

The logo features a stylized yellow piston ring icon to the left of the word "HASTINGS" in a bold, blue, italicized sans-serif font. Below "HASTINGS" is the text "Piston Rings" in a smaller, yellow, italicized sans-serif font. A registered trademark symbol (®) is located to the right of "Piston Rings".

HASTINGS
Piston Rings®

MADE FOR THE WORLD



www.hastingspistonrings.com

Who Is Hastings?

- Dedicated Piston Ring Manufacturer
- Global Design & Engineering Center
- Servicing Global OEM And Aftermarket
- Trusted By Our Partners
- Intently Focused On Service
- Constantly Improving Piston Ring Design

Steel Ring Production



**HASTINGS**
Piston Rings®

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MADE FOR THE WORLD



Hastings Manufacturing Company Is A World Leader In The Engineering And Manufacturing Of Piston Rings.

For over 100 years, we've never wavered from our first and only mission—to make the best piston ring possible.

Hastings offers piston rings for nearly any application worldwide—from automotive and truck, to agriculture, industrial, small engine, as well as marine and high performance engine applications.

Our Benefits:

- Complete control of casting supply chain
- Better quality
- Reduced lead-time
- Regional distribution facilities
- Lower MOQ's
- Rapid prototyping and production
- TecDoc database

History

1915
Company is founded



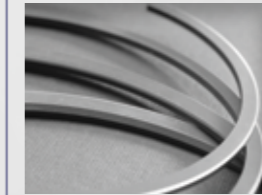
1936
"Tough Guy" is born



1960
Built foundry for castings supply



1992
Developed in-house steel compression ring manufacturing



2004
Became first piston ring manufacturer to achieve TS-16949 international quality standard

2006-10
Launch new private label program growth worldwide

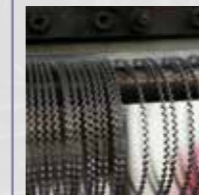
2013
Partnered with RFE Management



2017
Hastings merges with Piston Ring Komarov



1923
Dedicated to designing and manufacturing piston rings



1956
Invented Flex-Vent® oil ring technology

1979
Invented Mini Flex-Vent®, the oil ring of choice for OEM's throughout the world

1998
Invented Hyper-Vent® oil ring

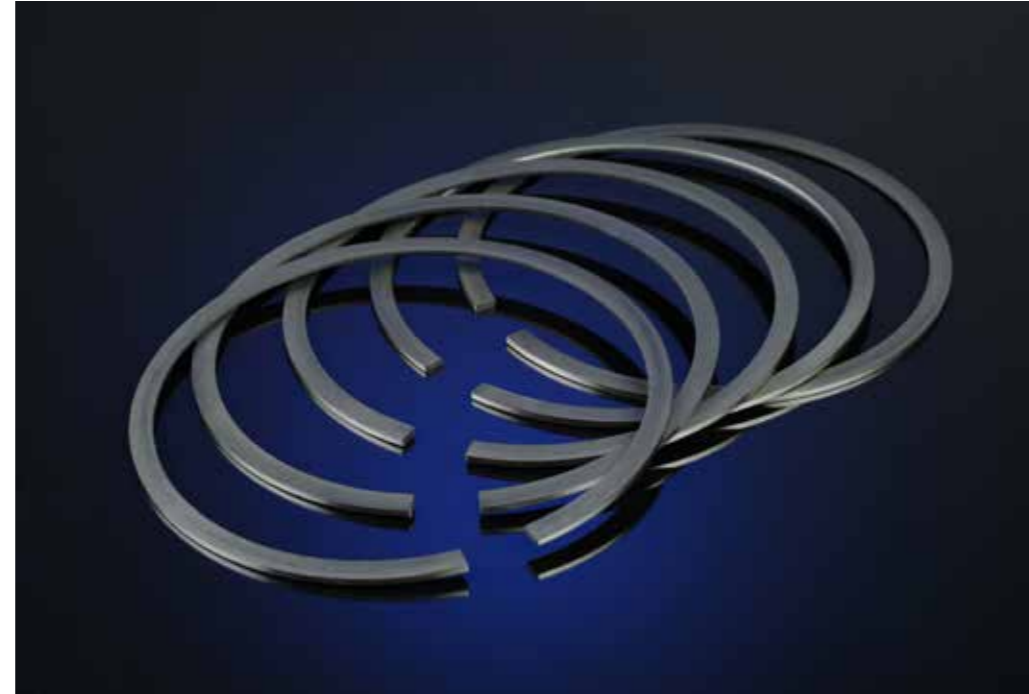
2005
Acquired by AndersonGroup



2015
Celebrated 100 years

Hastings Snapshot

- Most extensive product offering in industry
- Global leader to serve Aftermarket and OEM customers in over 75 countries
- A Premier brand name within the global Aftermarket
- Diverse base of blue-chip customers in multiple channels
- A Leading manufacturer of Gas and Diesel piston rings for combustion engines
- Serving the global automotive OEM and Aftermarket channels
- Distribution centers in USA and Europe serving global customers
- The Widest Aftermarket portfolio in the world
- Offering in one cylinder and complete engine sets



We Know The Best Solution For Your Engine

- **25,000 PART NUMBERS**
- **2.5 MILLION + APPLICATIONS**
- **ONE WELL EARNED REPUTATION**



Our rings come in sets, a top compression ring, second compression (or oil scraper) ring, and oil control ring—and range from 1.125" to 8.875" (29 mm - 225 mm) bores.

If you're questioning the set you need, our engineers can recommend the right one out of the thousands we offer.



Covering Markets

Learn About The Types Of Applications Hastings Covers

1: Gasoline and Diesel engines,

2: Automotive, Commercial, Motorcycle, Industrial, Marine

Automotive



Automotive Applications:

- Gasoline & Flex Fuel (LVP)
- Light Vehicle Diesel (LVD)
- Medium Vehicle Diesel (MVD)

- Naturally Aspirated, Supercharged, Turbocharged
- Direct Fuel Injection
- Cast Iron Bore, Aluminium Alloy Bore, Coated Aluminium Bore



Commercial



Typical Applications:

- Medium trucks
- Heavy trucks (HCV)
- Off highway
- Agricultural machinery

- Forestry application
- Mining industry
- Cast Iron Bore, Aluminium Alloy Bore, Coated Aluminium Bore



Motorcycle



Engine Applications:

- Air Cooled
- Liquid Cooled
- Motorcycles
- Motor Scooters

- Mopeds
- Snowmobiles
- ATVs
- Go Carts
- Aluminium Alloy bore, Coated Aluminium bore, Parent Aluminium Bore and Coated



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Industrial



Typical Applications:

- Compressors
- Air Brakes
- Generators
- Pumps

- Chain Saws
- Air Compressors: Single and Two stage
- Air Brake compressors
- Industrial Refrigeration: Air Conditioning, Refrigerators, Freezers, Mobile Refrigeration Units
- Oil and Oil-less Compressors



Marine



Typical Applications:

- Gasoline & Diesel Engines
- Naturally Aspirated
- Supercharged

- Turbocharged
- Carbureted
- Inboard Motors
- Outboard Motors
- Jet Skis

- Jet Boats
- Marine Generators
- Cast Iron Bore
- Aluminium Alloy Bore
- Coated Aluminium Bore



Technical Capabilities

Base Materials

► Gasoline

- **Base Material**
 - 9254 steel
 - Stainless steel
 - Cast gray iron
 - Cast ductile iron
- **Coatings**
 - Moly
 - Chrome
 - Ceramic Chrome
 - Gas Nitrided
 - PVD

► Diesel (LCV,LVD,MDD,HDD)

- **Base Material**
 - Hardened ductile iron
 - 9254 steel
 - Stainless steel

• Coatings

- Chrome
- Ceramic Chrome
- Gas Nitrided
- PVD
- Gas Nitrided + PVD

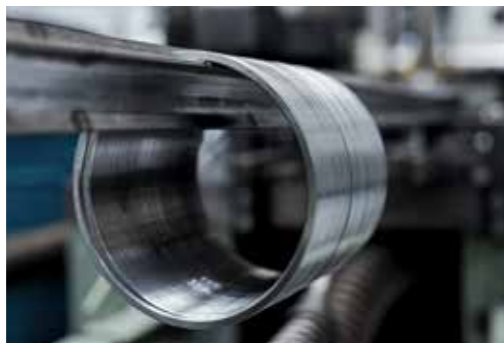
► Steel

- ISO MC64
- ISO MC65, 66, 67
- ISO MC68

► Iron

Dedicated piston ring foundry capable of pouring:

- ISO MC 12/13, 23, 25, 32, 52/53, 56
- Nodular (Ductile) Iron
- Martensitic Ductile Iron

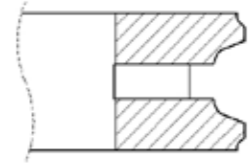


MADE FOR THE WORLD

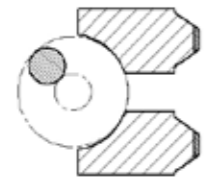
Type Of Piston Rings

Typical Representatives

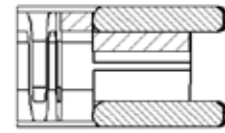
RING CROSS-SECTIONS



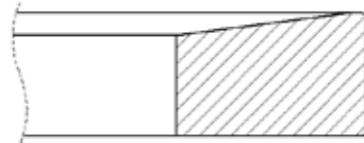
• BEVELLED-EDGE OIL CONTROL
TYPE D



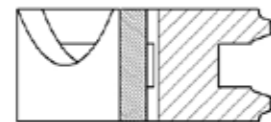
• COIL-SPRING LOADED
BEVELLED-EDGE OIL CONTROL
TYPE DSF-C



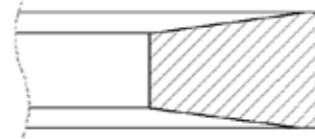
• EXPANDER-SEGMENT
OIL CONTROL
Flex-Vent®



• HALF KEYSTONE
TYPE HK



• INNER-SPRING
LOADED OIL CONTROL



• KEYSTONE
TYPE K,T



• NAPIER
TYPE NM



• RECTANGULAR
TYPE R



• SCRAPER
TYPE E



• STEEL VENT
OIL CONTROL

PERIPHERAL SURFACE CONFIGURATIONS



• ASYMMETRICAL
BARREL FACE
TYPE BA



• BARREL FACE
TYPE B

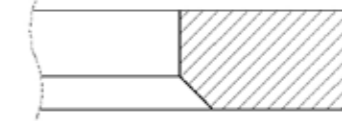


• STRAIGHT FACE
TYPE R

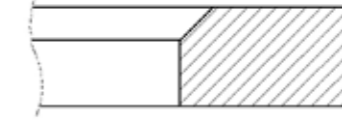


• TAPER FACE
TYPE M

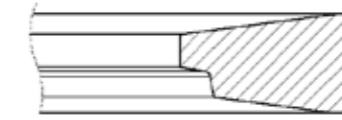
EDGE CONFIGURATIONS



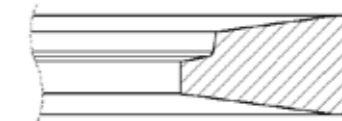
• INTERNAL BEVEL BOTTOM SIDE
(NEGATIVE TWIST)
TYPE IFU



• INTERNAL BEVEL TOP SIDE
(POSITIVE TWIST)
TYPE IF



• INTERNAL STEP BOTTOM SIDE
(NEGATIVE TWIST)
TYPE IWU



• INTERNAL STEP TOP SIDE
(POSITIVE TWIST)
TYPE IW

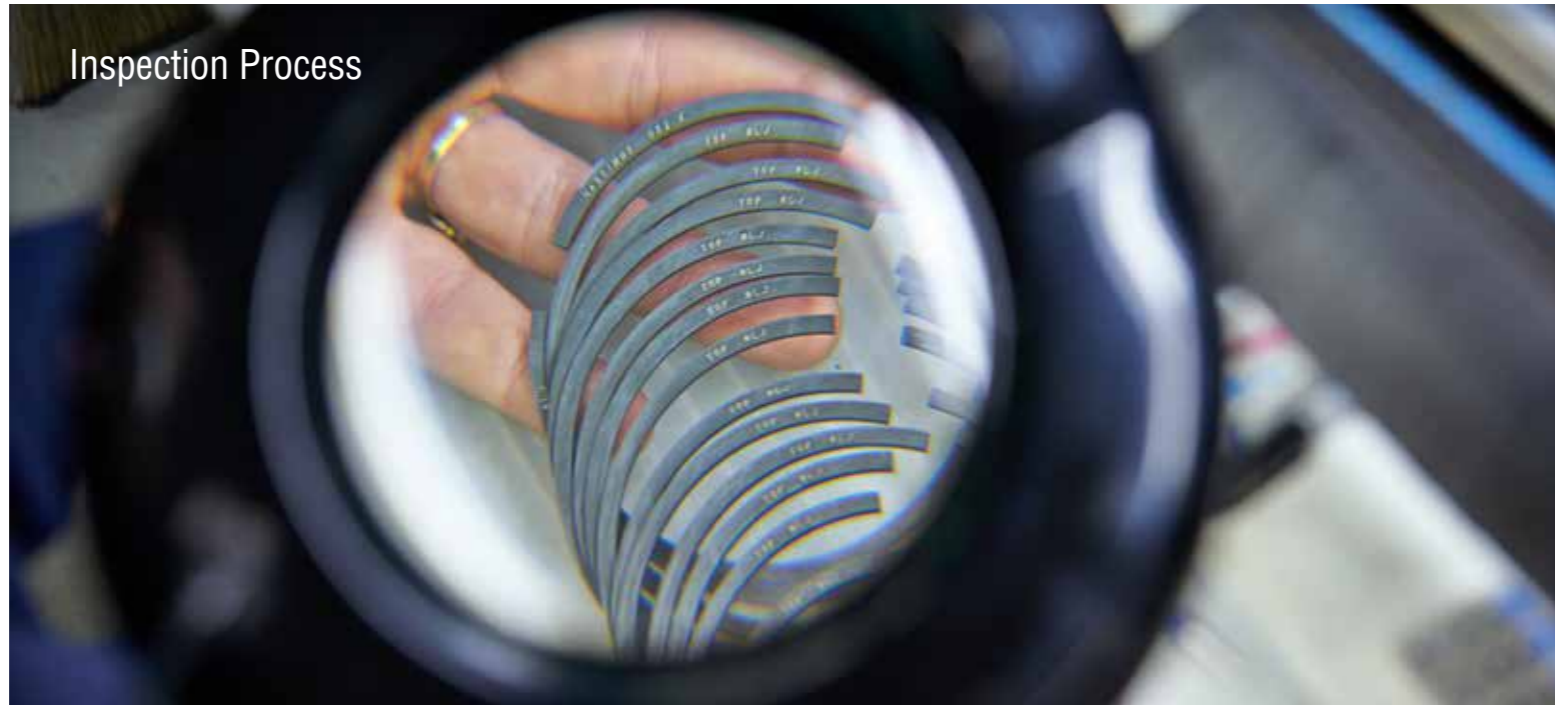


PISTON RINGS ARE SOLD
IN 1 CYLINDER AND COMPLETE
ENGINE SETS FOR VARIOUS
APPLICATIONS.

We Are Not Just Meeting Expectations... We Are Exceeding Them

Quality

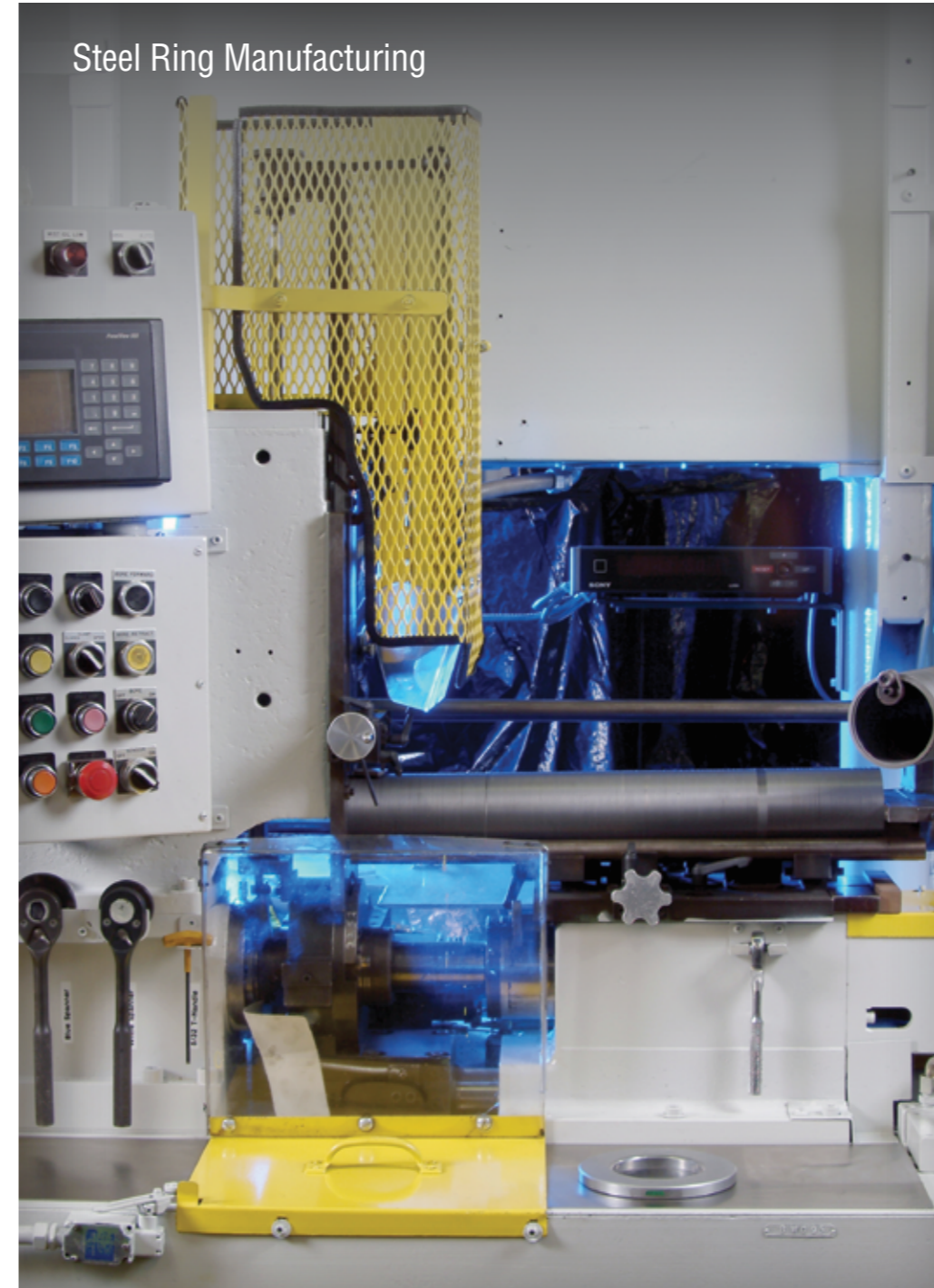
Inspection Process



- Relentless pursuit of Quality, Excellence and Continuous Improvement (QECI)
 - **DEPLOYED SIX-SIGMA AND LEAN MANUFACTURING PROGRAMS**
- Hastings' Quality Management System (QMS) is certified for compliance with international quality and business process standards
 - **ISO 9001, ISO / TS 16949:2009**
- Hastings' Environmental Management practices and system are certified for compliance with international standards
 - **ISO14001 (ENVIRONMENTAL MANAGEMENT SYSTEM)**
- Certificate of conformity use of the mark of conformity for piston rings products
 - **CERTIFICADO NO. 14A-0011**
- **CERTIFICATE INMETRO**
- **SASO CERTIFICATE**
- **EAC CERTIFICATION**
- **VMI CERTIFICATION**



Steel Ring Manufacturing



Foundry





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 www.hastingspistonrings.com

Manufacturing and distribution location 