PRECISION COMPONENTS

WALLCOLMONOY
PRECISION COMPONENTS

AN INTEGRATED APPROACH - CASTING, MACHINING AND HEAT TREATING ALL FROM ONE SOURCE

Engineered cast or fully machined components are designed to optimise wear, corrosion, abrasion and heat resistant properties.

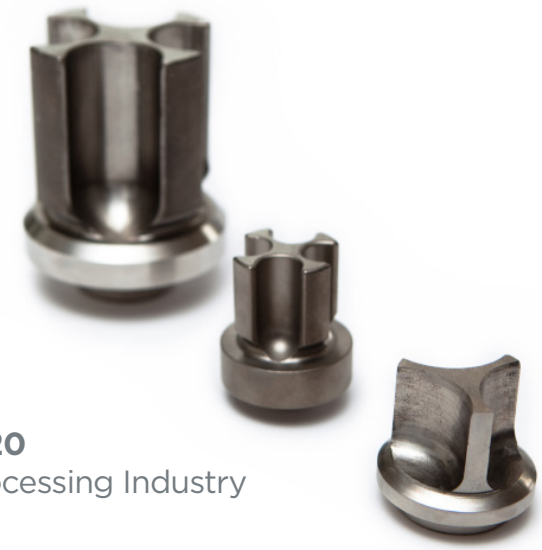
Components are made from **COLMONOY**® (nickel-based), **WALLEX**® (cobalt-based) or super alloys using Investment, Centrifugal, Sand Cast, Vacuum Cast or Hot Isostatic Pressing (HIP) Processes. Our parts are used throughout aerospace, automotive, chemical, food processing, glass, marine, oil & gas, power generation and steel industries.

Components can be supplied in the as cast, proof turned or finish machined condition. Machining facilities include CNC Turning, CNC Milling, Grinding, Honing, Lapping and EDM along with an array of measurement capabilities.

Our technical team has amassed a wealth of skill, knowledge and know-how turning designers' and engineers' rigorous requirements into commercially viable solutions. Our expert engineers select the optimum alloy and casting technique to suit specific needs.

Wall Colmonoy has a commitment to high quality manufacturing. With its on-site technical centre with laboratory and test facilities, it offers certification to national and internationally recognised standards. Each engineered component goes through reassuringly stringent inspections at each stage of the process. We maintain the quality assurance of ISO 9001.

Wallex® 6
Automotive Industry



Wallex® 20
Food Processing Industry

CASTING METHODS:

Investment – offers design flexibility, close dimensional control, consistency & repeatability, cost savings.

Centrifugal or Spin – used to produce high integrity densely structured, cylindrical components like bushes and sleeves.

Sand – typically used to produce larger components in smaller batches. It is capable of making mostly complex shapes using relatively inexpensive wood or resin. In addition, we can offer printed patterns for more complex geometries.

Vacuum Casting – used for alloys where tight compositional control and low inclusion counts are required.

Hot Isostatic Pressing – forms pore free bars or tubes with a fine grain homogeneous structure that enhances the physical properties of the cast alloy.

COLMONOY® - Nickel-Based Alloys

The Colmonoy® family of nickel chrome boron alloys offer superior wear protection, retaining their hardness up to 600˚C (1000˚F) while maintaining significant resistance to oxidation and corrosion.

WALLEX® - Cobalt-Based Alloys

Wallex® cobalt alloys have excellent wear and corrosion resistance and can maintain this at elevated temperatures.

Industry Standard Alloys

Wall Colmonoy's expert technical team collaborate closely with partners to meet specific requirements. Experienced in working with industry standard alloys to a multitude of international standards such as UNS, ASTM, AMS, ISO, DIN.

COMPARISON OF PROCESSES

PROCESS	WT RANGE (KG)	MAX DIMS	CAST TOLERANCE	SURFACE FINISH
Investment	0.01 - 30	300mm cube	+ / - 0.12mm / 25mm	3.2 Ra
Sand	0.5 - 150	1000mm cube	+ / - 0.7mm / 25mm	Machined
Centrifugal	1.0 - 150	500mm dia / 400mm long	N/A	Machined

Data given above is to be used as a guide and is subject to change.

Wallex® 25
Power Generation Industry

WallCarb™
Oil & Gas Industry

HIGH QUALITY, EXPERTLY ENGINEERED COMPONENTS

Wall Colmonoy works with customers as engineering partners to develop engineered solutions. Our unique experience in wear-resistant nickel and cobalt alloys is one of the reasons our customers choose us. Components can be poured in nickel, cobalt alloys and stainless steel. With a recently upgraded foundry and state-of-the-art machinery, customers have access to advanced manufacturing expertise. Our team are experts in machining the types of specialised hard metals cast in our foundry and are equipped with the necessary know-how and experience to produce excellent results. We work across many industries with particular know-how within Steel, Food, Glass, Pumps & Valves and Oil & Gas.

Steel Industry

Wall Colmonoy has supported the steel industry to extend the service life of components for decades. With high performance components for all types of steel production, Wall Colmonoy is a major supplier into the steel industry worldwide.

Bush Segment

Scroll Bush

Button

Roll End

Food Industry

Wall Colmonoy supplies precision machined components for the food industry, with particular expertise in **Wallex**® cobalt-based super-alloys. These parts are widely used for applications such as homogenisation equipment, aseptic packaging and canning.

Slide Valve Carrier

Seaming Roll

Homogeniser Valve

Forcer Disk

Glass Industry

Our extensive 70 years of heritage in the glass industry and close links to all major glass customers ensures we have a unique understanding of this sector.

Plug

Neck Ring Inserts

Thimble

Guide Plate

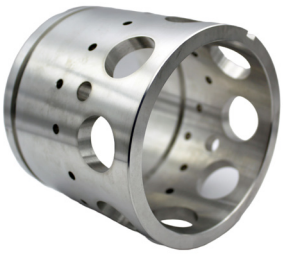
Oil & Gas Industry

With experience in high precision air and vacuum cast components and the capability to cast superalloys, Wall Colmonoy is an ideal partner for the Oil & Gas industry.

Rotor

Impeller

Shaft Seal Retainer



Flow Control Cage Valves

Pumps & Valves Industry

For the pumps and valves industries, **Colmonoy**® and **Wallex**® cast and machined components are sought after for high-pressure flow-control applications.

Plug Valve

Ball Valve

Metering Valve

Sleeve

MACHINE CAPABILITY AND MODERN CUTTING TECHNOLOGY

Precisely machined components are finished on modern CNC 4 & 5-Axis machining centres. Our Hurco 5-Axis CNC Milling Machine allows for full 5-Axis milling of complex shapes and geometries in various wear and corrosion resistant alloys ranging from 20 - 65 Hardness Rockwell C. Fully equipped with in-line measuring probes, parts can be finished consistently and repeatedly to tight precise tolerances.

PROOF MACHINING

Components manufactured from centrifugal and sand castings are proof machined prior to precision finishing to drawing. Bushes and sleeves for power generation valves, galvanising steel sheet equipment and piston rings for marine engines are produced on these machines.

GRINDING

Components requiring grinding are finished on our state-of-the-art CNC Grinders, achieving extremely fine tolerances to better than 0.02mm and high surface finish. Components include parts for pumps with high processing pressures which demand accurate metering of chemical products.

HONING & LAPPING

Many components are specified to extremely low micron surface finishes for customers requiring extremely smooth, flat component surfaces. These are achieved using our state-of-the-art honing and lapping equipment.

EDM

Machining permits complex profiles in wear-resistant materials to be produced cost-effectively and to high precision. Wall Colmonoy's comprehensive array of wire cutting machines enable components from a few grams to many kilos to be produced to finished drawing.

Machining Facilities	Max. Component Dimensions				
	Diameter	Length	Tolerance	Surface Finish	Weight
Proof Machining	Ø25mm – 650mm	100mm – 600mm	± 1.0mm	3.2Ra – 6.4Ra	Max. 350kg
CNC Turning Cell	10mm – 845mm	Max. 2000mm	± 0.05mm	0.4Ra – 0.8Ra	Max. 300kg
CNC Large Turning Cell	Ø3.0mm – 554mm	Max. 2000mm	± 0.05mm	0.8Ra – 1.6Ra	Max. 300kg
Precision Milling	X:1524mm Y: 660mm Z: 520mm	Max. Ø500mm			Max. 400kg
Conventional Cylindrical Grinding	300mm	685mm	± 0.02mm	0.1Ra	Max. 30kg
CNC Cylindrical Grinding		650mm	± 0.01mm	0.8Ra	Max. 30kg
Honing		Max. 600mm	± 0.01mm	0.2Ra	Max. 300kg
Lapping	1000mm	400mm	± 0.01mm	0.06Ra	Max. 300kg
EDM Sinking	X: 550mm Y: 370mm Z: 310mm	310mm	± 0.10mm	4.8Ra	Max. 1000kg
EDM Wire-Cutting	X: 800mm Y: 600mm Z:800mm	800mm	± 0.025mm	0.4Ra	Max. 3000kg

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WALLCOLMONOY

Wall Colmonoy. Making Metals Work Harder Since 1938.

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