

2 small 2 see

Industrial Micromechanical Processes



We know to manage this part like her !

INTRODUCTION

2small2see is a Grupo Protefil company, with a eminently innovative and technological character, able to satisfy their customer demands in the Industrial Micromechanical Processes field, taking advantage from the more than 30 years experience of the Grupo Protefil companies.

2small2see has at the moment last generation machinery to produce plastic microparts and micromachined components, as well one of the best control systems in order to assure the quality products.

2small2see manufacture microparts with weights < 1 g (f.ex.: 0,001 g) with a very short cycle production time, all this in Clean Room conditions and for the most demanding industries:

- ◆ Automotive
 - ◆ Computer
 - ◆ Telecommunication
 - ◆ Connectors
 - ◆ Electronics
 - ◆ Micro-equipment
 - ◆ Medical technology
 - ◆ Sensors
 - ◆ Micromechanics
 - ◆ Optics
 - ◆ Watches
 - ◆ Glass fiber conductors
 - ◆ Microstructure
 - ◆ Precise suppliers
 - ◆ Special materials
- Micro switch, sensors, ABS-Systems.
 - Head of an ink-jet printer.
 - Mobile phone, MID.
 - Plug connectors, opto couplers.
 - Micro parts on circuit boards.
 - Valve technology.
 - Hearing aids, implants, biodegradable.
 - Airbag sensors, sensor disk.
 - Micro motors, rotors.
 - Lenses, displays.
 - Gear wheels, latches, micro transmissions.
 - Ferrules, connectors.
 - Lab on the Chip, data carrier.
 - Various parts.
 - PIM (MIM / CIM), PTFE.

Tel.: + 34 93 345 21 92
Fax: + 34 93 345 89 92
Email: info@2small2see.com
www.2small2see.com

A Grupo Protefil Company
Ciudad de Asunción, 46, 7th Floor
08030 - Barcelona
Spain



2 small 2 see

Industrial Micromechanical Processes

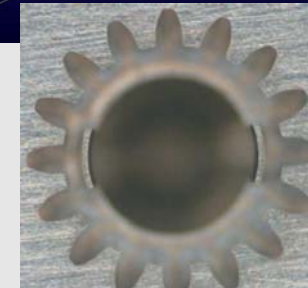
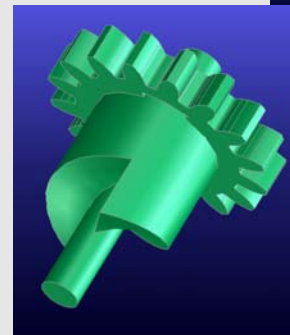
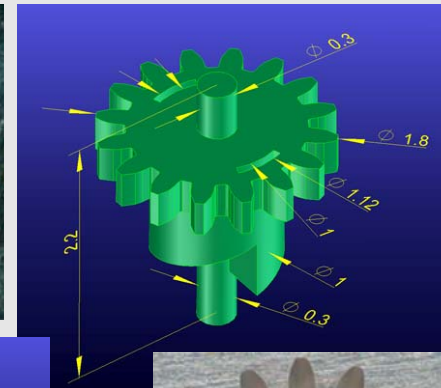
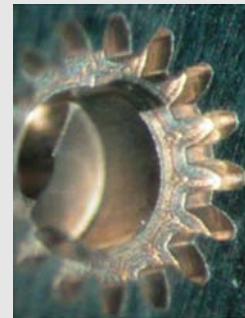


We know to manage this part like her !

PRODUCTS & SERVICES

Micromachining

2small2see can machining parts with the smallest details required by customers. The machinery station is a high range machinery, the company has the last generation machines for micro-milling, micro-grinder and micro-edm.



Tel.: + 34 93 345 21 92
Fax: + 34 93 345 89 92
Email: info@2small2see.com
www.2small2see.com

A Grupo Protefil Company
Ciudad de Asunción, 46, 7th Floor
08030 - Barcelona
Spain



2

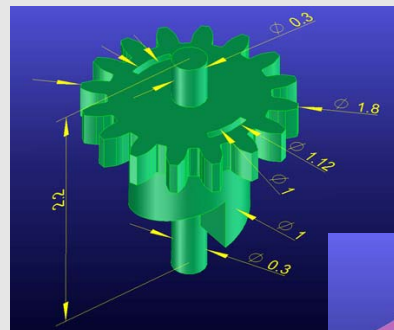
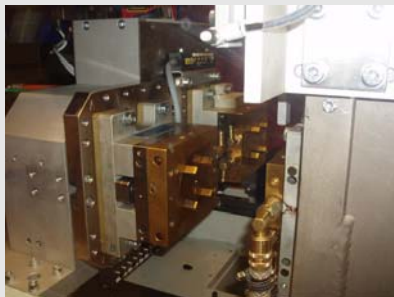


We know to manage this part like her !

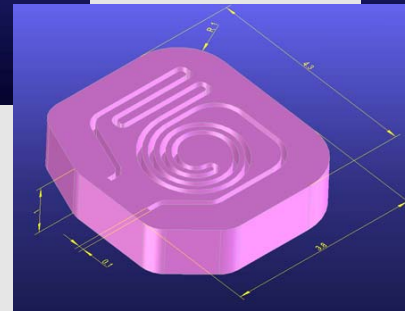
PRODUCTS & SERVICES

Microinjection

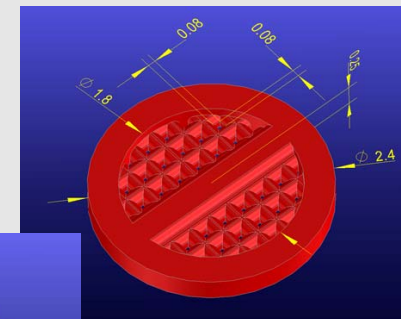
2small2see has the most modern machinery to inject parts with a low weight below 1 g and also with a short cycle production, 2 sec. achieved due to the rotary ejection machinery table.



Pinion for medical application
(Heart micro pump).
Weight of part: 0,002 g
Material: PEEK



Microfluidic part for pharma application.
Weight of part: 0,001 g
Material: POM



Filter for electronic and
telecommunication application.
Weight of part: 0,0004 g
Material: PP



2small2see, among other, the following services in the microinjection area :

- Clean-room module, all the production process is carried out in Clean-Room conditions until ISO class 100 in the working area (According to FED STD 209E).
- Four lighting cameras by high resolution lenses to check microparts quality, every micropart is checked by these cameras and it is measured according to their specifications.
- Handling module, parts deposit separated cavity by cavity, speed 2 m/sec.
- Micromould sensing in order to achieve the total microinjection control process.

The injection unit is prepared to inject the following plastic types:

STANDARD	PP PE PS	Polypropylene Polyethylene Polystyrene	OPTICAL	PC PMMA COC PSU SAN PETG	Polycarbonate Polymethylmethacrylate Cycloolefin Copolymere Polysulfone Styrene-Acrylnitril Polyethylene terephthalate
TECHNICAL	POM PA ABS PBT PPS LCP PEEK ETFE	Polyoxymethylene Polyamide Acrylnitril-Butadiene-Styrene Polybutyleneterephthalate Polyphenylensulfide Liquid Crystal Polymer Polyetheretherketone Ethylene / Tetrafluorethylene	POWDER	MIM CIM	Metal Injection Molding Ceramic Injection Molding
ELASTOMER	TPE TPU	Thermoplastic Elastomere Thermoplastic Urethane	MEDICAL	PDLL	Bio lactate

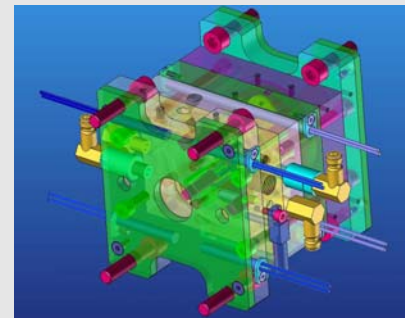
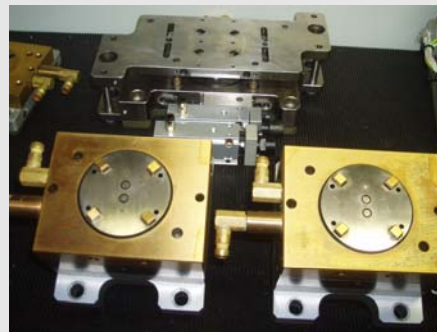
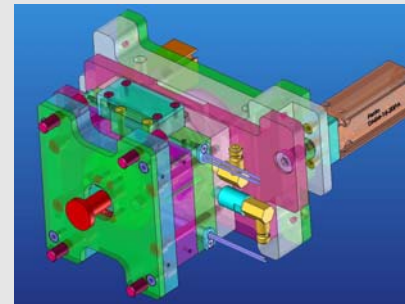
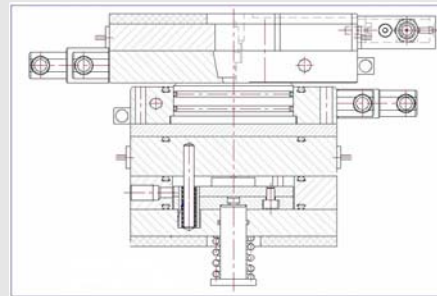


We know to manage this part like her !

PRODUCTS & SERVICES

Micromoulds Design

2small2see designs in the Technical Office the most productive micromoulds fitted to their injection machines, always taking advantage in accurate and easy to operate 2D and 3D CAD systems.



2 small **2** see

Industrial
Micromechanical
Processes



We know to manage this part
like her !

PRODUCTS & SERVICES

Micromoulds Manufacturing

For the micromoulds manufacturing, 2small2see has the support from the Grupo Protefil companies but the company also has a machinery station with the last generation machines in order to produce micromoulds with the micro-milling, micro-grinder and micro-edm technologies.

Becoming one of the few microtechnology companies in the world with the needed know-how to design, develop and manufacture their own micromoulds.



Tel.: + 34 93 345 21 92
Fax: + 34 93 345 89 92
Email: info@2small2see.com
www.2small2see.com

A Grupo Protefil Company
Ciudad de Asunción, 46, 7th Floor
08030 - Barcelona
Spain



2 small **2** see

**Industrial
Micromechanical
Processes**



We know to manage this part like her !

QUALITY

The injection molded microparts and also the manufactured microcomponents they include themselves very small details that don't let be controlled by conventional control systems.

For this reason the 2small2see Quality Department use optical and laser control systems, and although the microinjection machines they are equipped with optical control systems in order to get information regarding the microparts injection conditions and the injection parameters, the Quality Department guarantees the microinjected parts dimensional control.



Tel.: + 34 93 345 21 92
Fax: + 34 93 345 89 92
Email: info@2small2see.com
www.2small2see.com

A Grupo Protefil Company
Ciudad de Asunción, 46, 7th Floor
08030 - Barcelona
Spain



2 small 2 see

Industrial Micromechanical Processes



We know to manage this part like her !

HOW TO FIND US



 Ronda Litoral: Salida 30 Ronda de Dalt: Salida 1	 Metro: línea 1 (roja), con parada en Sant Andreu y Torras y Bages
 Bus: líneas 11, 12, 35, 40, 42, 62, 73, 96, 173, B20, B28, N8, N9.	 Renfe: Estación de cercanías de Sant Andreu Comtal



info@2small2see.com

Tel.: + 34 93 345 21 92
Fax: + 34 93 345 89 92
Email: info@2small2see.com
www.2small2see.com

A Grupo Protefil Company
Ciudad de Asunción, 46, 7th Floor
08030 - Barcelona
Spain

