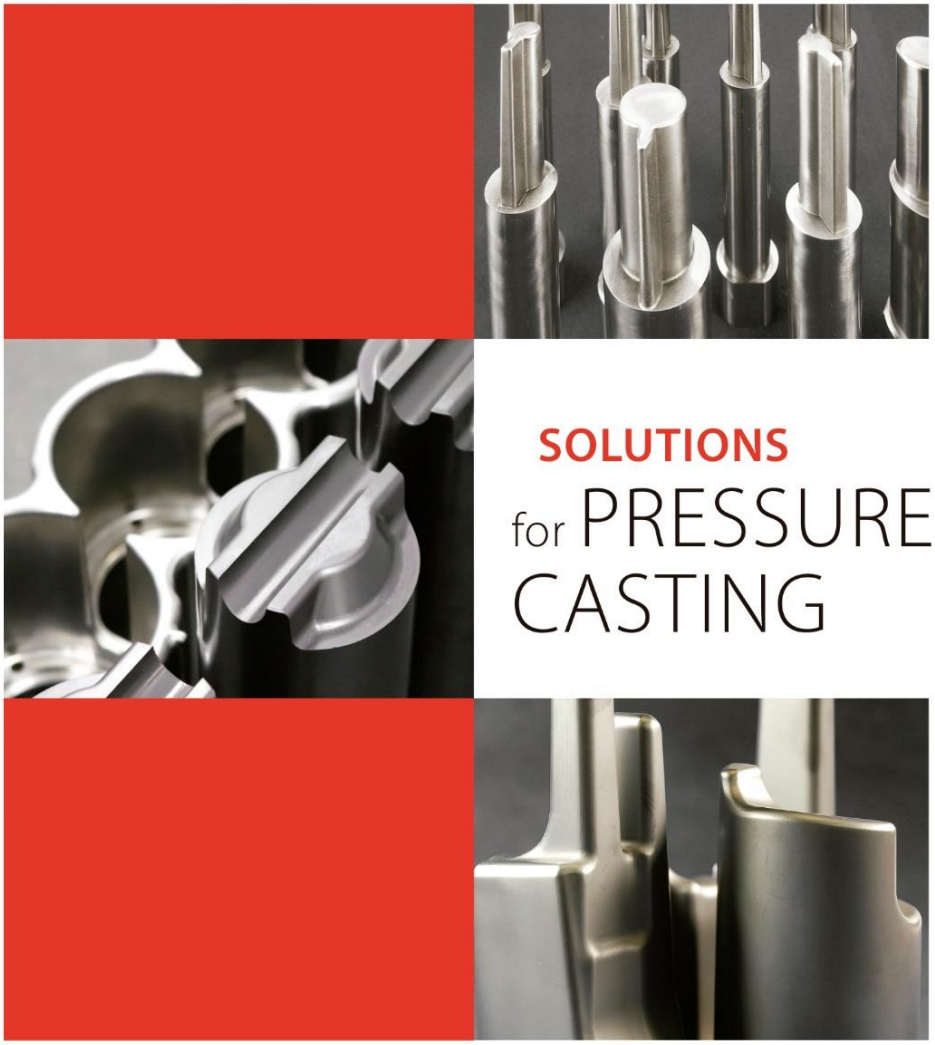


SOLUTIONS for PRESSURE DIE CASTING

carrasco

EFFICIENCY IN TOOL COMPONENTS

CARRASCO is a family Company with over 40 years' experience in the field of components for moulds and dies. We design, manufacture and market standard and special components for users and manufacturers of moulds and dies for:

- Non-ferrous die casting.
- Sheet metal stamping.
- Fine blanking.
- Plastic injection moulding.

with full traceability until the end of its useful life and providing customised services in order to offer the maximum value to our customers.

Traceability. CARRASCO's value proposal is based on the "Total Traceability", from the design of the component until the end of its operating life. Information and marking systems, especially developed for this purpose, allow customised identification of each component as well as traceability solutions adapted to our customers' needs and their improvement goals.

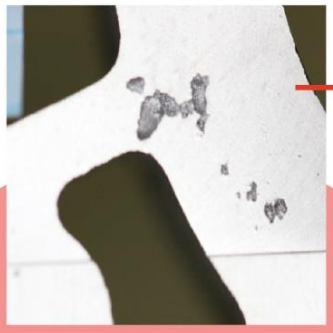
Our value proposal.

Customised solutions. We wish to be your partner. We provide you with advanced solutions and services so that you can reduce the complexity and cost associated with the purchase, procurement and use of your spare components for moulds and dies.

Quality. According to ISO 9001:2015 and ISO 14001:2015.

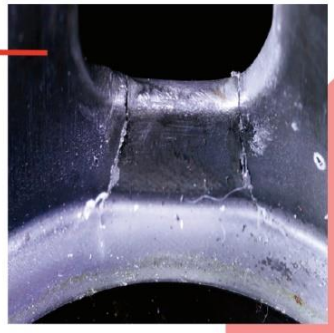
Continuous improvement. To achieve the best overall economy for our customers.

CUSTOMER NEEDS & OUR OFFER



Quality | casted component

Shrinkage porosity
Dimensional uniformity
Soldering
Entrapped air



Tool life

Soldering
Heat cheching
Erosion
Mechanical stress

NEEDS of continuous improvement

simplification
traceability
monitoring
controling
communication
stock_reduction
reactivity
procurement_stability
on_time
compliance_with_specifications

Service

Productivity

Spraying time - Cycle time
Die opening-Cycle time
Maintenance - Spare parts

Environment

Scrap
Leakages
Energy
Emissions

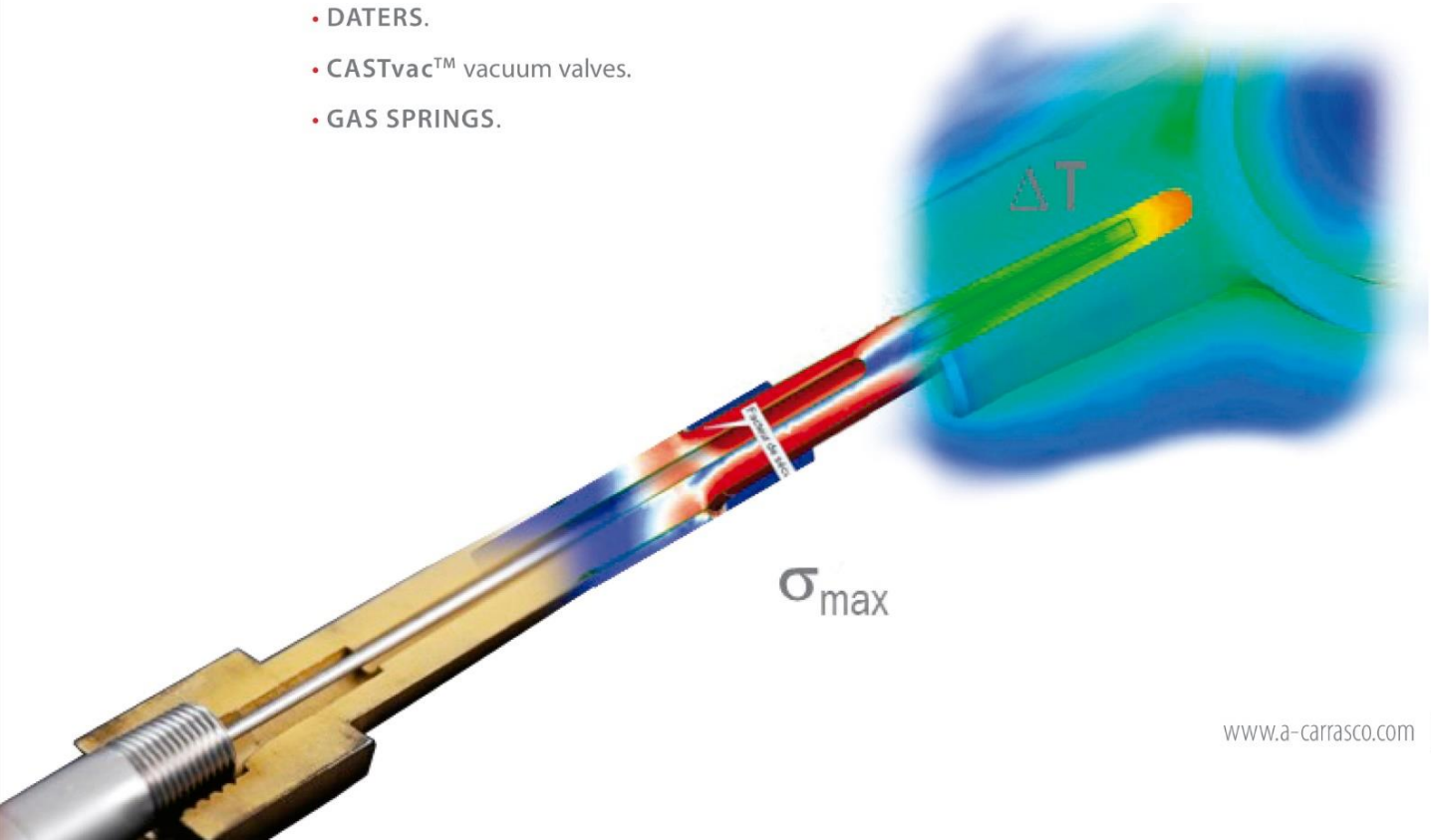
Carrasco, your partner in tool spare components

We design and manufacture standard and customised spare components for die casting.

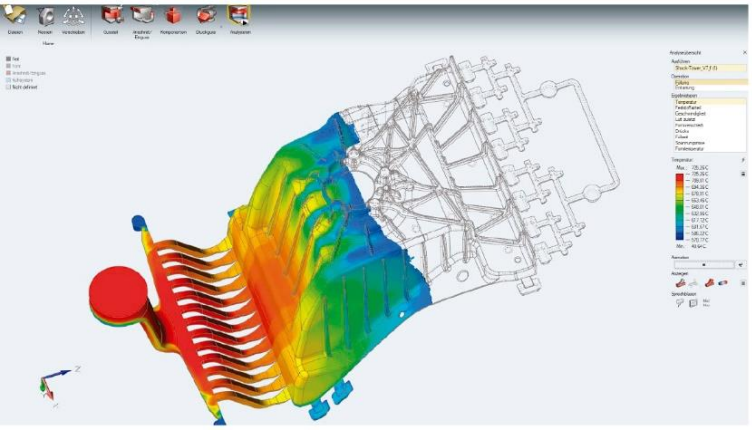
- **CORE PINS** and **HPPC –Jet Cooling– core pins.**
- **CAST COOLER** injectors.
- **EJECTOR PINS.**
- **INSERTS.**
- **WATER JACKETS** and **MANDREL INSERTS** for cylinder block casting.
- **DATERS.**
- **CASTvac™** vacuum valves.
- **GAS SPRINGS.**

And provide solutions related to its purchase, procurement and use.

- **TECHNICAL ADVICE** to achieve the best productivity progress.
- **CUSTOMISED STANDARDISATION** projects to reduce complexity and cost.
- Design and implementation of **HIGH-PRESSURE PULSATING COOLING (HPPC) SOLUTIONS.**



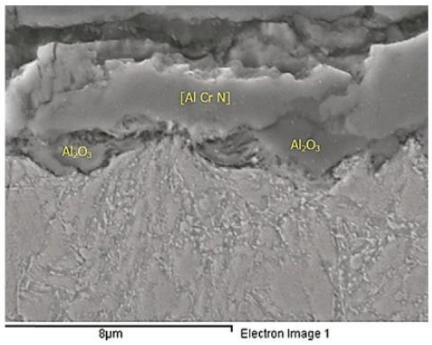
ADVANCED ENGINEERING SERVICES

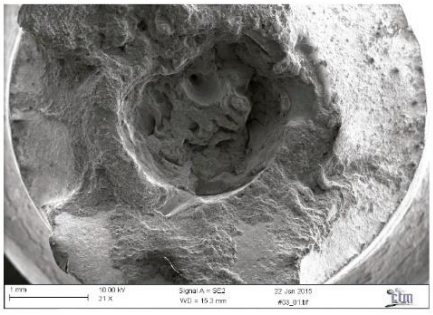


TECHINICAL ADVICE to achieve the best productivity progress

Our engineering department offers technical advice in order to achieve the best productivity progress affordable, in the following areas:

- Analysis of damages of components in use / at the end of its operating life.
- Tips for improvement in the design of components and selection of materials, treatments and coatings.
- Tips on the temperature management & cooling solutions.





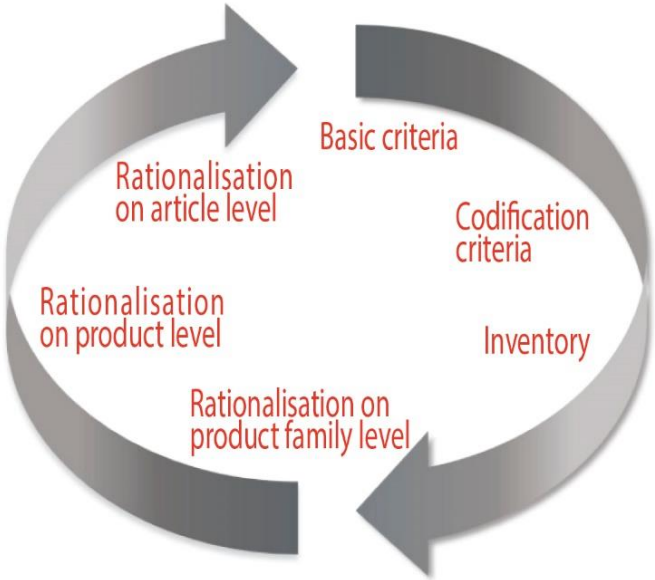
CUSTOMISED STANDARDISATION PROJECTS to reduce complexity and cost.

C A R R A S C O offers you its experience of having participated in international committees for standardisation in order to reduce the complexity and cost associated with the purchase, procurement and use of your spare components.

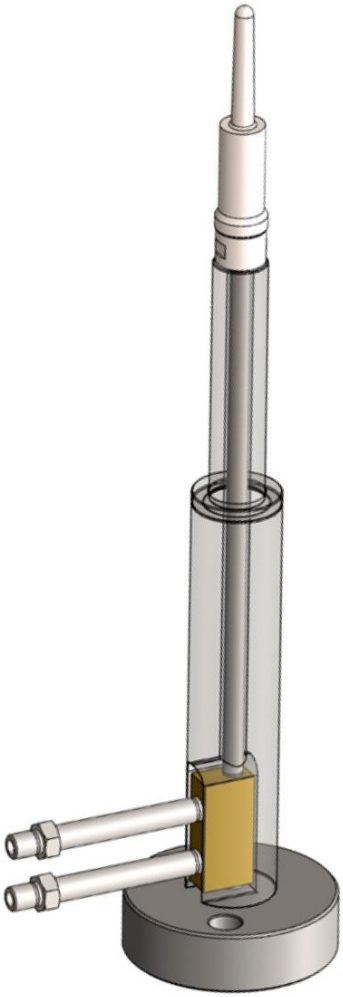
Our engineering makes a study of the components used and proposes specific improvement measures. A customised catalogue of components can eventually be created

Some advantages:

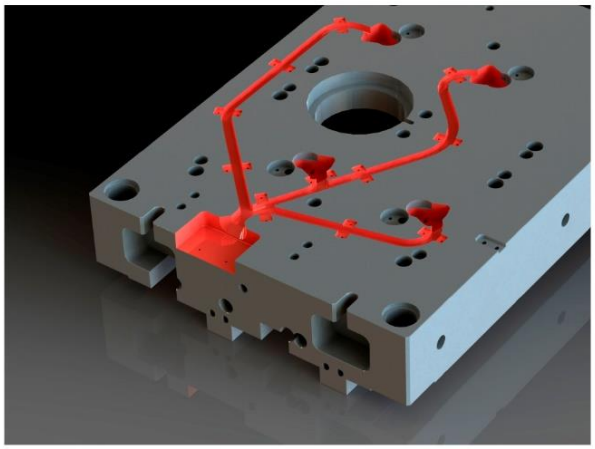
- Reduction in the number of active articles.
- Improvement of the administrative processes.
- Better adaptation of materials, treatments and coatings to the application.
- Up-dated CAD drawings.
- Total cost reduction.



Design and implementation of HIGH-PRESSURE PULSATING COOLING (HPPC) solutions.

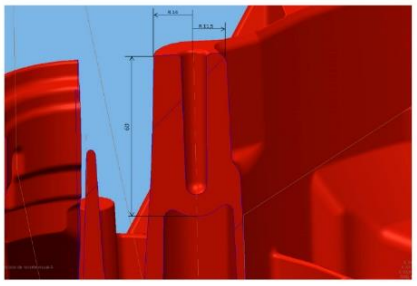


We provide the complete solution when need of migrating to HPPC technology.



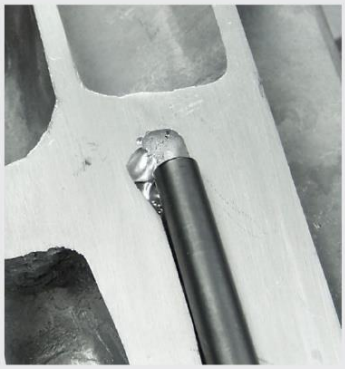
Project phases:

- Customer demands.
- Data collection & preliminary study.
- Design of the new HPPC solution (maintenance and ease of use are key).
- Manufacture, delivery and mounting of the mould components, and equipment & accessories.
- Technical support for the set-up.
- Continuous improvement plan.



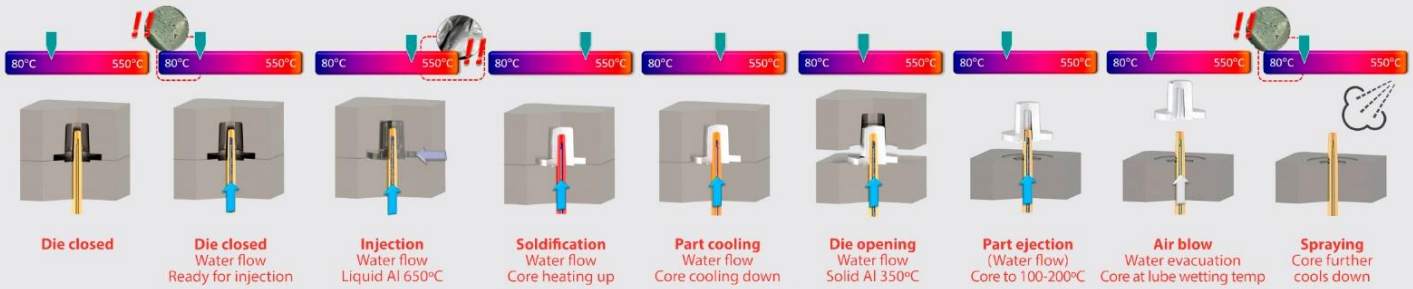
High-Pressure Pulsating water Cooling (HPPC).

The cooling of the critical areas by means of the High-Pressure Pulsating Cooling technology (also known as Jet Cooling) offers the die caster the advantage of controlling, accurately, the cooling of the hot areas around the core pins and, in this way, of minimising the shrinkage porosity problems and/or the soldering and erosion on the core pins.



Advantages of using the HPPC technology

- Reduction of the need of mould maintenance.
- Reduction of machine downtimes.
- Life increase of the mould components (for instance the core pins).
- Improvement of the surface and dimensional quality of the manufactured part.
- Reduction in the use of release agents.
- Distortion control.



CORE PINS AND CAST COOLER injectors

Materials.

High-purity-homogeneous hot work tool steels from the most recognized manufacturers.

Typical grades according to EN/10027-2 (AISI): 1.2344 (H13), 1.2365 (H10).

High Thermal Conductivity Steels-HTCS series.

Treatments.

Quenching and tempering in vacuum furnaces.

Gas and ionic nitriding/nitrocarburizing.

PVD coatings with "Cathodic Arc" and "Magnetron Sputtering" technologies.

Manufacturing.

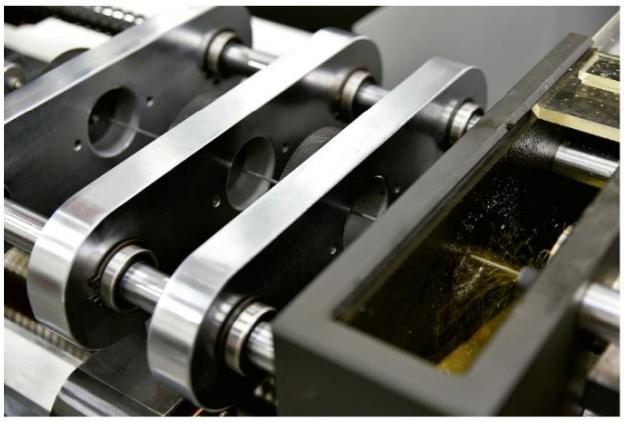
The concentricity of the inner channel with respect to the outer diameter of the core pin as well as the geometry of its tip are critical factors to ensure long component life and effective cooling.

Special finishing of the active area is key: suitable roughness and polishing in the demoulding direction.

Special execution of surfaces finishing and of radius/stress concentration areas.

CARRASCO has the required precision equipment and machinery for the manufacture of the most critical core pins and HPPC -Jet Cooling- core pins for aluminium high pressure die casting moulds.

The continuous improvement of its life and reliability are the keys to obtain important productivity advances.

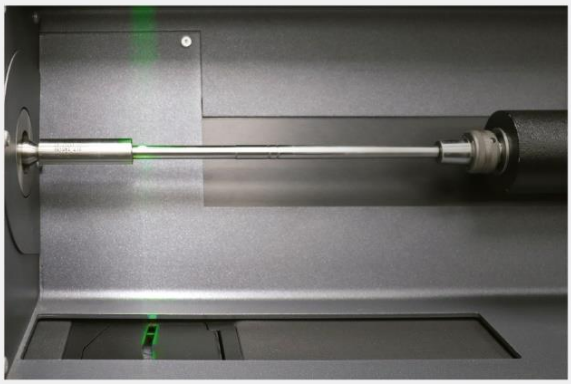


Quality control.

Scan profile-Measuring Machine.

Ultra-Sonic testing equipment.

X-Ray testing equipment.

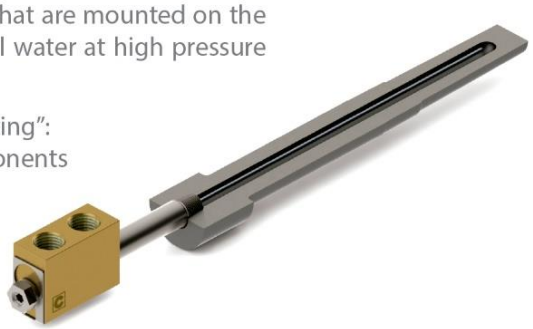


CAST COOLER injectors

The Cast Cooler injectors are cooling pipes of small diameter that are mounted on the core pin's cooling channel and, then, they are used to channel water at high pressure and air, in sequential cycles.

See our catalogue "Standard Components for Pressure Die Casting":
www.a-carrasco.com/en/pressure-die-casting/standard-components

Our product range according to core pin connection:
560: Screw | 561: O-ring | 562: Screw (Revolving)



INSERTS

Materials.

High-purity-homogeneous hot work tool steels from the most recognized manufacturers.

Typical grades according to EN/10027-2 (AISI): 1.2340 (modified H11), 1.2344 (H13), 1.2367 according to NADCA specifications.

High Thermal Conductivity Steels-HTCS series.

Treatments.

Quenching and tempering in vacuum furnaces.

Gas and ionic nitriding/nitrocarburizing.

PVD coatings with "Cathodic Arc" and "Magnetron Sputtering" technologies.

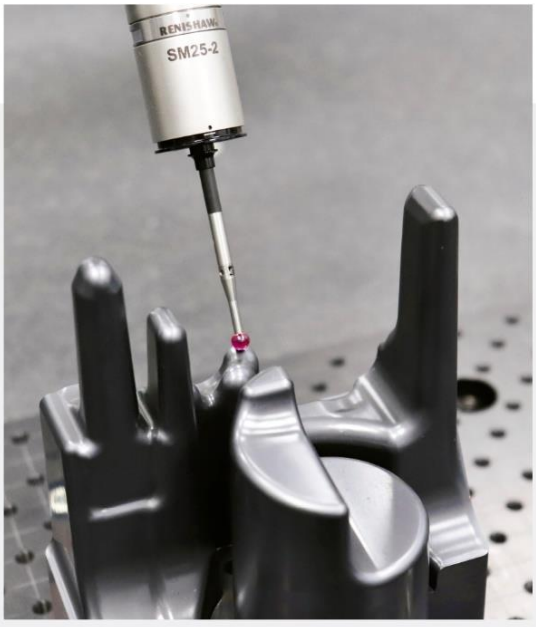
Manufacturing.

Special finishing of the active area is key: suitable roughness and polishing in the demoulding direction.

Special execution of surfaces finishing and of radius/stress concentration areas.

CARRASCO has the required precision equipment and machinery for the manufacture of the most critical inserts for aluminium high pressure die casting moulds.

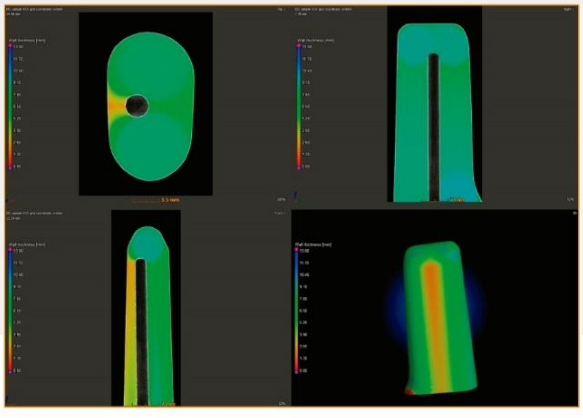
The continuous improvement of its life and reliability are the keys to obtain important productivity advances.



Quality control.

Coordinate-Measuring Machine.

X-Ray testing equipment.



WATER JACKET AND MANDREL INSERTS

Materials.

High-purity-homogeneous hot work tool steels from the most recognized manufacturers.

Typical grades according to EN/10027-2 (AISI): 1.2340 (modified H11), 1.2344 (H13), 1.2367 according to NADCA specifications.

Treatments.

Quenching and tempering in vacuum furnaces.

Gas and ionic nitriding/nitrocarburizing.

PVD coatings with "Cathodic Arc" and "Magnetron Sputtering" technologies.

Manufacturing.

Special execution of surfaces finishing and of radius/stress concentration areas.

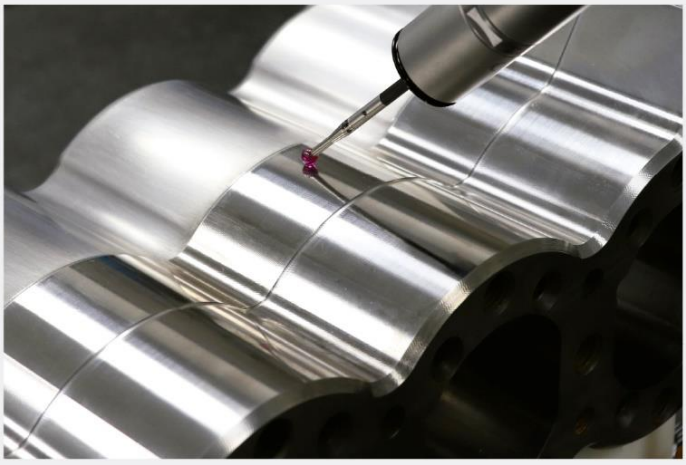
Water Jacket and mandrel inserts are a primarily critical components because of its special function and position within the high pressure die casting mould.

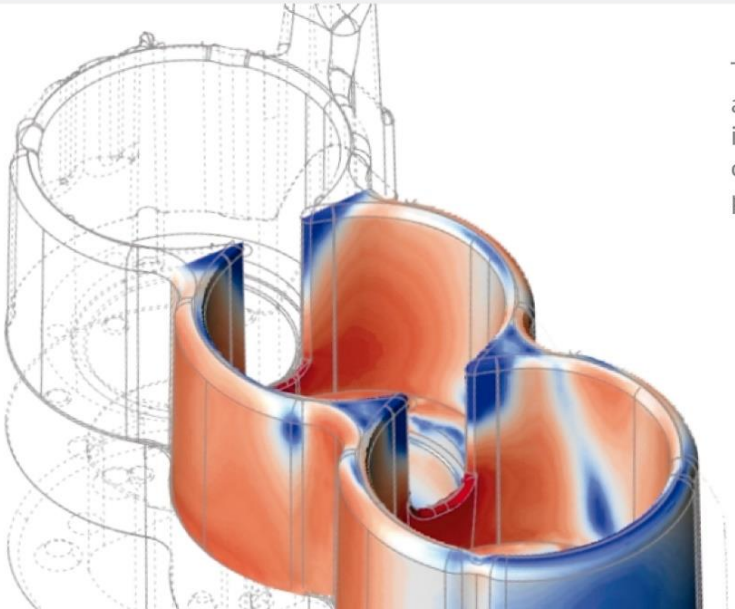
CARRASCO has the required precision equipment and machinery for Water Jackets and mandrel inserts manufacture.

Quality control.

Coordinate-Measuring Machine.

X-Ray testing equipment.





The continuous improvement of its life and reliability are the keys to obtain important productivity advances in the cylinder engine blocks production process.

STANDARD COMPONENTS

Product RANGE

5 | COOLING

560 injector Cast Cooler / screw
561 injector Cast Cooler / O-ring
562 injector Cast Cooler / revolving

6 | EJECTION & MOULDING

601 ejector pin – DIN1530A
603 ejector pin – DIN1530C
606 flat ejector pin – DIN1530E
608 ejector sleeve – DIN1530F
650 blank core pin
655 blank core pin - RENAULT standards

9 | MARKING

901 blank dater
902 annual dater

See our complete catalogue at:
www.a-carrasco.com/en/pressure-die-casting/standard-components/

This catalogue was specially designed from the needs of manufacturers and users of medium- large size moulds, for non-ferrous pressure die casting.

Standardisation advantages.

Standard products are manufactured according to some parameters and measures previously established, which are defined on a published catalogue. The use of standard products offers the customer significant competitive advantages:

- Fast costs and planning calculation.
- Costs reduction.
- Time reduction in the manufacture of moulds.
- Reduction of the moulds size.
- Fast adjustments of components with the mould in the machine.
- Minimisation of production stops.
- Fast replacement of parts.

Standard products use reduces the work of a mould maker. It allows saving between 30 % and 40 % time at mould manufacture and, therefore, a cost reduction. May a spare part be needed during the production the use of standard products allows to drastically reduce the production stop time.

Special sizes.

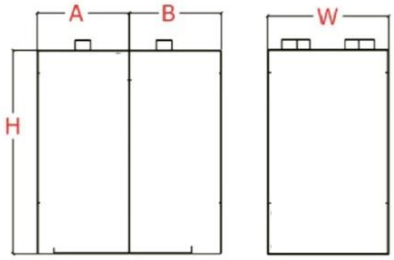
CARRASCO offers you special stock agreements for those sizes / options that are different from the ones contained on the catalogue, which may be of your interest.

CASTvac™

CASTvac™ a robust, reliable and performant vacuum valve for HPDC.

- Up to 5 times of venting area with reduced die layout.
- No valve blockage thus no machine downtime.
- Radical operational cost savings.

The MV series is designed to replace the Mechanical Valves. Spring-loaded built-in ejection on both moving and fixed sides.



MV series Valve type:	FDX-S	FDX-M	FDX-L	PV130
Width (W), mm	100	140	150	130
Depth in fixed side (A), mm	88,9	108	139,7	100
Depth in moving side (B), mm	88,9	108	139,7	90
Height (H), mm	190	241	248	207
Venting area, mm^2	120	180	250	150
Weight, kg	25,8	56	80	40

CV series Valve type:	CV-Mini	CV-S	CV-M	CV-L	CV-SL
Width (W), mm	63	100	140	150	230
Depth in fixed side (A), mm	63.5	88.9	108	139.7	140
Depth in moving side (B), mm	63.4	70	73	110	110
Height (H), mm	168.5	190	241	248	248
Venting area, mm^2	50	120	180	250	420
Weight, kg	10.5	23.5	47.5	72.5	110

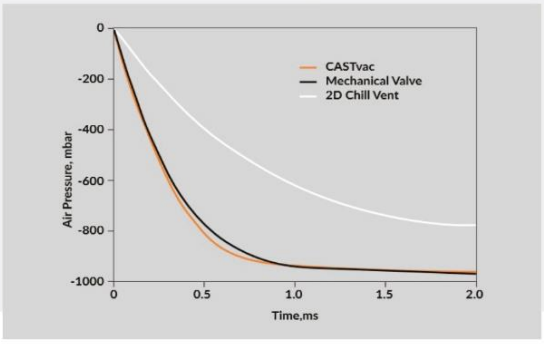
The CV series with spring-loaded built-in ejection in fixed side. Die driven ejection in the moving side.

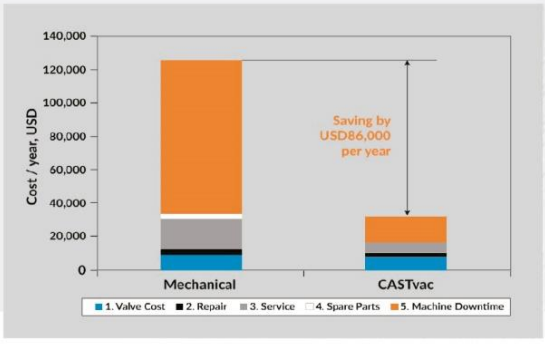
The perfect partner for a robust production with sustainable quality for High-Vacuum applications.

Advantages.

- Efficient air extraction due to large cross section and low restriction.
- Reduces drastically porosity generated by air entrapment.
- Stable production.
- Low maintenance costs.

Performant as good as a Mechanical Valve with reduced operational costs (cost saving up to 75 KEUR/year per DCM).





Developed by CSIRO Australia, globally patented, extensively adopted in Nissan Casting Australia. Distributed in Europe and Mexico by Carrasco Tool Components.

GAS SPRINGS

These gas springs are made of resistant materials, specific finishes and with special protections for the pollution of gases and liquids, capable of working efficiently and safely at temperatures up to 120 ° C.

A wide range of forces, measures and careers are available. The gas springs are not mounted but are assembled in each order. Once assembled they pass all the quality and safety tests, all in one day, thus ensuring that all the pieces of each of them are in perfect condition.

See our complete catalogue at:
www.a-carrasco.com/en/pressure-die-casting/gas-springs/

Due to the increasingly use of gas springs in foundry moulds and the increase of the demand of those working under adverse environmental conditions, we have designed and developed a range of specific products for conditions of extreme environmental pollution.

Protection devices.

The function of the protection devices is to avoid penetration of particles and substances inside the cylinder, like liquids, metal specks, impurities, etc., thus significantly lengthening gas spring useful life when it is working in highly polluted conditions.

Facilitates having gas springs working in any position.

Surface protection against corrosion in metal components

Gas spring with rod-protection cap

Gas springs with shield-scrapers

CARRASCO is a distributor of TECAPRES and offers integral solutions to its customers wherever they are.

OUR CAPABILITIES

Technical and commercial assistance.

Senior multilingual technical and commercial team with expertise in HPDC and presence in Europe and Mexico, to provide a flexible response to our customers' needs.

Production technologies.

Milling and turning.

Grinding (external cylindrical, internal cylindrical, centerless, surface).

Drilling, deep drilling and broaching.

EDM (sinker and wire electrode).

Special polishing.

Design-engineering and manufacturing software.

Altair INSPIRE®
MasterCam®

Quality control equipment.

Coordinate-Measuring Machine.
Scan profile-Measuring Machine.
Ultra-sonic testing equipment.

Production capacity.

CARRASCO's own capacity, with the addition of strategic agreements with approved manufacturers, allows us to offer you a wide range of products with the best service quality, always adapted to your needs.

CMM is the own manufacturing plant of the CARRASCO Group. Located in the town of Martorell (Barcelona), it is the reference plant for the manufacture of strategic and new launch products.

CARRASCO maintains strategic agreements with approved manufacturers in order to complement its offer and ensure the best service to its customers.

cmm
CARRASCO MARCORP MANUFACTURING

carrasco
EFFICIENCY IN TOOL COMPONENTS

MANUFACTURING POINT | PUNT DE FABRICACIÓ

ADDITIVE MANUFACTURING/3D PRINTING

CARRASCO participates in the RIS3CAT 3D TOOLING project, a R&D ecosystem for the implementation and adoption of Additive Manufacturing/3D Printing in the manufacture tooling industry.

The overall objective of the project is to obtain components and tools of mass production of high efficiency and productivity for processes of hot forming through the application of technologies AM/3DP

European Union
European Regional Development Fund

This project is co-funded by the European Funds for Regional Development of the European Union in the framework of the FEDER Operational Program of Catalonia 2014-2020.

OUR EXPERIENCE

Over 40 years' experience in components for moulds and dies

1970-1973.
Antonio Carrasco i Riera DME -standard elements for plastic injection moulding- representative in Spain.

1973-1989.
NORMALIZADOS AC, S.A. (Antonio Carrasco i Riera 50% share): Distribution of standard elements for plastic injection moulding and aluminium die casting.

1987-1997.
Antonio Carrasco i Riera member of the standardisation committee integrated in ISTA -International Organisation of Special Tools-.

1989.
Creation of **CARRASCO, S.A.** by Antonio Carrasco i Riera and his sons, Oriol Carrasco i Pla and Rubén Carrasco i Pla.

1991.
Beginning of sales in Portugal.

1995.
Implementation of the ISO 9001 Quality Management System.

2002.
Beginning of sales in France.

2013.
Beginning of sales in Germany.

2014.
2/3 export sales

The most representative client countries are Austria, China, Czech Republic, France, Germany, Hungary, Mexico, Morocco, Poland, Portugal, Romania, Slovakia, Spain, and Switzerland.

2016.
Changed name to CARRASCO TOOL COMPONENTS, S.A.

Creation of the production company CARRASCO MAXCORP MANUFACTURING, S.L., located in Martorell - Barcelona.

Beginning of sales in Mexico.

2018.
Exhibitor at the EUROGUSS fair in Nuremberg.

Participation in the RIS3CAT 3D TOOLING project, co-funded by European Funds, a R&D ecosystem for the implementation and adoption of Additive Manufacturing/3D Printing in the manufacture tooling industry.

2020.
Exhibitor at the EUROGUSS fair in Nuremberg.

CUSTOMERS


Autoliv
GRUPO ANTOLIN
BENTELER Automotive
CIE Automotive
TCG UNITECH AUTOMOTIVE COMPONENTS
DGH-GROUP
DGS passion for lightweight
ENDURANCE AMANN
fagorederlangroup
faurecia
Ford
snop snwm smom GROUPE FSD
Gestamp
LEAR CORPORATION
GROUPE GMD
MBF ALUMINIUM
Nemak Innovative Lightweighting
NISSAN
PSA GROUPE
GROUPE RENAULT
SEAT

CARRASCO IS A MEMBER OF:

carrasco

EFFICIENCY IN TOOL COMPONENTS

CARRASCO TOOL COMPONENTS, S.A.
Carretera de L'Hospitalet, 342
08940 Cornellà de LLobregat - Barcelona - Spain
T | (34) 934 746 240 | info@a-carrasco.com

www.a-carrasco.com