



Piston Ring Excellence

MARINE
POWER & INDUSTRIAL
RAIL

A large, dark-colored piston ring is shown in the foreground, curving from the top left towards the bottom right. Behind it, several other piston rings of different sizes and materials (some silver, some black) are arranged in a circular pattern, creating a sense of depth and showcasing the variety of products.

OEM QUALITY, PROVEN OVER MILLIONS
OF ENGINE HOURS SINCE 1956

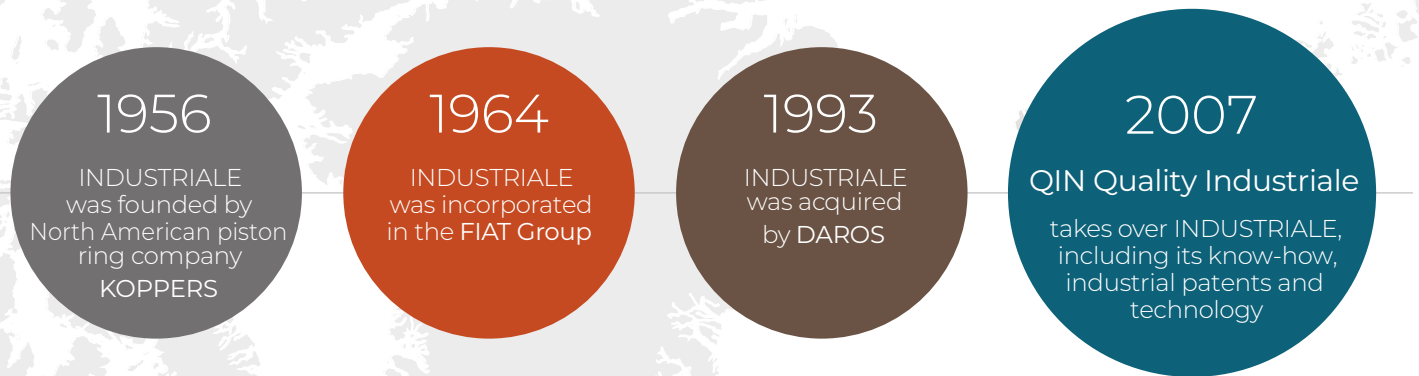
WHO WE ARE

We are a leading manufacturer of piston rings, for high speed, medium speed and slow speed diesel and gas engines with bores in the range of 160mm-980mm.

QIN piston rings are supplied into marine, industrial, rail and power generation applications on every continent bar Antarctica.

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.



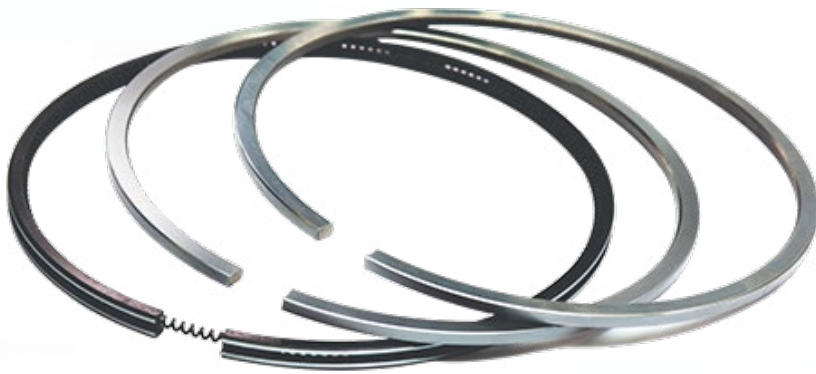
Mission Statement

To be the partner of choice for engine manufacturers in the design and production of best-in-class 2-stroke and 4-stroke piston rings for the worldwide market.

QIN CUSTOMER SATISFACTION RING



QIN PRODUCT RANGE



PISTON RINGS for
2-stroke and 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



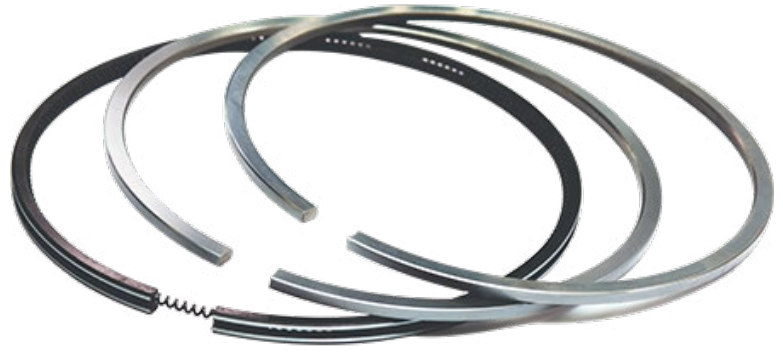
MODULUS
OF ELASTICITY

QIN TECHNICAL SUPPORT - YOUR HELPING HAND

QIN has strong and highly-experienced 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 standards required by an OEM - 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.



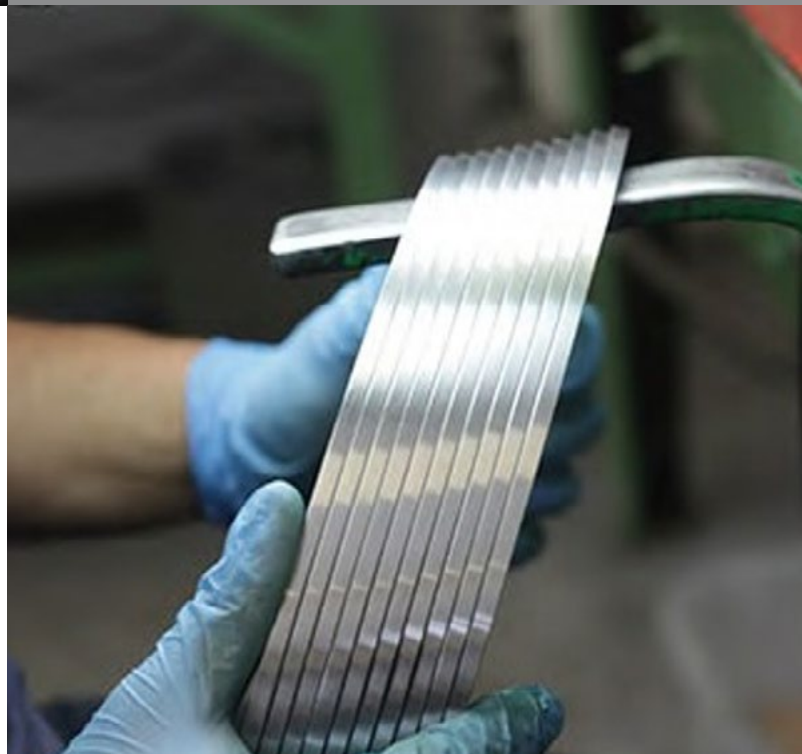
LARGE INVENTORY - SUPPORTING JIT DELIVERY

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 = HAPPY ENGINEERS AND HAPPY PURCHASERS

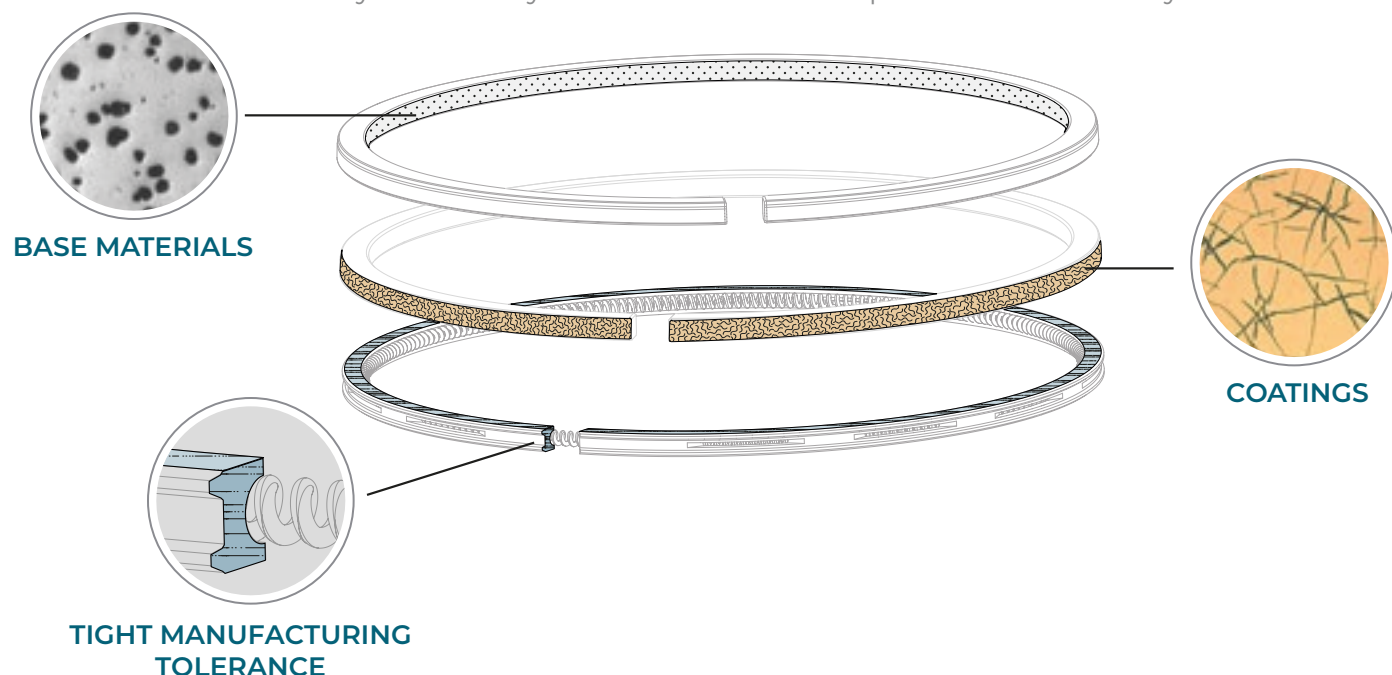
When we put all these elements of the QIN story together, those who work with us today choose to do so because they know that they receive **market-leading technology**, with **short lead times** and **competitive pricing**.

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

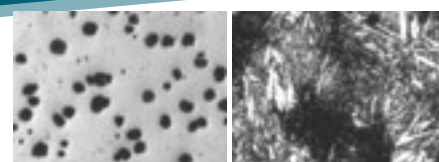


QIN 9S

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

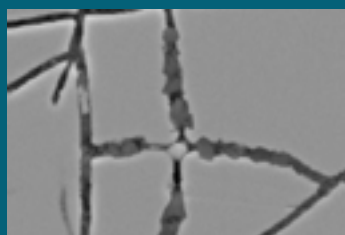
Chemical composition [%]

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

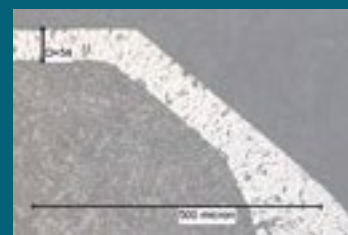


Hard chrome coating



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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DELIVERED AND SUPPORTED GLOBALLY

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