in the article or the process	None	production package; the published page

02 FORM AND FOOTPRINT

PARAMETER	VALUE	BASIS
Containers	4 × 40 ft high-cube and 1 × 20 ft ISO	design figure, the production package
Working pad	~30 × 18 m	design figure, the production package
All-up mass	~55 t	design figure, the production package
Layout	Module containers under an aisle canopy, with a utilities container at one end	the cell's 3D model, as published
Commissioning	Stood up and proved on the buyer's floor as one capital program	the published page
FMC-A, feedstock and drying	40 ft high-cube: sealed resin storage, a desiccant drying bank, loss-in-weight blending to the press, a moisture analyser bench	module set, the in-situ production study
FMC-B, moulding hall	40 ft high-cube, side-opening: the injection press with its mould-temperature controller and chiller loop, and a demould, deflash and trim bench	module set, the in-situ production study

PARAMETER	VALUE	BASIS
FMC-C, machining and assembly	40 ft high-cube: the CNC turning station for the nose slugs, fixtured assembly benches, fastener and adhesive stores	module set, the in-situ production study
FMC-D, QC, proof and packout	40 ft high-cube: conditioning shelf, gauge bench, mass and centre-of-gravity fixture, the proof station, serialization and packout to crates	module set, the in-situ production study
FMC-E, utilities and spares	20 ft: shop-air compressor and receiver, electrical distribution and transformer skid, chiller heat rejection, spares store and tool crib	module set, the in-situ production study
Pad layout	The four 40 ft modules in two facing pairs around a covered central aisle of ~6 m, with the utilities container at one end	design study figure, the in-situ production study
Flow	One direction: feedstock in at the A end, crated rounds out at the D end	the in-situ production study
Floor loading under the moulding hall	~2,900 kg/m ²	design study figure, the in-situ production study

03 EQUIPMENT BY CLASS

PARAMETER	VALUE	BASIS
Moulding	Injection press, 90–160 t clamp class	design range, the production package; tonnage follows the mould design
Hollow sections	Blow moulding	production package, moulding hall
Tooling set	CNC-cut injection and blow moulds, and trim dies	production package
Assembly	Fin-fit, nose-mass insertion and balance fixtures	production package
Feed	Feed augers at the assembly fixtures	the published page
Nose slugs	Compact CNC turning centre	production package
Proof launcher	Reusable ~30 bar shop-air launcher, supplied with the cell	production package
QA and proof station	Dimensional and mass-and-balance checks, and an indoor proof-fire lane	production package
Serialization	A serial on the cell's production ledger for every proven round	the published page

PARAMETER	VALUE	BASIS
Material intake	Certificate bench, scales and a moisture analyser	equipment register, the in-situ production study
Drying	Desiccant dryer bank with closed conveyance	equipment register, the in-situ production study
Blending	Loss-in-weight blender and feeder to the press	equipment register, the in-situ production study
Nose-mass seating	Insertion press, torque station and locating fixtures	equipment register, the in-situ production study
Seal fit	Ring gauge set and seal press for the obturator	equipment register, the in-situ production study
Inspection	Conditioning shelf, gauge bench with process-control charting, mass and centre-of-gravity fixture	equipment register, the in-situ production study
Marking and packout	Laser marker, ledger terminal and crate sealer	equipment register, the in-situ production study
Utilities plant	Compressor with certified receivers, electrical distribution and chiller heat rejection	equipment register, the in-situ production study

04 KEPT OUT OF THE CELL

PARAMETER	VALUE	BASIS
Mould-making	None: no 5-axis machine, no EDM, no mould steel	production package
Tooling refresh	At the home plant; worn tooling returns for refresh	production package
Fire control, seekers, autonomy, guidance electronics	No production of any of them	production package
Wash line	None; the recycled-PET wash and compound front end stays with host industry	production package

05 MATERIALS

PARAMETER	VALUE	BASIS
Load-bearing flight structure	Certified glass-filled nylon	the material boundary
Recycled PET	Training and inert rounds only	the material boundary
Bottle-to-part stages in the cell	Dry, mould and finish	production package
Stages left with the host	Collect, sort, shred, wash and compound	production package
Service-round feedstock	Qualified resin pellets	the published page

PARAMETER	VALUE	BASIS
Moulds, cores and inserts	Tool steel, cut in Canada and re-cut on the machines that made them	the published manufacturing and cell pages

06 POWER, UTILITIES AND SITING

PARAMETER	VALUE	BASIS
Electrical service	~200 kVA, peak ~250 kVA, from the grid or a generator set	design study figure, the in-situ production study
Largest loads	Press heaters and hydraulics, then the dryers, the chiller and the compressor	the in-situ production study
Compressed air	Self-generated in the utilities module; feeds process air and the proof launcher, the same air that launches the round in service	the in-situ production study; the published page
Water	A potable point and chiller top-up only; process cooling is a closed loop	the in-situ production study
Pad	Level, drained and compacted, with road access for 40 ft trailers	the in-situ production study
Environmental control	Container air handling holds the process space in specification	the in-situ production study
Security	Perimeter, access control and a visitor regime to the agreed standard	the in-situ production study
Connectivity	Periodic batched synchronization of the production ledger; the line itself runs offline	the in-situ production study
Explosives siting distances	None, and no hazard-class storage or magazine licence, because nothing in the process is energetic	the in-situ production study

07 CREW

PARAMETER	VALUE	BASIS
Crew per shift	6–10, with cross-training	design study range, the in-situ production study
Cell lead and process technician	1, running the campaign to the licensed process and holding the ledger	crew model, the in-situ production study
Press and feedstock operators	1–2, on intake, drying, blending and the press	crew model, the in-situ production study

PARAMETER	VALUE	BASIS
Machinist	1, turning the nose slugs and finishing small parts	crew model, the in-situ production study
Assembly technicians	2–3, on the assembly and seal benches	crew model, the in-situ production study
QA technician	1, on inspection, proof, serialization and lot closure	crew model, the in-situ production study
Utilities and maintenance	1, on the utilities module, planned maintenance and pressure-system checks	crew model, the in-situ production study
Certification	Per station, against the licensed criteria, revocable and re-verified at audit	the in-situ production study
Recertification	Annually, and on every design revision	the in-situ production study
Training ceiling	The crew is trained to run the licensed process, never to design moulds, develop process parameters or make tooling	the in-situ production study

08 QUALITY AND ACCEPTANCE

PARAMETER	VALUE	BASIS
Reference masters	Sealed reference rounds and gauge masters ship with the cell and are re-verified against the home plant's standards	acceptance architecture, the in-situ production study
Gauge calibration	Every cell gauge is calibrated against the masters; where masters and line disagree, the masters win	acceptance architecture, the in-situ production study
First-article acceptance	A witnessed first-article campaign built by the certified host crew and measured in full, with a sample returned to Canada for comparative evaluation	acceptance architecture, the in-situ production study
Licence activation	No first-article acceptance, no production licence	acceptance architecture, the in-situ production study
Mass and centre of gravity	Measured on every round	the in-situ production study
Re-qualification triggers	A mould refresh or repair, a resin lot-source change, a station equipment change, a crew certification lapse or a process-control violation	the in-situ production study

PARAMETER	VALUE	BASIS
Serial	A moulded-in date code and a laser-etched serial, applied on lot closure	the in-situ production study
Reconciliation	Serials issued against licence consumables issued, with periodic physical audit	the in-situ production study

09 CONSUMABLES AND SUSTAINMENT

PARAMETER	VALUE	BASIS
Licence consumables	Mould and die refresh sets, obturator seal stock and rings, assembly fixtures and gauge wear parts, launcher seals and valves, qualified resin certification, and bonding consumables	consumables register, the in-situ production study
Mould wear clock	Shot count; glass-filled resin is abrasive	the in-situ production study
Press wear clock	Hours and cycles on hydraulics, heater bands, screw and barrel	the in-situ production study
Dryer wear clock	Regeneration cycles on desiccant and filters	the in-situ production study
Gauge clock	Calibration interval, against the shipped masters	the in-situ production study
Pressure plant	Hours plus statutory inspection on the compressor and receivers	the in-situ production study
Spares held at the cell	Wear spares, seals, filters, a gauge set and consumable stock for the campaign in hand	the in-situ production study
Spares held in Canada	Mould refresh sets, major press spares and replacement fixtures	the in-situ production study
Maintenance boundary	The host's technician keeps the line running; anything touching tooling geometry, gauge masters or process configuration is the licensor's work	the in-situ production study
Support	Calibration, upgrades and process support for the life of the cell	the published page

10 TRANSPORT

PARAMETER	VALUE	BASIS
Road	Five standard tractor-trailer loads	design study figure, the in-situ production study
Heavy lift	FMC-B, the moulding hall, carrying the press	the in-situ production study
Fittings	Standard ISO corner fittings; no out-of-gauge loads	the in-situ production study
Sea	One sailing on ordinary container service, or a single sealift lift	the in-situ production study
Air	Two to three heavy-airlift sorties for the full cell	design study figure, the in-situ production study
Tooling and initial consumables	~2 t, travelling separately under their own custody chain	design study figure, the in-situ production study
Load rule	Tooling never travels in the same load as the press	the in-situ production study

11 ENVIRONMENT

PARAMETER	VALUE	BASIS
Cold	Insulated containers with process air handling, a heated start-up cycle, dry-air blanketing of material paths, and a closed chiller loop with no open water	the in-situ production study
Heat and solar load	Heat rejection sized with margin, a shaded and ventilated resin store, and a canopy over the aisle	the in-situ production study
Dust and sand	Positive-pressure filtered process space, sealed material paths and ingress-rated enclosures	the in-situ production study
Humidity	Drying before every melt, whatever the climate	the in-situ production study
Grid instability	Conditioned power or an uninterruptible supply on control circuits; a shot in progress fails to scrap, never to hazard	the in-situ production study
Wind, flood and seismic	ISO corner-casting tie-downs, a raised and drained pad, and strain-relieved umbilicals	the in-situ production study

12 SAFETY FUNCTIONS

PARAMETER	VALUE	BASIS
Hot surfaces and melt	Guarding, interlocks and thermal protective equipment at the press	safety case, the in-situ production study
Clamp and crush	Two-hand controls, light curtains and guard interlocks at the press and the insertion press	safety case, the in-situ production study
Stored pneumatic energy	Certified vessels, hydrostatic test intervals, relief sizing, burst containment at the proof stand, and exclusion zones while charging	safety case, the in-situ production study
Proof firing	A backstop, an exclusion zone, interlocked firing and nobody downrange	safety case, the in-situ production study
Dust	Local extraction and filtered process air; glass-filled swarf handled as an industrial-hygiene item	safety case, the in-situ production study
Electrical	Lockout and tagout, and arc-rated procedures on the distribution	safety case, the in-situ production study
Chemical	Safety data sheets, ventilation and spill control for bonding consumables and chiller fluid	safety case, the in-situ production study

13 ACCOUNTABILITY AND TRANSFER

PARAMETER	VALUE	BASIS
Production ledger	Serializes every proven round and schedules calibration, consumables and die rotation	the published page
Reject path	A round that fails gauge, balance or lane goes back to the regrind bin	the published page
Licence	A per-round production licence on the design IP, accounted on every serial	the published page
International transfer	Government of Canada permits, issued per shipment	the published page
Enquiries	Screened before any discussion; export posture counsel-first	the published page

02 · THE IDEA

SHIP THE FACTORY. NOT THE ROUNDS.

A shipped round crosses an ocean on someone else's schedule. A cell crosses once, and every round after it is made on the host's own floor.

The Forward Manufacturing Cell moves the factory instead of the freight, and the host's own schedule replaces the shipping queue.

The article is fixed: the 1.6 kg, Ø90 mm Goose round, moulded, assembled and proved in the cell, and nothing else. It carries no warhead, no seeker and no fire control.

THE THESIS

THE SUPPLY LINE IS THE VULNERABILITY. THE FACTORY IS THE SHIELD.

The cell moves the magazine's source to the magazine's user, and keeps the judgment of the system at home.

03 · THE CELL

FOUR FORTY-FOOT CONTAINERS AND A TWENTY. ONE PAD, ONE ARTICLE.

The cell is containerized plant on a working pad, commissioned on the buyer's floor as one capital program.

MODULE	CONTAINER	WHAT IT HOLDS
FMC-A, feedstock and drying	40 ft high-cube	Sealed resin storage, a desiccant drying bank, loss-in-weight blending to the press, a moisture analyser bench
FMC-B, moulding hall	40 ft high-cube, side-opening	The injection press, 90–160 t clamp class, with its mould-temperature controller, chiller loop and trim bench
FMC-C, machining and assembly	40 ft high-cube	The CNC turning station for the nose slugs, fixtured assembly benches, fastener and adhesive stores
FMC-D, QC, proof and packout	40 ft high-cube	Conditioning, gauging, mass and centre of gravity, the proof station, serialization and packout
FMC-E, utilities and spares	20 ft	Shop-air compressor and receiver, electrical distribution, chiller heat rejection, spares and tool crib

CELL PARAMETER	FIGURE	BASIS
Working pad	~30 × 18 m	Design figure, the production package
All-up mass	~55 t	Design figure, the production package
Electrical service	~200 kVA	Design study figure
Crew	6–10 per shift	Design study range
Article	Goose CS-110, 1.6 kg, Ø90 mm	The only article the cell makes

CELL PARAMETER	FIGURE	BASIS
Training article	The same round in recycled PET	The same tooling

The four 40 ft modules stand in two facing pairs around a covered central aisle of ~6 m, with the utilities container at one end. Work flows one way, feedstock in at the A end and crated rounds out at the D end, so one look down the aisle reads the state of the line. The cell stands up as a single line of containerized stations, fixtures, press, proof station and ledger, and is proved on the buyer's floor before it makes a round.

04 · THE LINE

FEEDSTOCK, MOULD, ASSEMBLE.
PROVE, ACCOUNT.

Pellets arrive at the first station and a serialized round leaves the last, and every station is fixtured so the round comes out the same way on any crew.

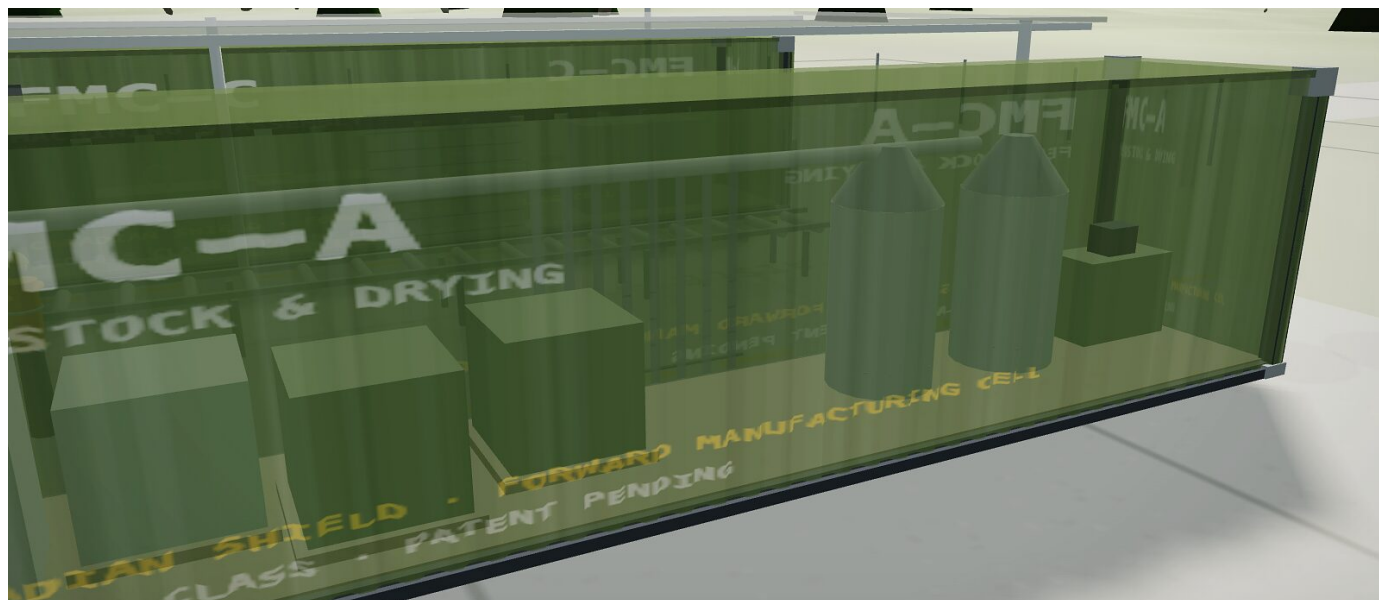
1. **Feedstock.** Qualified resin pellets for service rounds, and recycled PET for training rounds, dried in the cell.
2. **Mould.** An injection press in the 90–160 t clamp class shoots the body and fin shells on tooling cut in Canada; blow moulding forms hollow sections.
3. **Assemble.** Body, fins and the inert kinetic nose mass come together on fin-fit, nose-mass insertion and balance fixtures. The nose slugs are turned on a compact CNC centre.
4. **Prove.** Dimensional checks and mass and balance, then an indoor proof-fire lane driven by compressed shop air.
5. **Account.** A round that passes gets its serial on the production ledger; one that fails goes back to the regrind bin.

Skill lives in the tooling rather than in the operator. Fixtures locate, augers meter and the jig sets the torque, so a trained local crew runs the stations and the fixtures hold every round to the same article. No propellant is burned at any station, because no propellant exists in the process.

05 · FEEDSTOCK

CERTIFIED NYLON WHERE IT FLIES. RECYCLED PET WHERE IT TRAINS.

The material boundary is firm, and it travels with the cell as process doctrine.



Certified glass-filled nylon goes into load-bearing flight structure. Recycled PET goes into training and inert rounds only, parts where consistency does not decide whether something falls out of the sky. Of the full bottle-to-part chain, the cell carries only the back end: dry, mould and finish. Collection, sorting, shredding, washing and compounding stay with the host's own industry, because a wash line is regulated wastewater infrastructure and would bring an environmental permit into every deployment.

Feedstock is the sovereignty argument in material form. A stockpile that is imported can be embargoed or delayed; a feedstock stream the host already has cannot. The recycled content serves sovereignty and training, and never a part that carries structure.

In the cell.

- Drying
- Moulding on the cell's tooling
- Finishing and trim

With host industry.

- Collection and sorting
- Shredding and washing
- Compounding

06 · THE FENCE

THE CELL RUNS MOULDS. IT CANNOT CUT THEM.

The cell exports the low-tech, non-explosive part of the system and keeps the decisive layers in Canada, in any configuration and for any customer.

What travels with a cell.

- The moulding, assembly and proof equipment for the Goose CS-110 round.
- The tooling set: injection and blow moulds and trim dies, cut in Canada.
- The reusable shop-air launcher that proves the rounds.
- The process: fixtures, gauges, the proof lane and the production ledger.

What stays in Canada.

- Mould-making: no 5-axis machine, no EDM and no mould steel travel with a cell.
- Fire control: detect, track, classify and cue.
- Seeker, autonomy and guidance-electronics production.
- Anything with a warhead or a fuze, which the round does not have in any variant.

The cell runs moulds; it cannot cut, repair or duplicate them. Worn tooling returns to the home plant and is re-cut on the same machines that made it, which keeps the tooling art in Canada and makes the fence physical as well as contractual.

DOCTRINE

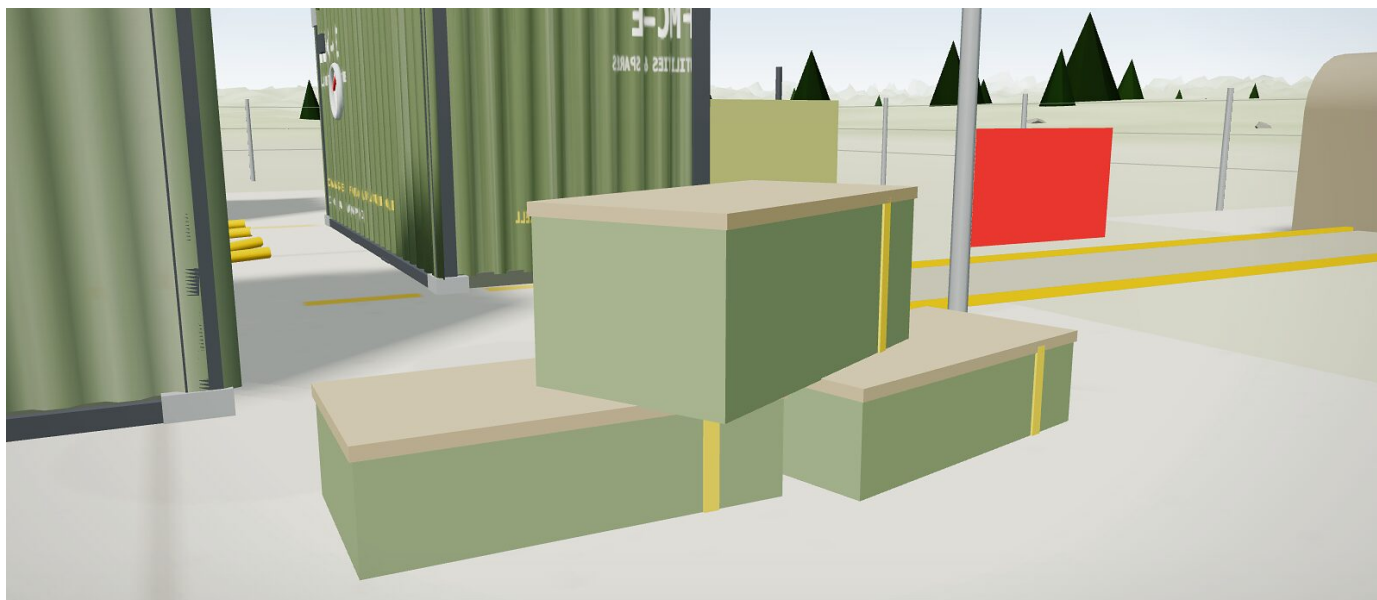
CARRIERS, NOT MUNITIONS.

The round the cell makes is an inert moulded carrier, and the judgment of the system, fire control, seekers and guidance, stays in Canada.

07 · ACCOUNTABILITY

EVERY ROUND LEAVES WITH A SERIAL. THE LEDGER IS THE LICENCE.

Every proven round is serialized against the cell's production ledger, and the same ledger schedules calibration, consumables and die rotation.



For the buyer, the ledger is sovereignty made auditable: they can show any inspector what was made, when, and from what. For Canada it is the licence made enforceable, because the per-round production licence on the design is accounted on every serial the cell proves. One book serves both flags.

- ✓ **A serial for every proven round.** Entered on the cell's production ledger.
- ✓ **A schedule in the same book.** Calibration, consumables and die rotation.
- ✓ **A licence accounted per round.** On the design IP, at every serial.
- ✓ **A book the host can open.** To its own inspectors and to its allies.

08 · SUSTAINMENT AND TRANSPORT

MOULDS ARE THE WEAR ITEM. THE CELL MOVES AS FIVE ORDINARY LOADS.

Dies and moulds wear by design, and Canada re-cuts them. The cell itself is sized to ordinary intermodal logistics.

A cell that is not re-tooled stops making rounds, so a host plans magazine depth against die life rather than against a shipping schedule. Worn tooling returns to the home plant for refresh, and the replacement is cut on machines Canadian Shield owns. Three wear clocks lead the maintenance plan: shot count on the moulds, hours and cycles on the press,

and regeneration cycles on the dryers. The host's technician keeps the line running; anything that touches tooling geometry, gauge masters or process configuration is the licenser's work.

The cell travels as five standard tractor-trailer loads on ISO corner fittings with no out-of-gauge load, as one sailing by sea, or in two to three heavy-airlift sorties. The moulding hall is the heavy lift, and tooling never travels in the same load as the press. Calibration, upgrades and process support run for the life of the cell.

THE CELL
COMMISSIONED ONCE

Containerized stations, fixtures, the press, the proof station and the ledger, stood up as one line on the buyer's floor.

THE TOOLING
RE-CUT IN CANADA

Moulds, cores and inserts in tool steel, wear items by design, re-cut on the machines that made them.

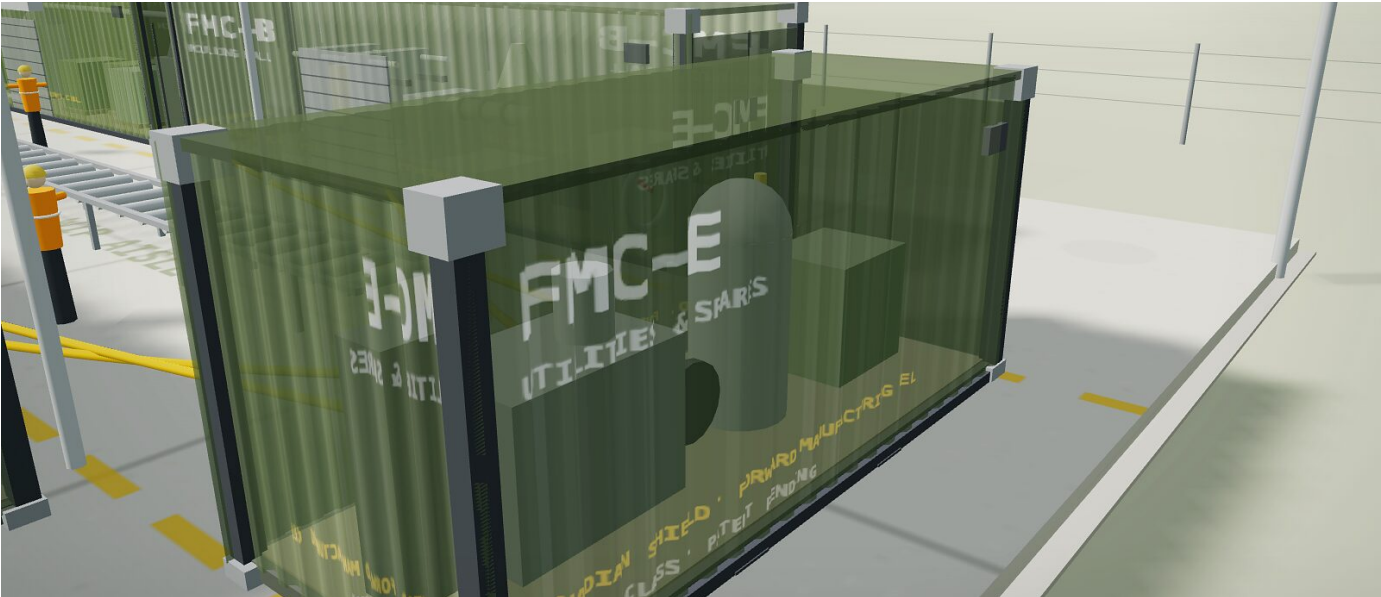
THE SUPPORT
FOR THE LIFE OF THE CELL

Calibration, upgrades and process support, and the next revision of the tooling.

09 · SITING AND UTILITIES

POWER, A PAD AND A FENCE.
THE SITING CONVERSATION IS INDUSTRIAL.

The cell asks its ground for electrical service, a level pad, water for its chiller, security and road access, and for nothing an explosives site would need.



THE HOST PROVIDES	ENVELOPE	BASIS
Electrical service	~200 kVA, peak ~250 kVA, grid or generator set	Design study figure
Pad	~30 × 18 m, level, drained and compacted	Design figure, the production package
Floor loading under the moulding hall	~2,900 kg/m ²	Design study figure
Water	A potable point and chiller top-up only	Process cooling is a closed loop
Compressed air	None; the utilities module makes its own	Self-generated

THE HOST PROVIDES	ENVELOPE	BASIS
Security	Perimeter, access control and a visitor regime	To the agreed standard
Road access	For 40 ft trailers	Five standard loads

Industrial edge-of-base siting suits the cell: road access for 40 ft trailers, grid or generator power and a securable perimeter. The process lives inside climate-controlled containers, so resin drying and nylon conditioning care about the inside rather than the outside, and the line itself runs offline, synchronizing its ledger in batches.

The proof station fires down an indoor proof-fire lane on a reusable ~30 bar shop-air launcher. Nothing in the round, the launcher or the building is energetic, so there are no explosives siting distances, no hazard-class storage and no magazine licence to plan for.

10 · CREW AND QUALITY

SIX TO TEN A SHIFT, CERTIFIED PER STATION. A LOCAL ROUND PROVES IT IS THE SAME ROUND.

The crew is the host's and the certification is Canada's. A round made abroad is accepted on evidence that it is the same article as a round made at home.

ROLE, PER SHIFT	COUNT	WORK
Cell lead and process technician	1	Runs the campaign to the licensed process and holds the ledger
Press and feedstock operators	1–2	Intake, drying, blending and the press
Machinist	1	Nose slugs and small-part finishing
Assembly technicians	2–3	The assembly and seal benches
QA technician	1	Inspection, proof, serialization and lot closure
Utilities and maintenance	1	The utilities module, planned maintenance and pressure-system checks

A trained local crew of six to ten a shift runs the line. Operators are certified per station against the licensed criteria; certification is revocable, re-verified at audit, and renewed annually and on every design revision. The crew learns to run the recipe, never to write it.

Acceptance is built the same way. Sealed reference rounds and gauge masters ship with the cell, and every gauge is calibrated against them. Before the production licence activates, the certified host crew builds a witnessed first-article campaign, measured in full, with a sample returned to Canada for comparative evaluation. Mass and centre of gravity are measured on every round, and a mould refresh, a resin source change, an equipment change, a certification lapse or a process-control violation each triggers re-qualification.

- ✓ A local crew, with the round held to the article by fixture rather than by hand
- ✓ Certification per station, held by the licensor for the life of the agreement
- ✓ Reference masters that outrank the line when the two disagree
- ✓ No first-article acceptance, no production licence

11 · WHO IT IS FOR

A NARROW BUYER. A NARROWER DEFINITION OF THE WORK.

A cell suits a particular buyer and a particular definition of the work, and both are named here.

Who it is for.

- A ministry's industrial-participation lead who has to place measurable content in-country.
- A program manager planning allied supply or counter-UAS magazine depth.
- An allied nation that wants its magazine's source on its own soil, from feedstock it collects.
- A host that can site containerized plant, run a shop-air system and train a local crew.
- A buyer whose government can hold the permits and whose auditors will read the ledger.

What it is not.

- Not a munitions plant: no warhead, no fuze and no energetic material at any point in the process.
- Not a transfer of fire control, seekers or guidance electronics.
- Not a tooling transfer: dies are cut in Canada and go home to be re-cut.
- Not a propellant line: the proof shot is compressed shop air.
- Not an offer, and not a route around a permit.

12 · DOCTRINE AND SAFETY

IT MAKES CARRIERS. NOTHING IN THE PROCESS BURNS.

The lines the cell holds in every configuration and for every customer.

- ✓ Carriers, not munitions: the cell makes inert moulded carriers, and no warhead, no fuze and no energetic material exists in the article or at any point in the process.
- ✓ Fire control, seekers and guidance electronics never travel with a cell, and the round it makes carries no battery, no motor and no onboard guidance electronics.
- ✓ No radio and no GPS aboard the fleet, with the one ruled exception: the two mine clearance configurations, KAOS-MC Land and KMM-01, carry GNSS and command links, and KMM-01 also carries a marine radar and AIS to see traffic and be seen. The round the cell moulds has nothing aboard to transmit or receive.
- ✓ Human safety comes first, on every line: the proof lane runs behind a backstop and an exclusion zone with nobody downrange, and nothing at the proof bench burns.
- ✓ A cell is controlled technology: international transfer requires Government of Canada permits issued per shipment, and the export posture is counsel-first.

THE CONVERSATION

TELL US THE CAPACITY YOU HAVE TO PLACE.
AND THE GROUND IT WOULD STAND ON.

A first conversation needs the capacity to be placed, the feedstock the host already collects, the site, and the audit the host's inspectors will want to run.

Start a screened enquiry at cdnshield.ca/enquiries.

DOCUMENT	CDN-PROD-SPC-018 · Forward Manufacturing Cell · Specification sheet
REVISION	R1.0 · issued 2026-09-10
WEB VERSION	cdnshield.ca/spec-sheets/forward-cell · carries the current revision
ISSUED BY	Canadian Shield · cdnshield.ca

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