

Our Challenge? **PREDICTABILITY**

Products



Standard and
Special Cutting Tools



Clamping Fixtures



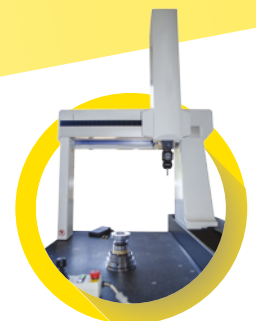
Special Machines



Automation



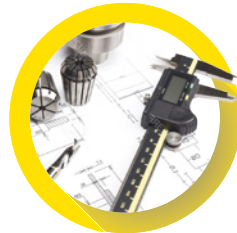
Tool Repair and Regrind



3D Measurement

For more than four decades, every day, our team has transformed your challenges into unique and differentiating solutions. We are a full-service tooling supplier, from development to manufacturing, assuring assistance and repair.

Services



CNC Programming

Tool Management

Application Engineering

Tests, Prototyping and Simulation

Our Focus? **YOU.**

Because each customer is unique, our technicians ensure the follow-up and optimization of the tools in your company, in order to increase tool life, reducing waste and minimizing costs.





Our Goal? **YOUR PRODUCTIVITY.**

FMT - Frezite Metal Tooling ensures the pick-up repair service with competitive prices. Investing in people training, the resharpener and repair services is performed by high specialized technicians, which allows to the company ensure an efficient technical support to the customers.



| SERVICE | Standard Weeks (working days) | |
|--|-------------------------------|------------------------|
| | New Tool | Recurrent Tool |
| PCD / CBN – Replacing cutters and/or resharpening HARD METAL – Resharpening and coating | | |
| Special PCD Brazed | 3 (15 Working Days) | 2 (10 Working Days) |
| Special PCD Brazed Guide pads | 4 (20 Working Days) | 3 (15 Working Days) |
| Special PCD Cartridges/Inserts | 4 (20 Working Days) | 3 (15 Working Days) |
| Special Hard Metal | 2,6 (13 Working Days) | 2 (10 Working Days) |
| Quick Hard Metal | 1 (5 Working Days) | |

Notes:

Deliveries considered without coating, outsourcing or thermal treatments.

If the service needs for body milling or turning, should be considered as a new tool.



Our Passion? **AGILITY.**

FMT has a tool collection service, which simplifies the management of shipments, making the process more convenient for the customer. With the latest technology and logistics team, we ensure that your orders are ready within the agreed delivery times.





Pick-up service of tools in the customer's facilities to sharpening.



FMT Customer



Delivery of the sharpened tools.



Our Guarantee? **QUALITY.**

Supported by the latest-generation equipment and methods, FMT ensures an efficient resharpening and repair service for special tools in hard metal and PCD. The competitiveness, proximity service and assistance, provided by highly qualified technicians are distinctive of our performance.



Hard Metal

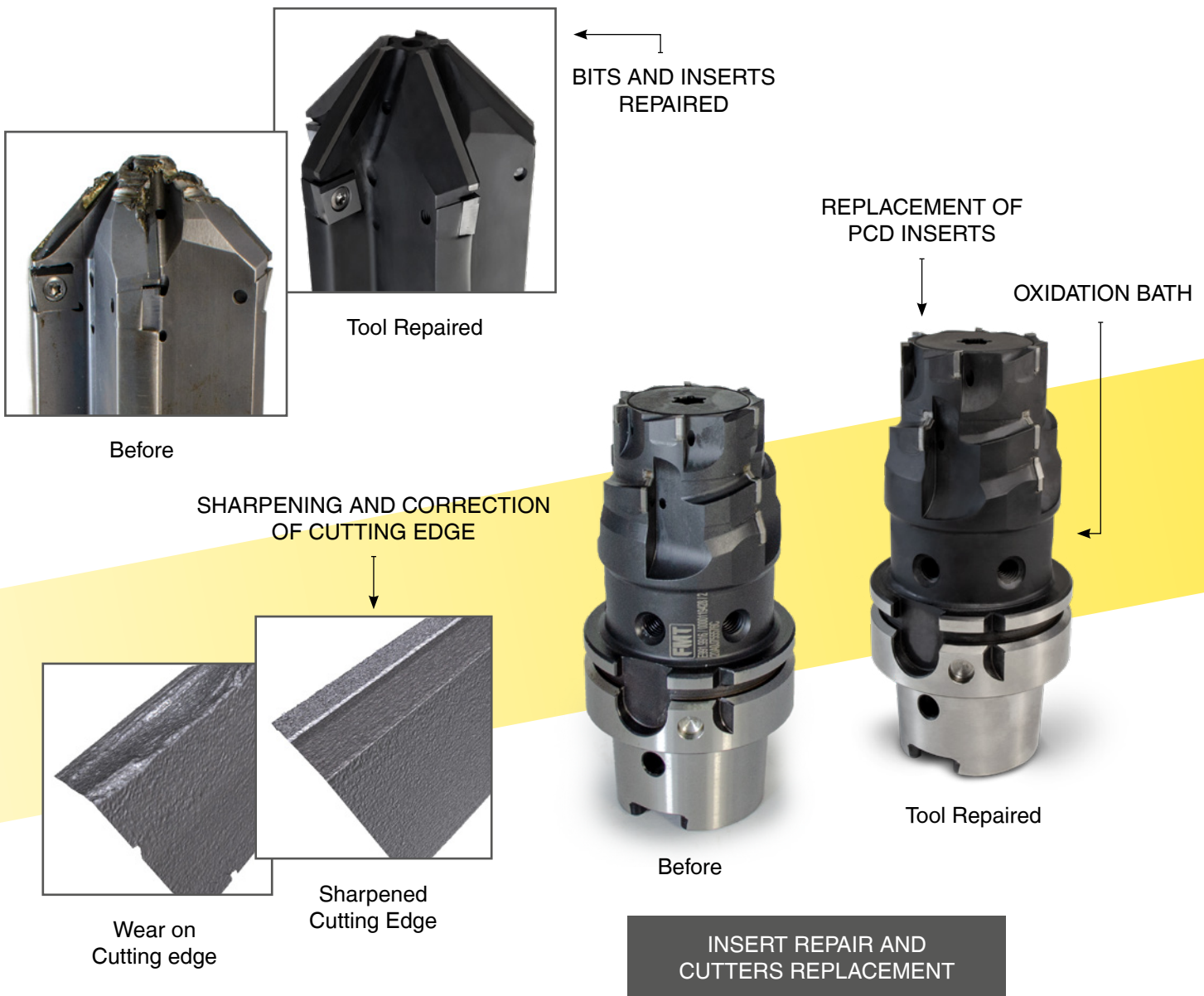
We assure:

- ✓ **The geometric tolerances of the tool.**
- ✓ **Measurement reports** (when requested).
- ✓ **New packaging and/or engravings** (when requested).
- ✓ **Cutters replacement** (Hard Metal or PCD).
- ✓ **Tool transformation** (when requested).

PCD

Tools Repair. LIKE NEW, AGAIN.

The tools rebuild, particularly those involving the replacement of cutters in PCD or hard metal, are another advantage of working with FMT. Whenever is necessary, we balance our tools or those produced by others manufacturers. In this way, the customer renews his product, with quality guarantee, avoiding the costs of buying a new tool.



✓ The repair restores the tool ensuring its original tolerances.



COMPLETE ALIGNMENT AND REPAIR OF THE TOOL IN HARD METAL WITH PCD AND STEEL

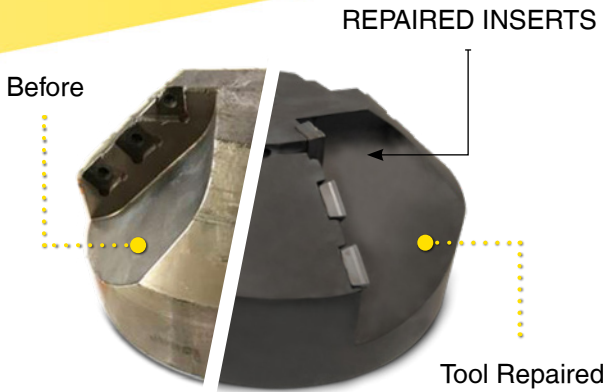
More than Tools, AN UNIQUE SERVICE.

FMT invests in constant control at each stage of the process, in continuous training of its employees, and in high-tech equipments, assuring our customers a complete service, from standard to special, applying the high quality standards that the market recognizes to the brand.





REPAIRED INSERTS AND CUTTERS REPLACEMENT



MECHANICAL CLAMPING TOOL


Why can't this tool BE RECONDITIONED?

Whenever the tool is excessively damaged and doesn't allow its maximum efficiency, FMT notifies the customer about the reason for the refusal and provides a sales technician to help the customer to choose a new tool, in hard metal or PCD..











GOODS RETURNED FORMS
CRITERIA TO REJECT A RECONDITIONING SERVICE

Goods being returned
Criteria to reject reconditioning services



FMT
Frezite Metal Tooling

Why can't this tool be reconditioned?

| | | | | | | | | | |
|--|--|---|---|-----------------|-------------------|---------------------------|-------------|--------------|--|
| <p>Flute is damaged</p> <input type="checkbox"/>  Reference: No. of tools: | <p>Max number of regrinding exceeded</p> <input type="checkbox"/>  Reference: No. of tools: | <p>Damaged in the top</p> <input type="checkbox"/>  Reference: No. of tools: | <p>Flute length already in minimum</p> <input type="checkbox"/>  Reference: No. of tools: | | | | | | |
| <p>Diameter out of specifications</p> <input type="checkbox"/>  Reference: No. of tools: | <p>Lubrication holes obstructed</p> <input type="checkbox"/>  Reference: No. of tools: | <p>Clamping system out of specifications</p> <input type="checkbox"/>  Reference: No. of tools: | <p>Eccentric tool (Runout)</p> <input type="checkbox"/>  Reference: No. of tools: | | | | | | |
| <p>Other</p> <input type="checkbox"/> Reference: No. of tools: | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Customer</td> <td style="width: 50%;">Request/PO</td> </tr> <tr> <td>Order Confirmation</td> <td>Date</td> </tr> <tr> <td colspan="2">Notes</td> </tr> </table> | | | Customer | Request/PO | Order Confirmation | Date | Notes | |
| Customer | Request/PO | | | | | | | | |
| Order Confirmation | Date | | | | | | | | |
| Notes | | | | | | | | | |

FREZITE - Ferramentas de Corta, SA
 Rua 80 S/Nº, 201 - Apartado 134
 4795-903 Tróia - PORTUGAL
 +351 252 400 360
 info@ferramentasde Corta.com


(Responsible)

Please contact your technical salesman

FREZITE Group








www.fmttooling.com

Goods being returned
Criteria to reject reconditioning services



FMT
Frezite Metal Tooling

Why can't this tool be reconditioned?

| | | | | | | | | | |
|--|--|---|---|-----------------|-------------------|---------------------------|-------------|--------------|--|
| <p>Cracked tool</p> <input type="checkbox"/>  Reference: No. of tools: | <p>To breakage</p> <input type="checkbox"/>  Reference: No. of tools: | <p>Damaged shank</p> <input type="checkbox"/>  Reference: No. of tools: | <p>Damaged pockets</p> <input type="checkbox"/>  Reference: No. of tools: | | | | | | |
| <p>Lubrication holes obstructed</p> <input type="checkbox"/>  Reference: No. of tools: | <p>Clamping system out of specifications</p> <input type="checkbox"/>  Reference: No. of tools: | <p>Damaged accessories</p> <input type="checkbox"/>  Reference: No. of tools: | <p>Damaged thread</p> <input type="checkbox"/>  Reference: No. of tools: | | | | | | |
| <p>Other</p> <input type="checkbox"/> Reference: No. of tools: | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Customer</td> <td style="width: 50%;">Request/PO</td> </tr> <tr> <td>Order Confirmation</td> <td>Date</td> </tr> <tr> <td colspan="2">Notes</td> </tr> </table> | | | Customer | Request/PO | Order Confirmation | Date | Notes | |
| Customer | Request/PO | | | | | | | | |
| Order Confirmation | Date | | | | | | | | |
| Notes | | | | | | | | | |

FREZITE - Ferramentas de Corta, SA
 Rua 80 S/Nº, 201 - Apartado 134
 4795-903 Tróia - PORTUGAL
 +351 252 400 360
 info@ferramentasde Corta.com

(Responsible)

Please contact your technical salesman

FREZITE Group

www.fmttooling.com

Service Concept

Manage. Control. Predict. Achieve.

**Service Strategy
& Tactics**

**Process & Workflow
Transparency Software**

Manage.

With the software and vending machines extend the ability to take decisions and action in different places and 24h / 7 days a week. Implement best practices with results in mind.

Control.

Take the assurance of actions with total transparency of the activities through reporting and process control. Easy user configuration and workplace

Predict.

Anticipate what has to be done avoiding problems with your tooling in advance. One step ahead action is easy to undertake when you access all valuable data.

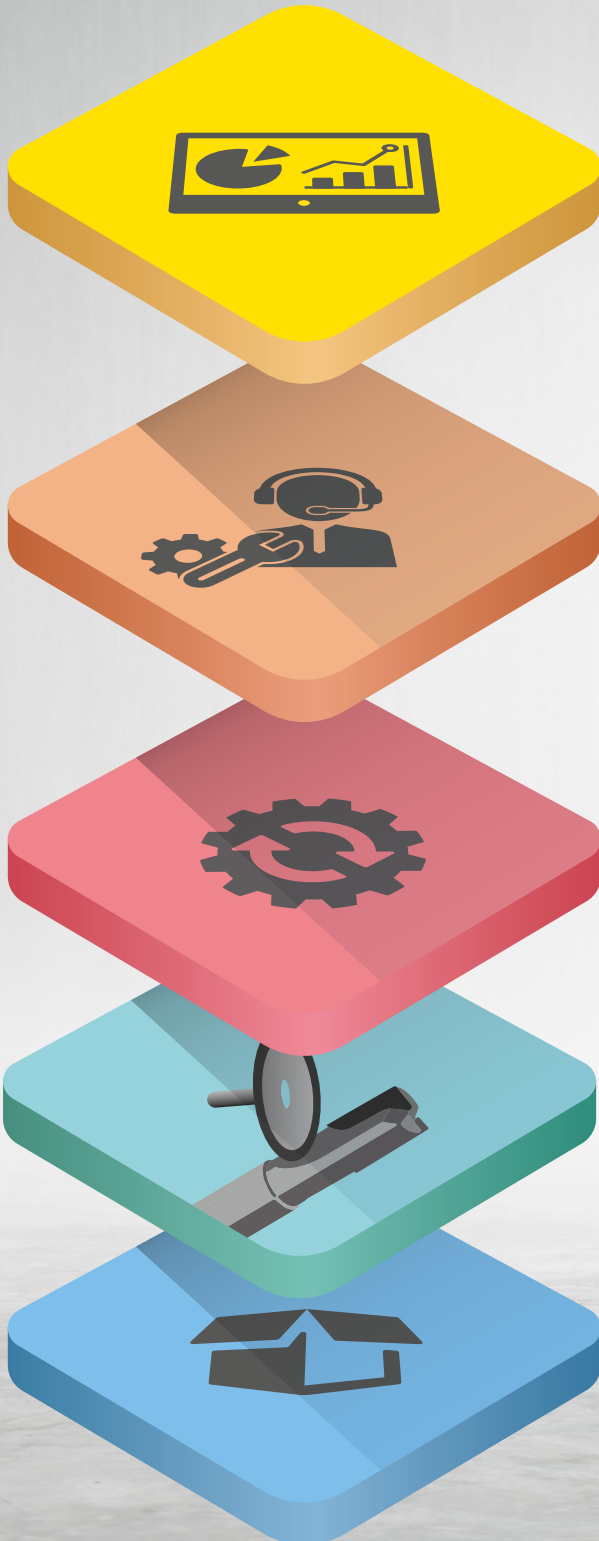
Achieve.

With FREZITE Tool Management you minimize the chances of not getting to the results you expect.

Physical control with Vending Machines



Tool Management Types



Type 5

- Cost Per Piece Agreement
- Tool Care
- Tools Preparation & Setup
- Purchasing Integration
- Optimization and Applications Engineering
- Full Customer Support

Type 4

- Cost Per Use Agreement
- Tool Care
- Tools Preparation & Setup
- Purchasing Integration
- Optimization and Applications Engineering
- Full Customer Support

Type 3

- Automatic Control Systems
- Integration of Vending Machines

Type 2

- Repair and Resharp Service

Type 1

- Purchasing
- Logistics
- Warehouse
- Consignment Stock



Type 4 & 5 Workflow cycle

Tool Management: types 4 and 5.

Serial Production



ion Manufacturing



2 Tool presetter and measuring machine



Outbound



5 Tool Reconditioning

Resharpener Process



Scrap Disposal



Software Connections to V

Standard

- Stand Alone.
- Vending Machine Individually Connected.
- Standard Software.
- Extra Software Modules at choice.



Professional

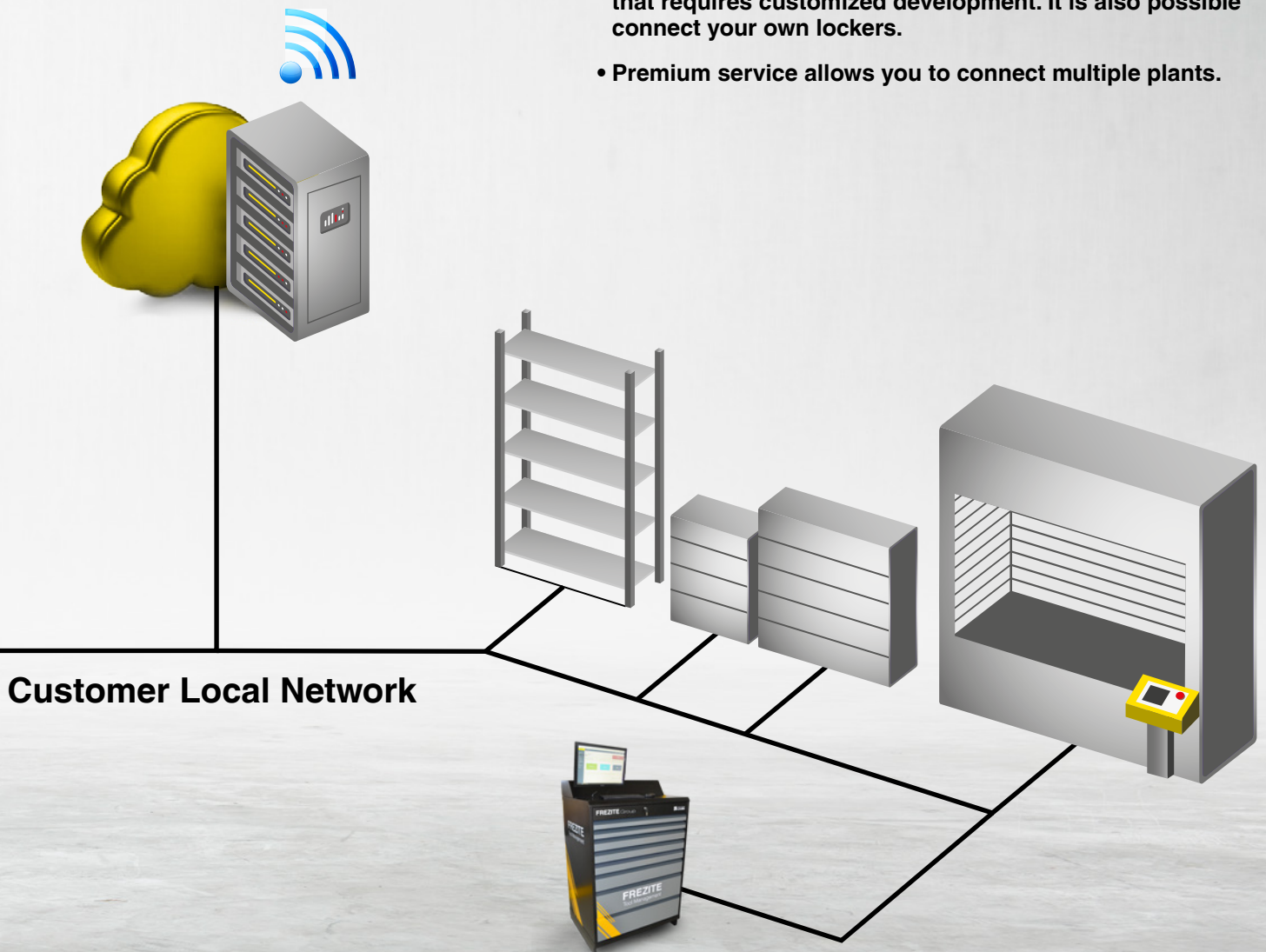
- Vending Machines Connected to a Local Network.
- Customer Vending Machines Network.
- Professional Software.
- Extra Software Modules at choice.



Lending Machines & Server

Premium

- Premium service offer you all specifications plus all extras that requires customized development. It is also possible connect your own lockers.
- Premium service allows you to connect multiple plants.



Software Features

SERVICE TYPES

PREMIUM

Customized management of the tooling area.

PROFESSIONAL

Automatic and network management of the tooling area.

STANDARD

Automatic storage of the tools.

Operations Management



Client Factory Operations

- Mapping of the Production Process Steps
- Assigning of Product List per Step
- Assigning of Vending Cabinet per Step(s)
- Assigning of Hierarchical Management Client Staff
- Assigning of Client Cost Centers

Vending Operations

- Wizard Interface linked to the Factory Operations
 - Check-out of Products
 - Check-in of Products
 - Refill of Compartments
 - Linked Check-out/Check-in Vending Products
 - Maximum Check-out rules
 - Mapped location of Vending Cabinets
 - Alternative location suggestion on unavailable
- Optional Checklists
 - Mandatory Fields
 - Optional Fields
 - Store Wizard Step Information
- Product Life Time Tracking
 - Usage Information Tracked
 - Linking to Factory Operation
 - Checked in Product Status (through Checklist)

Workbench

- Product Evaluation
- Product Status Sorting
- Multiple Sub-Divisions

Refill Preparation

- Predetermined Stock Levels
- Vending Machine Live status
- Product Storage Locations
- Tablet Interface

Stock Management



| |
|--|
| Storage Units |
| <ul style="list-style-type: none"> • Vending Storage • Local Storage • Remote Storage • Client Storage • Transport Storage • Refill Trolley • Waste Storage |
| Products |
| <ul style="list-style-type: none"> • Reference Products <ul style="list-style-type: none"> Components Consumables Composite Products • Physical Products <ul style="list-style-type: none"> Individual Components Individual Consumables Grouped Consumables Individual Composite Products <ul style="list-style-type: none"> – Usage information replicated to Constituent Parts Complete / Incomplete Status |
| Stock Tracking |
| <ul style="list-style-type: none"> • Vending Purchase • Automatic Alerts <ul style="list-style-type: none"> Vending Minimum Stock Local Minimum Stock • Between Local and Remote Storages • Between Provider and Client • Vending Preparation • Transfer to Waste • Transfer for Repair • Transfer for Sharpening |
| Product Management |
| <ul style="list-style-type: none"> • Product Creation • Product Assembly • Product Request Order • Product Transferal • ERP Connectivity |

Users Management



| |
|--|
| User Types |
| <ul style="list-style-type: none"> • Credentials User • RFID Card User • Credentials + RFID Card Use • No Credentials User |
| User Profiles |
| <ul style="list-style-type: none"> • Administrator • Provider Manage • Provider Operator • Client Manager • Client Operator • Client Viewer |
| Organization |
| <ul style="list-style-type: none"> • Provider Organization • Client Organization • Possibility for Other Organizations • Organization Locations <ul style="list-style-type: none"> Location Information Custom Up-loadable Maps |

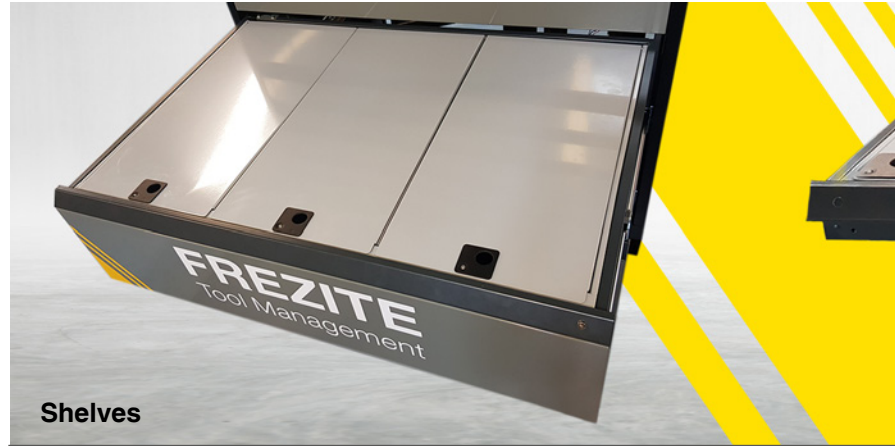
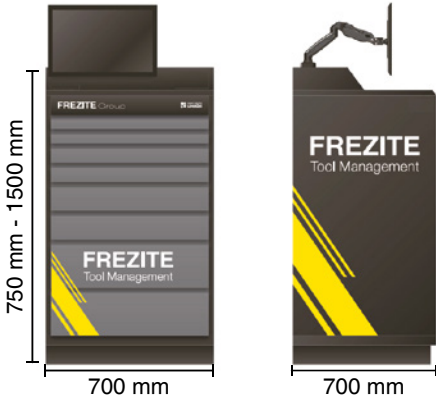
Reports



| |
|--|
| Reporting Services Reports |
| <ul style="list-style-type: none"> • Self-Hosted in this Application • Hosted in Reporting Services Server |
| Customizable Reports |

| |
|---|
| PREMIUM |
| <ul style="list-style-type: none"> • Connections to ERP • Customizable Reports • Multiple Sites <ul style="list-style-type: none"> Multi Customer Multi Location • Logistics |

Vending Ca



Cabinet

700 x 700

| Height (with drawers) | Order Number |
|-----------------------|--------------|
| 750 | 9992.0082 |
| 800 | 9992.0083 |
| 850 | 9992.0084 |
| 900 | 9992.0085 |
| 950 | 9992.0086 |
| 1000 | 9992.0087 |
| 1050 | 9992.0088 |
| 1100 | 9992.0089 |
| 1150 | 9992.0090 |
| 1200 | 9992.0091 |
| 1250 | 9992.0092 |
| 1300 | 9992.0093 |
| 1350 | 9992.0094 |
| 1400 | 9992.0095 |
| 1450 | 9992.0096 |
| 1500 | 9992.0097 |



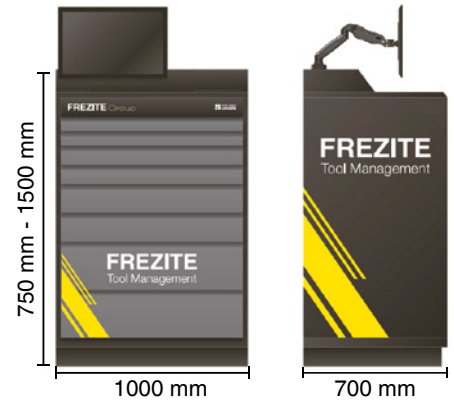
> MADE YOUR WAY

Our vending machines is a flexible system that allows you customize the locker under your request.

Contact FREZITE for our cabinet chooses.

| Height | Rows | Columns | Compartments | Order Number |
|------------------------|------|---------|--------------|--------------|
| 700 X 700 x 75 | | | | |
| 75 | 6 | 9 | 54 | 9992.0050 |
| 75 | 6 | 8 | 48 | 9992.0051 |
| 75 | 6 | 7 | 42 | 9992.0052 |
| 75 | 6 | 6 | 36 | 9992.0053 |
| 75 | 4 | 9 | 36 | 9992.0054 |
| 75 | 6 | 4 | 24 | 9992.0055 |
| 75 | 6 | 3 | 18 | 9992.0056 |
| 75 | 2 | 9 | 18 | 9992.0057 |
| 75 | 4 | 4 | 16 | 9992.0058 |
| 75 | 6 | 2 | 12 | 9992.0059 |
| 75 | 2 | 4 | 8 | 9992.0060 |
| 75 | 1 | 6 | 6 | 9992.0061 |
| 75 | 1 | 1 | - | 9992.0062 |
| 700 X 700 x 100 | | | | |
| 100 | 6 | 6 | 36 | 9992.0063 |
| 100 | 6 | 4 | 24 | 9992.0064 |
| 100 | 6 | 3 | 18 | 9992.0065 |
| 100 | 4 | 4 | 16 | 9992.0066 |
| 100 | 6 | 2 | 12 | 9992.0067 |
| 100 | 2 | 4 | 8 | 9992.0068 |
| 100 | 1 | 4 | 4 | 9992.0069 |
| 100 | 1 | 1 | - | 9992.0070 |
| 700 X 700 x 150 | | | | |
| 150 | 4 | 4 | 16 | 9992.0071 |
| 150 | 2 | 4 | 8 | 9992.0072 |
| 150 | 2 | 2 | 4 | 9992.0073 |
| 150 | 1 | 4 | 4 | 9992.0074 |
| 150 | 1 | 2 | 2 | 9992.0075 |
| 150 | 1 | 1 | - | 9992.0076 |
| 700 X 700 x 250 | | | | |
| 250 | 2 | 4 | 8 | 9992.0077 |
| 250 | 2 | 2 | 4 | 9992.0078 |
| 250 | 1 | 4 | 4 | 9992.0079 |
| 250 | 1 | 2 | 2 | 9992.0080 |
| 250 | 1 | 1 | - | 9992.0081 |

Cabinet Sizes



| Height | Rows | Columns | Compartments | Order Number |
|-------------------------|------|---------|--------------|--------------|
| 1000 X 700 x 75 | | | | |
| 75 | 9 | 9 | 81 | 9992.0031 |
| 75 | 9 | 8 | 72 | 9992.0032 |
| 75 | 9 | 7 | 63 | 9992.0033 |
| 75 | 9 | 6 | 54 | 9992.0034 |
| 75 | 6 | 9 | 54 | 9992.0035 |
| 75 | 9 | 4 | 36 | 9992.0036 |
| 75 | 9 | 3 | 27 | 9992.0037 |
| 75 | 3 | 9 | 27 | 9992.0017 |
| 75 | 6 | 4 | 24 | 9992.0038 |
| 75 | 9 | 2 | 18 | 9992.0039 |
| 75 | 3 | 4 | 12 | 9992.0040 |
| 75 | 1 | 1 | Vazio | 9992.0003 |
| 1000 X 700 x 100 | | | | |
| 100 | 9 | 6 | 54 | 9992.0041 |
| 100 | 9 | 4 | 36 | 9992.0042 |
| 100 | 4 | 9 | 36 | 9992.0012 |
| 100 | 9 | 3 | 27 | 9992.0021 |
| 100 | 3 | 9 | 27 | 9992.0043 |
| 100 | 6 | 3 | 18 | 9992.0044 |
| 100 | 3 | 4 | 12 | 9992.0013 |
| 100 | 1 | 1 | - | 9992.0005 |
| 1000 X 700 x 150 | | | | |
| 150 | 6 | 4 | 24 | 9992.0045 |
| 150 | 3 | 4 | 12 | 9992.0022 |
| 150 | 3 | 2 | 6 | 9992.0014 |
| 150 | 1 | 4 | 4 | 9992.0046 |
| 150 | 1 | 2 | 2 | 9992.0047 |
| 150 | 1 | 1 | - | 9992.0004 |
| 1000 X 700 x 250 | | | | |
| 250 | 3 | 4 | 12 | 9992.0023 |
| 250 | 3 | 2 | 6 | 9992.0026 |
| 250 | 1 | 4 | 4 | 9992.0048 |
| 250 | 1 | 3 | 3 | 9992.0015 |
| 250 | 1 | 2 | 2 | 9992.0049 |
| 250 | 1 | 1 | - | 9992.0016 |

Cabinet 1000 x 700
















| Drawer Height | Order Number |
|-------------------|--------------|
| 1000 x 700 | |
| 750 | 9992.0098 |
| 800 | 9992.0099 |
| 850 | 9992.0100 |
| 900 | 9992.0101 |
| 950 | 9992.0102 |
| 1000 | 9992.0001 |
| 1050 | 9992.0103 |
| 1100 | 9992.0010 |
| 1150 | 9992.0104 |
| 1200 | 9992.0105 |
| 1250 | 9992.0106 |
| 1300 | 9992.0107 |
| 1350 | 9992.0108 |
| 1400 | 9992.0109 |
| 1450 | 9992.0110 |
| 1500 | 9992.0111 |

| Top | PC & Screen |
|-----------|-------------|
| 9992.0112 | 9992.0011 |
| 9992.0113 | 9992.0117 |
| 9992.0114 | |
| 9992.0115 | |
| 9992.0024 | |
| 9992.0020 | |
| 9992.0002 | |
| 9992.0116 | |

COATING TYPES

Check in the table below the coating types that FMT can provide you.

| Coating Ref. | Material | Coating Thickness (µm) | Overthickness Ø to be consider in DP (µm) | Hardness (Gpa HV 0,05) | Coef |
|--------------|---------------|------------------------|---|--------------------------|------|
| REV1 | W C/C | 3±1 | 4 | 12-15 1400 | |
| REV2 | TiAlN | 5±2 | 8 | 33±3 3300 | |
| REV3 | AlCrN | 4±2 | 6 | 36±3 3700 | |
| REV4 | A-C:H | 3±1 | 6 | 15-25 2200 | |
| REV5 | AlTiN | 5±2 | 10 | 35±3 3500 | |
| REV6 | C | 6 | 12 | 80-100 10000 | |
| REV7 | TiAlN / TiSiN | 3±1 | 6 | 3800 | |
| REV8 | TiAlN | 4±1.3 | 8 | 3500 | |
| REV9 | AlTiN | 3±1 | 6 | 3700 | |
| REV10 | TiAlN | 3±1 | 4 | 3500 | |
| REV11 | TiAlN+C | 3±1 | 4 | 3300 | |
| REV12 | TiN | 3±1 | 4 | 2300 | |
| REV13 | C | 9±1 | 16 | 10000 | |
| REV14 | C | 7±1 | 12 | 10000 | |
| REV15 | C | 9±1 | 16 | 10000 | |

| Coefficient of Friction | Process T. ReV. (C°) | Work T. Max. (C°) | Coating Technology | Colour |
|-------------------------|----------------------|-------------------|--------------------|---|
| 0.1 to 0.2 | < 250 | 300 | PVD Sputtering |  |
| 0.30 to 0.35 | 480 | 900 | PVD Sputtering |  |
| 0.35 | < 500 | 1100 | PVD Sputtering |  |
| 0.1 to 0.2 | 250 | 300 | PVD Sputtering |  |
| 0.35 | < 500 | 1000 | PVD Sputtering |  |
| | < 900 | 600 | CVD diamond |  |
| | | 1000 | PVD Sputtering |  |
| | | 1000 | PVD Sputtering |  |
| 0.3 to 0.5 | 450 | 1000 | PVD Sputtering |  |
| | | 1000 | PVD Sputtering |  |
| | | 900 | PVD Sputtering |  |
| | | 700 | CVD Diamond |  |
| | | 650 | CVD Diamond |  |
| | | 650 | CVD Diamond |  |
| | | 650 | CVD Diamond |  |



www.fmttooling.com