



Piston Ring Excellence

MARINE
POWER
RAIL & INDUSTRIAL

A large, dark-colored piston ring is the central focus, curving from the top left towards the bottom right. Several smaller, silver-colored piston rings are arranged in a circular pattern to the left of the main ring, some overlapping each other. The background is a clean, white surface.

PROVEN OVER MILLIONS OF
ENGINE HOURS SINCE 1956

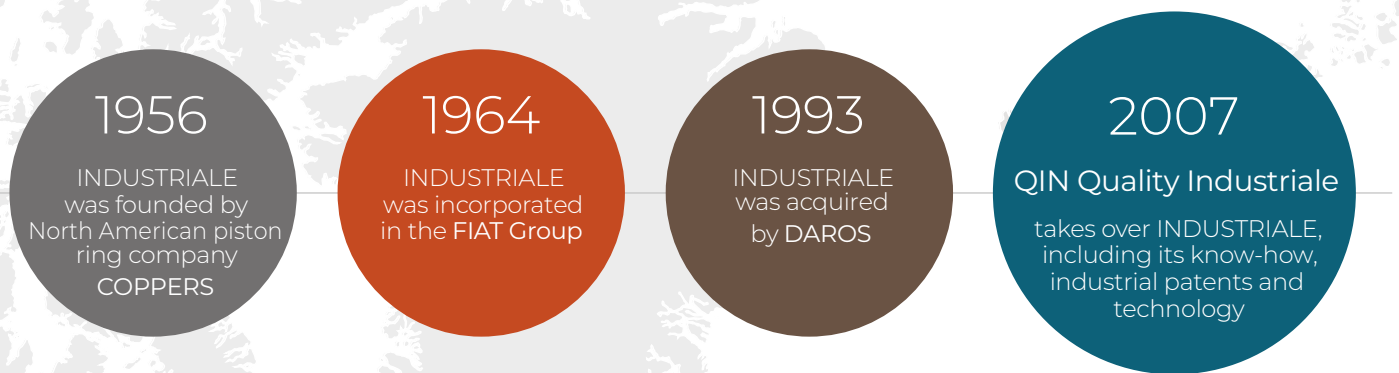
WHO WE ARE

QIN is the 21st century regeneration of the piston ring market leader formerly known as Industriale Srl. We are a leading manufacturer of piston rings for OEMs of 4 stroke large bore engines.

QIN piston rings are supplied into marine, industrial and power generation applications worldwide.

In 2007, QIN Srl acquired the Genoa business previously known as Industriale Srl, along with its 50-year history in the market, its technical know-how, patents and expertise.

Building upon the chrome ceramic and plasma-coating technology as well as the casting competencies, we have invested in our own foundry in Cuorgne (Turin) to bring all the production processes in-house and under our control.



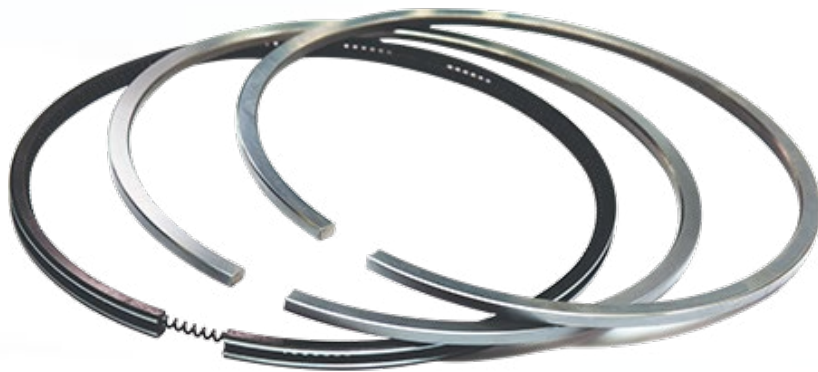
Mission Statement

To be the partner of choice for engine manufacturers in the design and production of best-in-class 4-stroke piston rings for the worldwide market.

QIN CUSTOMER SATISFACTION RING



QIN PRODUCT RANGE



PISTON RINGS for 4 stroke large bore diesel and gas engines

APRs, flame rings and repair bushes



Contact us for a full list of the engines for which we are able to provide compatible ring sets.

QUALITY INSPECTION

Q/A, Q/C process is performed continuously on a sampling basis:



CHEMICAL
COMPOSITION



HARDNESS



ULTRASONIC
VELOCITY



MICROGRAPHIC
STRUCTURE



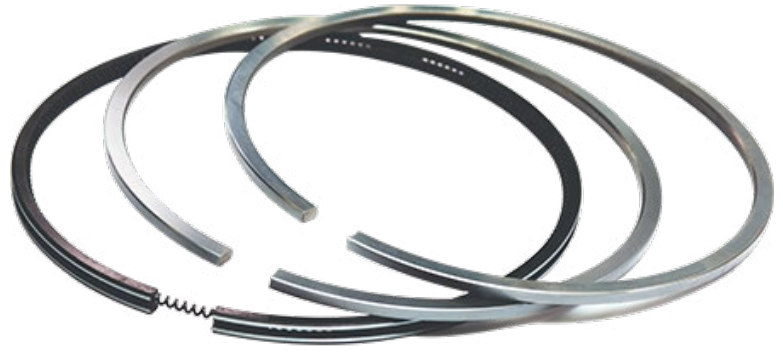
MODULUS
OF ELASTICITY

QIN TECHNICAL SUPPORT - YOUR HELPING HAND

QIN has strong in-house R&D and Engineering capabilities, allowing us to offer full life-cycle support to our customers.

We have facilities to develop new base materials with our in-house casting competence, as well as new galvanic coatings with a dedicated test bath.

We can, and do, also provide a technical visit service, to see our customers' challenges in situ as we develop solutions for them.



FULL-CYCLE IN HOUSE PRODUCTION - SPEED AND FLEXIBILITY

We have our own foundry in Turin as well as the machining, coating & finishing plant in Genoa - so giving us complete control over the production process, and a high degree of operational flexibility.

Our unique centrifugal casting technology allows us to produce the rings in tube form, for maximum efficiency and quickest lead times.

CHROME CERAMIC TECHNOLOGY - THE BEST IN THE BUSINESS

QIN offers various coating options. However, for the smoothest, hardest-wearing and least wear-inducing coating available in the market today for this size and type of piston ring, we offer computer-controlled ceramic chrome galvanisation.

Very few can offer this in-house, even fewer can do it to the highest standards - and thereby help their customers keep engine wear to an absolute minimum.



IN-HOUSE LABORATORY - PROVIDING PEACE OF MIND

To ensure the consistent quality of all QIN production rings, as well as to support the development of new products, we have invested in a specialised testing laboratory.

Within it, you will find highly-trained technicians using modern equipment for continuous checks on the fundamental parameters of the components' geometry as well as on the characteristics of the material used - including the metallographic structure, coating adhesion and cross section analysis.



LARGE INVENTORY - SUPPORTING JIT DELIVERY

At QIN we can offer swift delivery, worldwide, from our large inventory of work in progress as well as finished ring sets in the most common sizes and specifications compatible with the large-bore engines of leading OEMs.

BEST TECHNO-COMMERCIAL OUTCOMES

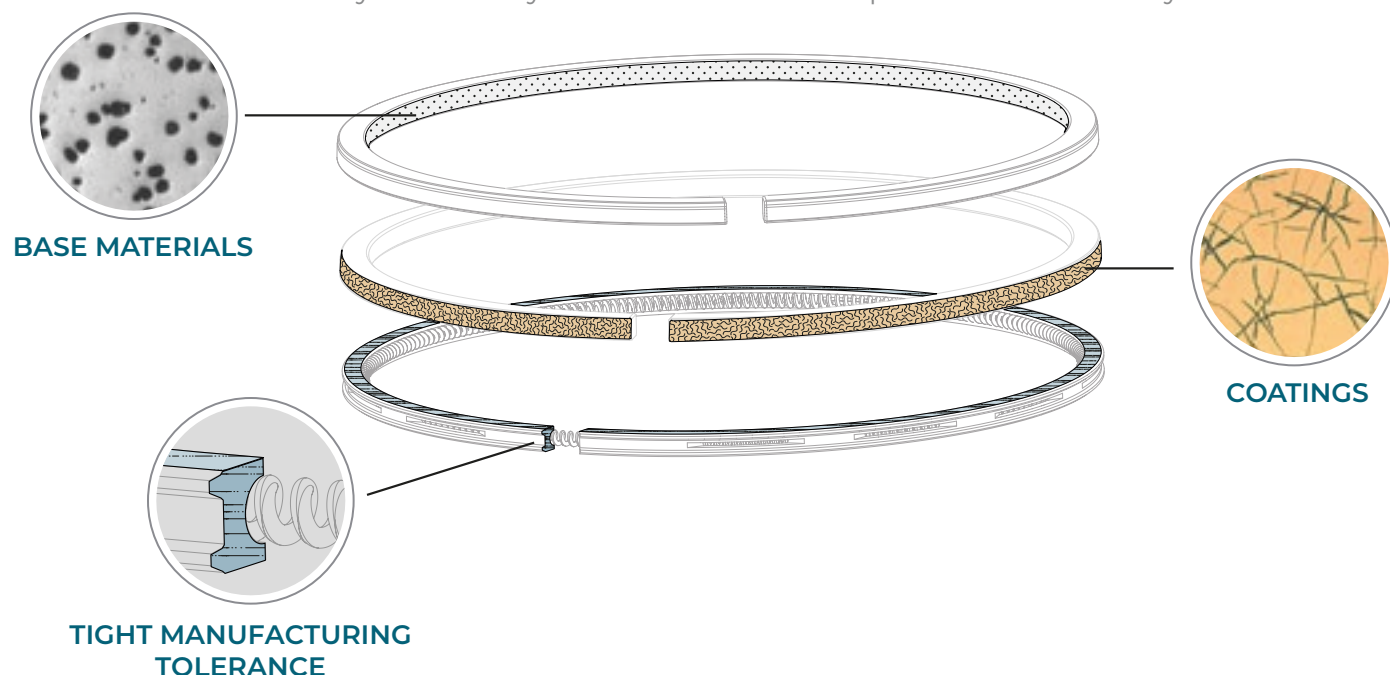
When we put all these elements of the QIN story together, those who work with us today choose to do so because they know that they receive **market-leading technology**, with **short lead times** and **competitive pricing**.

Why not join them?



QIN TECHNOLOGY

Materials and processes developed over decades ensure that QIN piston rings form tight compression seals to boost engine performance whilst reducing friction / wear and so saving on expensive lubricants. They also reliably transfer heat from the piston crown to the cylinder.



QIN Base Materials



QIN 6PE

Chemical composition [%]

C: 3,20 ÷ 3,50	Cu: 0,50 ÷ 1,00
Mo: 0,20 ÷ 0,45	Mn: 0,60 ÷ 0,90
P: 0,15 ÷ 0,35	Cr: 0,20 ÷ 0,30
Si: 1,85 ÷ 2,35	S: 0,10 max
V: 0,05 max	Ni: 0,30 max

Hardness	230 ÷ 290 HB
Modulus of elasticity	90.000 ÷ 120.000 N/mm ²
Bending strength	500 N/mm ²



QIN 9S

Chemical composition [%]

C: 2,90 ÷ 3,40	Cu: 0,50 ÷ 1,00
Mo: 0,40 ÷ 0,75	Mn: 0,60 ÷ 1,00
P: 0,10 ÷ 0,30	Cr: 0,10 ÷ 0,40
Si: 1,70 ÷ 2,30	S: 0,10 max
V: 0,05 max	Ni: 0,20 max

Hardness	240 ÷ 300 HB
Modulus of elasticity	95.000 ÷ 125.000 N/mm ²
Bending strength	600 N/mm ²



QIN 27

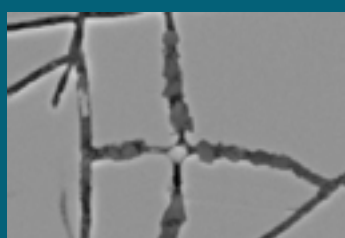
Chemical composition [%]

C: 3,30 ÷ 3,90	Cr: 0,15 max
Mg: 0,06 ÷ 0,12	P: 0,10 max
Si: 1,80 ÷ 2,70	Cu: 0,35 ÷ 1,00
V: 0,05 max	S: 0,03 max
Mn: 0,80 max	Ni: 1,50 max

Hardness	260 ÷ 350 HB
Modulus of elasticity	140.000 ÷ 180.000 N/mm ²
Bending strength	1300 N/mm ²

QIN Coatings

QIN has developed and applies the following galvanic and sprayed coatings, chosen to best suit the particular 4-stroke large bore diesel or gas engine in question.

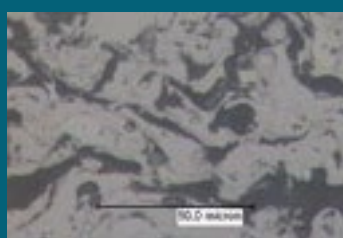


QIN 53

Chrome ceramic coating

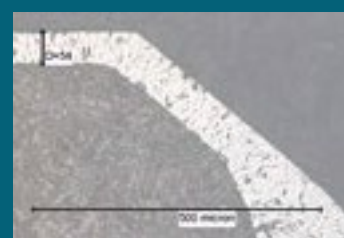


Hard chrome coating



Plasma and metallic
sprayed coatings

[Mo, Cu, Sn, Ni, Ni-Cr-Mo]



Three side coating

For heavily loaded rings



Combustion Chamber Components

Supporting the heavy-duty automotive engine industry worldwide since 1947

QIN's sister company CCC, with whom we share our foundry, is a leading manufacturer and Tier 1 Supplier of combustion chamber components for heavy-duty automotive applications.

We work with OEM and OES Customers worldwide, supplying CCC products for trucks and buses, locomotives, construction and agricultural motors - and working with many of the best-known names in the business.

Mainly working between 70mm and 155mm bore, our scope of supply covers, but is not limited to:

CYLINDER LINERS
PISTONS
PISTON RINGS
PISTON PINS
PISTON KIT ASSEMBLIES
HALF BEARINGS



Contact us to find out more:

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MADE IN ITALY

DELIVERED AND SUPPORTED GLOBALLY

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(Torino) - Italy

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United Kingdom

ISO 9001

BUREAU VERITAS
Certification



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ADVANCED TECHNOLOGY - SHORT LEAD-TIMES - COMPETITIVE PRICES