



## **EXTREME-DUTY H78-2 15-5/17-4 DRIVE CHAINS**

**(US PATENTS 7,237,375 B2 and 7,343,730 B2)  
(CANADIAN PATENT 2,519,653)**

Chain materials and design shall meet or exceed ASME B29.400-2001 standards for H Type Drive Chains and Sprockets. Drive chain links shall be investment cast H78 series 15-5 (UNS J92110/ACI CB7Cu2) precipitation hardening martensitic stainless steel alloy, heat-treated and through hardened for an H900 standard to an average of 39 to 44 Rc (375-415 BHN), cleaned, pickled and passivated per ASTM A380-06 and ASTM A967-05e1, having a 2.609" pitch length with an average weight of 15 oz. per link and 4.3 pounds per foot. Fabricated and/or welded chain designs are not acceptable. Chain links and pins manufactured from 400 series stainless steel are not acceptable. All chain links and pins will be passivated, smooth and free from casting burrs, voids and material defects, and shall maintain a +/- .010" uniform dimensional tolerance between each individual link and link component. Chains shall be interchangeable with all H78, NH78, 988, 488 and 188 drive chains, and shall meet or exceed all American and foreign industry standards for hardness, tensile strength, corrosion resistance and durability in continuous severe duty and extreme duty service.

The chain shall have a 7/8" diameter barrel O.D.'s, and minimum .370" thick by 1.13" high sidebars. Chain sidebars at the pin boss (open end of the link) shall have a minimum .440" thick by 1.13" high sidebar dimension. The drive chain shall have a certified average ultimate strength of 40,000 pounds, a design working load of 4,000 pounds, and a maximum working load of 5,000 pounds. Chains shall be suitable for operating on either cast, fabricated or non-metallic sprockets.

The chain shall be assembled with 1/2" diameter investment cast 17-4pH (UNS J92180/ACI CB7Cu1) precipitation hardening martensitic stainless steel pins, heat-treated and through hardened for an H900 standard to an average of 39 to 44 Rc (375-415 BHN). Chain pins shall be non-rotating, and designed to be inserted by hand without applying mechanical force. Chain pins that are press fit into the chain sidebars, or that use rivets, or other methods to mechanically lock the chain pin in place are not acceptable. Chain pins and link designs that require the application of mechanical force for assembly are not acceptable.

Chain cotter pins shall be 316 series stainless steel. All links shall be the P&C design with removable pins and removable cotters; riveted chain pin designs are not acceptable. Chains will be assembled by the manufacturer and shipped in 10 foot long, 46-link sections.

Drive chain designs shall have a minimum of 10 years demonstrated experience successfully operating in submerged water and/or wastewater treatment applications within the continental United States. All drive chain components shall be manufactured and assembled in the U.S.A. Drive chains shall be DuraMax H78 15-5/17-4 SS as manufactured by Environmental Resources, Inc., Pewaukee, WI.

DuraMax chains shall be free of defects in materials and workmanship FOR A PRORATED PERIOD OF TEN (10) YEARS from the date of final inspection for all applications that are designed, installed, inspected, operated and maintained according to ERx, Inc. and general industry standards. DuraMax Chains shall be properly installed and operated on compatible DuraMax or equal high-grade sprocket materials, including polymeric materials (75 Shore D polyurethane, Nylon-6 and UHMW-PE), stainless steel, or other materials that will provide a uniform and balanced wear with the chains, and which will not suffer from Spalling, galling, corrosion-erosion, or cold-flow of the sprocket materials during the warranty period.

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## **EXTREME-DUTY H78-2 316SS DRIVE CHAINS**

**(US PATENTS 7,237,375 B2 and 7,343,730 B2)  
(CANADIAN PATENT 2,519,653)**

Chain materials and design shall meet or exceed ASME B29.400-2001 standards for H Type Drive Chains and Sprockets. Drive chain links shall be investment cast H78 series 316 (UNS J92900/ACI CF8M) stainless steel alloy, cleaned, pickled and passivated per ASTM A380-06 and ASTM A967-05e1, having 2.609" pitch links with an average weight of 15 oz. per link and 4.3 pounds per foot. Fabricated and/or welded chain designs are not acceptable. Chain links and pins manufactured from 400 series stainless steel are not acceptable. All chain links and pins will be passivated, smooth and free from casting burrs, voids and material defects, and shall maintain a +/- .010" uniform dimensional tolerance between each individual link and link component. Chains shall be interchangeable with all H78, NH78, 988, 488 and 188 drive chains, and shall meet or exceed all American and foreign industry standards for hardness, tensile strength, corrosion resistance and durability in continuous severe duty and extreme duty service.

The chain shall have a 7/8" diameter barrel O.D.'s, and minimum .370" thick by 1.13" high sidebars. Chain sidebars at the pin boss (open end of the link) shall have a minimum .440" thick by 1.13" high sidebar dimension. The drive chain shall have a certified average ultimate strength of 28,320 pounds, a design working load of 2,830 pounds, and a maximum working load of 3,540 pounds. Chains shall be suitable for operating on either cast, fabricated or non-metallic sprockets.

The chain shall be assembled with 1/2" diameter investment cast 17-4pH (UNS J92180/ACI CB7Cu1) precipitation hardening martensitic stainless steel pins, heat-treated and through hardened for an H900 standard to an average of 39 to 44 Rc (375-415 BHN). Chain pins shall be non-rotating, and designed to be inserted by hand without applying mechanical force. Chain pins that are press fit into the chain sidebars, or that use rivets, or other methods to mechanically lock the chain pin in place are not acceptable. Chain pins and link designs that require the application of mechanical force for assembly are not acceptable.

Chain cotter pins shall be 316 series stainless steel. All links shall be the P&C design with removable pins and removable cotters; riveted chain pin designs are not acceptable. Chains will be assembled by the manufacturer and shipped in 10 foot long, 46-link sections.

Drive chain designs shall have a minimum of 10 years demonstrated experience successfully operating in submerged water and/or wastewater treatment applications within the continental United States. All drive chain components shall be manufactured and assembled in the U.S.A. Drive chains shall be DuraMax H78-316/17-4 SS as manufactured by Environmental Resources, Inc., Pewaukee, WI.

DuraMax chains shall be free of defects in materials and workmanship FOR A PRORATED PERIOD OF TEN (10) YEARS from the date of final inspection for all applications that are designed, installed, inspected, operated and maintained according to ERx, Inc. and general industry standards. DuraMax Chains shall be properly installed and operated on compatible DuraMax or equal high-grade sprocket materials, including polymeric materials (75 Shore D polyurethane, Nylon-6 and UHMW-PE), stainless steel, or other materials that will provide a uniform and balanced wear with the chains, and which will not suffer from Spalling, galling, corrosion-erosion, or cold-flow of the sprocket materials during the warranty period.

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## **EXTREME-DUTY H82/C9103 DRIVE CHAINS**

(US PATENTS 7,237,375 B2 and 7,343,730 B2)

(CANADIAN PATENT 2,519,653)

Chains shall be investment cast H82 series 15-5/17-4 PH SS alloy\*, having one-piece 3.075" pitch links with an average weight of 26 oz. per link and 6.3 pounds per foot. Chain links and pins shall be heat-treated and through hardened to an average of 39 to 44 Rc, and be cleaned, pickled and passivated per ASTM A380-06 and ASTM A967-05e1. Fabricated and welded chain designs are not acceptable.

Chain links and pins manufactured from lower grades of stainless steel are not acceptable. All chain links and pins will be passivated, smooth and free from casting burrs, voids and material defects, and shall maintain a +/- .010" uniform dimensional tolerance between each individual link and link component. Chains shall be manufactured per ASME B29.14M-2001, and shall be interchangeable with all H82, NH82, 4103 and C9103 drive chains, and shall meet or exceed all American and foreign industry standards for hardness, tensile strength, corrosion resistance and durability in continuous water-lubricated severe duty and extreme duty service.

The chain links shall have a 1.220" diameter barrel O.D.'s, and minimum .375" thick by 1.50" high sidebars. Chain sidebars at the pin boss (open end of the link) shall have a minimum .625" thick by 1.50" high sidebar dimension. The chain shall have a certified average strength of 53,000 pounds, a design working load of 4,400 pounds, and a maximum working load of 6,200 pounds. Chains shall be suitable for operating on either cast, fabricated or non-metallic sprockets.

The chain shall be assembled with minimum 5/8" diameter investment cast 17-4 PH stainless steel pins, heat-treated and through-hardened to an average of 39 to 44 Rc. Chain pins shall be designed to be fixed (non-rotating), and shall be designed to be inserted into the link sidebars without applying mechanical force. Chain pins that are press fit into the chain sidebars, or that use press-fit T-heads, rivets, or other non-rotational devices to lock the chain pin in place are not acceptable. Chain pins and chain link designs that require the application of mechanical force for assembly are not acceptable.

Chain cotter pins shall be 316 series stainless steel. All links shall be P&C design with removable pins and removable cotters; riveted chain pin designs are not acceptable. Chains will be assembled by the manufacturer and shipped in 10 foot long (39 link) sections.

Drive chains shall have a minimum of 5 years demonstrated experience successfully operating in submerged water and/or wastewater treatment applications within the continental United States. All drive chain components shall be manufactured and assembled in the U.S.A. Chains shall be DuraMax H82 15-5/17-4 PH SS as manufactured by Environmental Resources, Inc., Pewaukee, WI.

DuraMax chains shall be free of defects in materials and workmanship FOR A PRORATED PERIOD OF UP TO TEN (10) YEARS from the date of final inspection for all applications that are designed, installed, inspected, operated and maintained according to the standards of ERx, Inc., and generally accepted industry standards. DuraMax Chains shall be properly installed and operated on DuraMax sprockets, such as high-grade polymeric sprockets (75 Shore D polyurethane, Nylon-6 and UHMW-PE), cast or fabricated stainless steel, or other approved materials that will provide a uniform and balanced wear with the chains, and which will not suffer from spalling, galling, corrosion-erosion, or cold-flow of the sprocket materials during the warranty period.

(\*Also available in 316SS, sea water resistant S32205, and other custom alloys.)

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