

**Manufacturers & Stockists of Nickel Alloy, Titanium Alloys, Special Metals & Stainless Steel Products**

## BOLTS

**Jade Special Metals** is a trusted manufacturer of premium hex bolts, serving industries like oil & gas, construction, power generation, and aerospace. We produce hex bolts in carbon steel, alloy steel, stainless steel, and specialty metals like Inconel, Hastelloy, and Titanium, adhering to ASTM, ASME, DIN, and ISO standards. Our products undergo strict quality checks, ensuring durability and performance in demanding environments. We offer custom-engineered hex bolts based on client specifications, providing tailored fastening solutions. With expert technical support, on-time delivery, and global supply capabilities, Jade Special Metals is your reliable partner for high-performance hex bolt solutions.



### SPECIFICATIONS

- **Bolt Type:** Hex Bolt, Heavy Hex Bolt, Square Head Bolt, Hex Flange Bolt, Square Head Bolt
- **Stud Bolt Type:** Full Threaded Stud, Double End Threaded Stud
- **Special Bolt Type:** Allen Head Cap Screw, Socket Head Cap Screw, Low Socket Head Cap Screw, Shoulder Bolt, Carriage Bolt, Countersunk Bolt, Eye Bolts, U-Bolts.
- **Forming:** Hot Forged or Cold Forged
- **Metric Size:** M2 to M100
- **Inch Size:** 1/8" to 4"
- **Threads:** UNC, UNF, BSW, ISO, ACME
- **Standards:** ASTM, ASME, BS, ISO, DIN, DIN-EN, UNI
- **Heat Treatments:** Annealing, Stress Relieving, Case Hardening, Quenching & Tempering
- **Surface Coatings:** Xylan, Xylar, PTFE, Zinc Plating, Phosphating, Galvanizing, Hot Dip Galvanizing (HDG), Nickel Plating, Zn-Ni Plating, Chrome Plating, Cadmium Plating, Zinc Flake Coating

### HEX BOLTS

A **hex bolt** is a six-sided fastener with a threaded body, designed for securely fastening materials in construction, machinery, automotive, and industrial applications. Its hexagonal head allows easy tightening using standard tools like wrenches or spanners, ensuring a strong and reliable connection. Hex bolts come in various sizes, materials such as carbon steel, stainless steel, and alloy steel, and feature different finishes like zinc plating, galvanization, and black oxide for corrosion resistance. They are available in both fully and partially threaded designs to suit specific application needs.



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### HEAVY HEX BOLTS

**Heavy Hex Bolts** are large, high-strength fasteners with a hexagonal head, designed for heavy-duty applications that require enhanced load-bearing capacity and durability. Commonly used in construction, machinery, infrastructure, and industrial sectors, they provide secure fastening in demanding environments. Made from materials like carbon steel, alloy steel, or stainless steel, heavy hex bolts are ideal for withstanding extreme forces. Their larger heads allow for better torque application, and they are often coated with corrosion-resistant finishes like zinc plating. Manufactured to meet standards such as ASTM A325 and A490, these bolts are reliable for securing critical structures and machinery.



### STUD BOLTS – FULL THREADED

**Stud bolts** are fully threaded fasteners with no head, designed for use in flanged connections, piping systems, and structural applications. They are typically paired with two heavy hex nuts for secure assembly. Available in various sizes, lengths, and materials, including carbon steel, stainless steel, and high-performance alloys, stud bolts offer exceptional tensile strength, durability, and corrosion resistance. Common standards include ASTM A193, A320, and ASME B16.5, ensuring compatibility with industry requirements. Stud bolts are ideal for high-pressure and high-temperature environments, making them essential in industries such as oil & gas, petrochemicals, and power generation. Custom lengths and coatings are also available.



### DOUBLE END THREADED STUD BOLTS

**Double-end threaded stud bolts** have threads on both ends with an unthreaded shank in the middle, offering secure fastening for a variety of industrial applications. They are commonly used in flanged connections, machinery, and structural assemblies requiring high strength and precision. Manufactured from materials like carbon steel, stainless steel, and specialty alloys, they provide excellent tensile strength, durability, and corrosion resistance. Conforming to standards such as ASTM A193, A320, and ASME B16.5, these bolts are suitable for high-pressure, high-temperature environments in industries like oil & gas, petrochemicals, and power plants. Custom lengths, coatings, and finishes are available to meet specific project requirements.



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### SOCKET HEAD CAP SCREW

**Socket head cap screws** are high-strength fasteners with a cylindrical head and internal hexagonal drive, providing a secure, flush fit. Commonly used in machinery, automotive, and aerospace applications, they enable precision assembly in tight spaces. Made from materials like alloy steel, stainless steel, and exotic alloys, they offer superior tensile strength, corrosion resistance, and wear durability. These screws conform to international standards such as ASTM, ISO, and DIN, ensuring consistent performance and compatibility. Available in various sizes, thread types, and finishes, socket head cap screws are ideal for critical applications where strength, reliability, and a clean, professional appearance are essential.



### ALLEN HEAD CAP SCREW

**Allen head cap screws** are precision-engineered fasteners featuring a hexagonal recessed drive, allowing installation with an Allen wrench for a secure, flush fit. Known for their high tensile strength and durability, they are widely used in automotive, machinery, and industrial applications requiring a clean, professional appearance. Manufactured from materials like alloy steel, stainless steel, and specialty alloys, these screws offer excellent corrosion resistance and load-bearing capacity. They comply with industry standards such as ASTM, ISO, and DIN for reliability and quality assurance. Available in various sizes, threads, and finishes, Allen head cap screws are ideal for tight spaces and precision assemblies.



### Countersunk Bolts

**Countersunk screws** are precision fasteners designed with a flat, conical head that sits flush with the surface when installed, creating a smooth, seamless finish. Commonly used in applications requiring a clean appearance, such as furniture, electronics, and machinery, they provide secure fastening while reducing snagging or obstruction risks. Available in materials like carbon steel, stainless steel, and specialty alloys, they offer excellent strength, corrosion resistance, and durability. Countersunk screws come in various head styles, including Phillips, slotted, and hex drives, conforming to international standards such as ASTM, ISO, and DIN. They ensure reliable performance in structural and decorative applications alike.





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### SHOULDER BOLT

**Shoulder bolts**, also known as stripper bolts, feature a cylindrical, smooth shaft (shoulder) between the head and threaded portion. This design allows precise alignment and controlled movement in mechanical assemblies. Commonly used in automotive, aerospace, and industrial machinery, shoulder bolts are ideal for rotating or sliding applications such as pulleys, gears, and linkages. They are manufactured from materials like stainless steel, alloy steel, and high-performance alloys for superior strength, wear resistance, and corrosion protection. Conforming to standards like ASTM, ISO, and DIN, they are available in various sizes, shoulder lengths, and thread types, ensuring reliable performance in precision engineering and heavy-duty applications.



### SQUARE HEAD BOLTS

**Square head bolts** are sturdy fasteners with a four-sided head, providing a large gripping surface for secure tightening with wrenches or pliers. Their simple, robust design makes them ideal for heavy-duty applications in construction, woodworking, and industrial machinery. The square head prevents slippage during installation and allows easy tool access in tight spaces. Manufactured from materials like carbon steel, stainless steel, and alloy steel, they offer excellent strength, durability, and corrosion resistance. Square head bolts conform to standards such as ASTM, ISO, and DIN, ensuring precise dimensions and performance reliability. Custom sizes, thread types, and coatings are also available for specialized applications.



### CONCRETE WEDGE ANCHOR BOLT

**Concrete wedge anchor bolts** are heavy-duty mechanical fasteners designed for securing objects to concrete surfaces. They feature a threaded bolt, an expansion clip, a nut, and a washer. During installation, the anchor is inserted into a pre-drilled hole, and tightening the nut causes the expansion clip to wedge against the concrete, creating a strong, permanent hold. Made from materials like carbon steel, stainless steel, and zinc-plated steel, they offer excellent tensile strength, corrosion resistance, and durability. Commonly used in construction, structural reinforcement, and industrial installations, they comply with standards such as ASTM and ISO. Various sizes and finishes are available for specific load requirements.



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### CARRIAGE BOLT

**Carriage bolts** are distinctive fasteners with a round, domed head and a square neck beneath them. The square neck locks into place when inserted into a pre-drilled hole, preventing rotation during tightening. This design makes them ideal for wooden and metal structures where a smooth, finished appearance is desired. Common applications include decks, fences, and heavy-duty construction projects. Made from materials like carbon steel, stainless steel, and galvanized steel, they offer excellent strength, corrosion resistance, and long-term durability. Carriage bolts conform to standards such as ASTM, ISO, and DIN. They are available in various sizes, thread types, and finishes for versatile use.



### U-BOLT

**U-bolts** are U-shaped fasteners with threads on both ends, designed for securing pipes, cables, or structural elements to surfaces or other components. The curved shape provides a secure grip around round or cylindrical objects, making them ideal for use in plumbing, automotive, and construction applications. U-bolts are commonly used to attach pipes to brackets, mount machinery, or fasten components to beams or walls. They are typically made from carbon steel, stainless steel, and galvanized steel, offering excellent strength and corrosion resistance. Available in various sizes, thread types, and coatings, U-bolts conform to standards such as ASTM and ISO for reliable performance.



### J-BOLT

**J-bolts** are shaped like the letter "J" and are commonly used for securing or anchoring objects to the surface. One end of the bolt features a hook or loop, while the other end is threaded for secure fastening with nuts or washers. J-bolts are typically used in concrete, masonry, or construction applications to anchor structures such as beams, posts, or equipment to a foundation. Made from materials like carbon steel, stainless steel, or galvanized steel, J-bolts offer strong tensile strength, durability, and corrosion resistance. They are available in various sizes, thread types, and finishes to meet specific project needs and standards.



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**EYE-BOLT**

**Eye bolts** are fasteners with a circular loop (or "eye") at one end and a threaded shaft at the other, designed for lifting, securing, or fastening applications. The loop allows for easy attachment of hooks, ropes, or cables, making them ideal for lifting heavy loads, rigging, and securing objects in construction, marine, and industrial applications. Eye bolts come in different configurations, including regular, shoulder, and lifting eye bolts, each suited for specific tasks. Made from materials such as carbon steel, stainless steel, or alloy steel, they offer high tensile strength, corrosion resistance, and durability. Eye bolts conform to standards like ASTM, ISO, and DIN.



**DUPLEX & SUPER DUPLEX MATERIAL GRADES**

DUPLEX 31803 UNS: S31803 Werkstoff: 1.4462	DUPLEX 32205 UNS: S32205 Werkstoff: 1.4462	SUPER DUPLEX 32750 UNS: S32750 Werkstoff: 1.4410
SUPER DUPLEX 32760 UNS: S32760 Werkstoff: 1.4501	SUPER DUPLEX 2507 UNS: S25007 Werkstoff: 1.4410	

**STAINLESS STEEL MATERIAL GRADES**

STAINLESS STEEL 304 UNS: S30400 Werkstoff: 1.4301	STAINLESS STEEL 304L UNS: S30403 Werkstoff: 1.4306	STAINLESS STEEL 304H UNS: S30409 Werkstoff: 1.4948
STAINLESS STEEL 316 UNS: S31600 Werkstoff: 1.4401	STAINLESS STEEL 316L UNS: S31603 Werkstoff: 1.4404	STAINLESS STEEL 316H UNS: S31609 Werkstoff: 1.4919
STAINLESS STEEL 309 UNS: S30900 Werkstoff: 1.4828	STAINLESS STEEL 310 UNS: S31000 Werkstoff: 1.4840	STAINLESS STEEL 310S UNS: S31008 Werkstoff: 1.4845
STAINLESS STEEL 317L UNS: S31703 Werkstoff: 1.4438	STAINLESS STEEL 347 UNS: S34700 Werkstoff: 1.4550	STAINLESS STEEL 347H UNS: S34709 Werkstoff: 1.4961
STAINLESS STEEL 409 UNS: S40900 Werkstoff: 1.4512	STAINLESS STEEL 409M UNS: S40977 Werkstoff: 1.4513	STAINLESS STEEL 410M UNS: S41008 Werkstoff: 1.4000
STAINLESS STEEL 446 UNS: S44600 Werkstoff: 1.4749	STAINLESS STEEL 904L UNS: N08904 Werkstoff: 1.4539	

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## NICKEL ALLOYS MATERIAL GRADES

HASTELLOY C22 UNS: N06022 Werkstoff: 2.4602	HASTELLOY C276 UNS: N10276 Werkstoff: 2.4819	HASTELLOY B2 UNS: N10665 Werkstoff: 2.4617
NICKEL 200 UNS: N02200 Werkstoff: 2.4060	NICKEL 201 UNS: N02201 Werkstoff: 2.4068	
MONEL 400 UNS: N04400 Werkstoff: 2.4360	MONEL K500 UNS: N05500 Werkstoff: 2.4375	
INCONEL 600 UNS: N06600 Werkstoff: 2.4816	INCONEL 601 UNS: N06601 Werkstoff: 2.4851	INCONEL 625 UNS: N06625 Werkstoff: 2.4856
INCONEL 718 UNS: N07718 Werkstoff: 2.4668	INCONEL 800 UNS: N08800 Werkstoff: 1.4876	INCONEL 800H UNS: N08810 Werkstoff: 1.4958
INCONEL 617 UNS: N06617 Werkstoff: 2.4663	INCONEL X-750 UNS: N07750 Werkstoff: 2.4669	INCONEL 800HT UNS: N08811 Werkstoff: 1.4959
INCONEL 825 UNS: N08825 Werkstoff: 2.4858	ALLOY 20 UNS: N08020 Werkstoff: 2.4660	
TITANIUM GRADE 2 UNS: R50400 Werkstoff: 3.7025	TITANIUM GRADE 5 UNS: R56400 Werkstoff: 3.7165	TITANIUM GRADE 7 UNS: R52400 Werkstoff: 3.7235

## ASTM / ASME MATERIAL GRADES

A193 GRADE B5	A193 GRADE B6	A193 GRADE B6X
A193 GRADE B7	A193 GRADE B7M	A193 GRADE B16
A193 GRADE B8 CL.1	A193 GRADE B8 CL.2	A193 GRADE B8A
A193 GRADE B8M CL.1	A193 GRADE B8M CL.2	A193 GRADE B8MA
A193 GRADE B8C CL.1	A193 GRADE B8C CL.2	A193 GRADE B8CA
A193 GRADE B8MLCuN CL.1	A193 GRADE B8MLCuN CL.2	A193 GRADE B8MLCuNA
A193 GRADE B8T CL.1	A193 GRADE B8T CL.2	A193 GRADE B8TA
A193 GRADE B8R	A193 GRADE B8S	
A320 GRADE L7	A320 GRADE L7M	A320 GRADE L43
A320 GRADE B8 CL.1	A320 GRADE B8 CL.2	A320 GRADE B8A
A320 GRADE B8M CL.1	A320 GRADE B8M CL.2	A320 GRADE B8MA



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A320 GRADE B8C CL.1	A320 GRADE B8C CL.2	A320 GRADE B8CA
A320 GRADE B8TCL.1	A320 GRADE B8T CL.2	A320 GRADE B8TA
A320 GRADE B8F CL.1	A320 GRADE B8F CL.2	A320 GRADE B8FA
A320 GRADE B8C CL.1	A320 GRADE B8C CL.2	A320 GRADE B8CA
ASTM F3125 A325 TYPE 1	ASTM F3125 A325 TYPE 3	
ASTM F3125 A325M TYPE 1	ASTM F3125 A325M TYPE 3	
ASTM F3125 A490 TYPE 1	ASTM F3125 A490 TYPE 3	
ASTM F3125 A490M TYPE 1	ASTM F3125 A490M TYPE 3	
ASTM A307 GRADE A	ASTM A307 GRADE B	
ASTM A354 GRADE BD	ASTM A354 GRADE BC	
ASTM A453 GRADE 660A	ASTM A453 GRADE 660B	ASTM A453 GRADE 660C
ASTM F593A	ASTM F593B	ASTM F593C
ASTM F593D	ASTM F593E	ASTM F593F
ASTM F593G	ASTM F593H	ASTM F593J
ASTM F593K	ASTM F593L	ASTM F593M
ASTM F593X	ASTM F593N	ASTM F593V
ASTM F593W	ASTM F593P	ASTM F593R
ASTM F593S	ASTM F593T	ASTM F593U



We offer a wide range of Material Grades as per SAE / EN / DIN Etc. At best Market prices in India. To know more about complete product details please feel free to contact us on [sales@jadealloys.com](mailto:sales@jadealloys.com) or call us on +91 9987685906



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## NUTS

**Jade Special Metals** offers a comprehensive range of nuts designed for industrial and structural applications. **Hex nuts** feature six flat sides for a secure grip and easy tightening. **Dome nuts** have a rounded top to protect threads and provide a polished appearance. **Nylock nuts** include a nylon insert, offering vibration resistance and preventing loosening. **Thin nuts**, also known as **jam nuts**, are slim and ideal for locking applications in compact spaces. Manufactured in ferrous and non-ferrous metals, including stainless steel, nickel alloys, and copper alloys, our products comply with ASTM, ASME, PN, and EN standards for durability and precision.



### SPECIFICATIONS

- **Nut Type:** Hex Nut, Heavy Hex Nut, Square Nut, Jam Nut, Nylock Nut, Dome Nut, Flange Nut, Wing Nut, Cap Nut, Coupling Nut, Castle Nut / Slotted Nut, T-Nut, Self Locking Nut
- **Forming:** Hot Forged or Cold Forged
- **Metric Size:** M2 to M100
- **Inch Size:** 1/8" to 4"
- **Threads:** UNC, UNF, BSW, ISO, ACME
- **Standards:** ASTM, ASME, BS, ISO, DIN, DIN-EN, UNI
- **Heat Treatments:** Annealing, Stress Relieving, Case Hardening, Quenching & Tempering
- **Surface Coatings:** Xylan, Xylar, PTFE, Zinc Plating, Phosphating, Galvanizing, Hot Dip Galvanizing (HDG), Nickel Plating, Zn-Ni Plating, Chrome Plating, Cadmium Plating, Zinc Flake Coating

### HEX NUTS

**Hex Nuts** by **Jade Special Metals** are versatile six-sided fasteners designed for secure and durable connections in industrial, structural, and mechanical applications. Manufactured in **ferrous metals**, **stainless steel**, **nickel alloys** (Titanium, Inconel, Hastelloy), **copper alloys**, and **cupro-nickel alloys**, they provide exceptional strength and corrosion resistance. Hex nuts are compatible with bolts, screws, and studs, ensuring tight, vibration-resistant assemblies. Available in **ASTM**, **ASME**, **PN**, and **EN** standards, they support heavy loads and high-pressure environments. Precision-engineered with standard and fine threading options, they offer easy installation and removal. Custom sizes and coatings are also available to meet specific project requirements.



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### HEAVY HEX NUTS

**Heavy Hex Nuts** by Jade Special Metals are robust, six-sided fasteners with a larger width and thickness than standard hex nuts, providing superior strength for high-pressure and heavy-load applications. Manufactured from **ferrous metals, stainless steel, nickel alloys** (Titanium, Inconel, Hastelloy), **copper alloys**, and **cupro-nickel alloys**, they ensure excellent durability and corrosion resistance. Designed for use in structural, industrial, and high-temperature environments, these nuts meet **ASTM, ASME, PN, and EN** standards. Available in coarse and fine threading, they are compatible with large-diameter bolts and studs. Custom sizes, coatings, and finishes are offered to meet specialized project requirements.



### SQUARE NUTS

**Square nuts** by Jade Special Metals are high-quality fasteners designed for optimal **strength and durability**. Manufactured from a variety of materials, including **ferrous and non-ferrous metals** such as **stainless steel, brass**, and custom alloys, they provide excellent performance in demanding applications. Our square nuts are **precision-engineered** to fit standard **bolt threads**, adhering to **ASTM, ASME**, and other relevant standards. These nuts are ideal for use in **structural systems, machinery**, and **heavy-duty applications** where secure fastening is critical. With superior resistance to **wear and corrosion**, Jade Special Metals' square nuts offer **reliability**, long-term performance, and **customization options** per customer requirements.



### JAM NUTS / LOW NUTS

**Jam nuts (or low nuts)** by Jade Special Metals are compact, high-strength fasteners designed for securing bolts and preventing loosening due to vibration or external forces. Made from a variety of **ferrous and non-ferrous materials**, including **stainless steel, brass**, and custom alloys, these nuts provide **enhanced durability and corrosion resistance**. Jam nuts are engineered to fit **standard bolt threads** and adhere to **ASTM, ASME**, and other relevant standards. Commonly used in **machinery, construction**, and **automotive applications**, they are ideal for **tight spaces and heavy-duty environments**. Jade Special Metals' jam nuts offer **reliable performance** and **customized solutions** to meet specific customer needs.



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### NYLOCK NUTS

Nylock nuts by Jade Special Metals are **self-locking fasteners** designed to prevent loosening under vibration and dynamic loads. Featuring a **nylon insert** that grips the bolt threads, these nuts offer superior **torque resistance** and secure fastening. Made from a variety of **ferrous and non-ferrous materials**, including **stainless steel, brass**, and custom alloys, Nylock nuts provide **corrosion resistance** and **long-term durability**. They are manufactured to meet **ASTM, ASME**, and other relevant standards, making them suitable for **machinery, automotive, aerospace**, and **industrial applications**. Jade Special Metals' Nylock nuts offer **reliable performance, vibration resistance**, and **customized solutions** to meet specific requirements.



### DOME NUTS

Dome nuts by Jade Special Metals are **rounded, closed-end fasteners** designed to provide a neat, aesthetically pleasing finish while offering **protection** to the bolt threads. Made from high-quality **ferrous and non-ferrous materials**, including **stainless steel, brass**, and custom alloys, they provide excellent **corrosion resistance** and **durability**. Dome nuts are commonly used in **automotive, construction**, and **machinery** applications, offering both a **functional** and **decorative** solution. Manufactured to meet **ASTM, ASME**, and other relevant standards, Jade Special Metals' dome nuts ensure **secure fastening, protection** from contaminants, and **customized solutions** to suit specific customer needs.



### FLANGE NUTS

Flange nuts by Jade Special Metals are **high-strength fasteners** designed with an integrated **flange** that provides additional **surface area** for better load distribution and **prevents damage** to the mating surface. Made from a variety of **ferrous and non-ferrous materials**, including **stainless steel, brass**, and custom alloys, they offer superior **corrosion resistance** and **durability**. Flange nuts are commonly used in **machinery, automotive**, and **structural** applications where a **secure grip** and **increased stability** are required. Manufactured to meet **ASTM, ASME**, and other relevant standards, Jade Special Metals' flange nuts offer **reliable performance, enhanced grip**, and **customized solutions** for various applications.





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### WING NUTS

Wing nuts by Jade Special Metals are easily adjustable fasteners designed with wing-like extensions for manual tightening or loosening without the need for tools. Made from high-quality ferrous and non-ferrous materials, including stainless steel, brass, and custom alloys, these nuts provide reliable performance, corrosion resistance, and durability. Wing nuts are ideal for applications requiring frequent assembly and disassembly, such as in machinery, automotive, electronics, and maintenance settings. Manufactured to meet ASTM, ASME, and other relevant standards, Jade Special Metals' wing nuts offer easy handling, quick fastening, and customized solutions for diverse industrial and commercial needs.



### COUPLING NUTS

Coupling nuts by Jade Special Metals are long, cylindrical fasteners designed to connect or extend bolts or threaded rods. Made from high-quality ferrous and non-ferrous materials, including stainless steel, brass, and custom alloys, they provide strength, reliability, and corrosion resistance. Coupling nuts are commonly used in machinery, construction, and plumbing applications where secure, extended connections are needed. Manufactured to meet ASTM, ASME, and other relevant standards, Jade Special Metals' coupling nuts offer precision threading, versatility, and customized solutions to meet specific customer requirements, ensuring long-lasting performance in various industrial applications.



### SLOTTED NUTS / CASTLE NUTS

Slotted nuts (or castle nuts) by Jade Special Metals are designed with slots on their outer circumference to secure cotter pins or safety pins, ensuring a tight fit and preventing loosening under vibration or stress. Made from high-quality ferrous and non-ferrous materials, including stainless steel, brass, and custom alloys, they provide excellent corrosion resistance, durability, and secure fastening. Commonly used in automotive, machinery, and aerospace applications, slotted nuts are ideal for critical and safety-sensitive components. Manufactured to meet ASTM, ASME, and other relevant standards, Jade Special Metals' slotted nuts offer reliable performance, secure connections, and customized solutions to meet specific application needs.





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### T-NUTS

T-nuts by Jade Special Metals are specialized fasteners designed with a T-shaped profile that allows them to easily fit into wood, metal, or plastic materials. They provide a strong, secure anchor for bolts or screws, offering a flush finish and resistance to loosening. Manufactured from high-quality ferrous and non-ferrous materials, including stainless steel, brass, and custom alloys, T-nuts offer corrosion resistance, strength, and durability. Commonly used in furniture, machinery, and construction, they provide quick assembly and strong fastening. Manufactured to meet ASTM, ASME, and other relevant standards, Jade Special Metals' T-nuts offer reliable performance and customized solutions for various applications.



### SELF LOCKING NUTS

Self-locking nuts by Jade Special Metals are designed to prevent loosening under vibration and dynamic loads without the need for additional locking devices. These nuts feature an integrated locking mechanism, such as a nylon insert or a deformed thread, to provide a secure and vibration-resistant connection. Made from high-quality ferrous and non-ferrous materials, including stainless steel, brass, and custom alloys, self-locking nuts offer corrosion resistance, strength, and durability. They are commonly used in automotive, machinery, aerospace, and construction applications. Manufactured to meet ASTM, ASME, and other relevant standards, Jade Special Metals' self-locking nuts provide reliable performance and customized solutions for various industrial and commercial needs.



### CAGE NUTS

Cage nuts by Jade Special Metals are fastening solutions designed to provide secure connections in rack-mount or panel applications. These nuts are encased in a metal cage, which helps them snap into place in pre-punched holes, offering quick installation and a secure fit. Made from high-quality ferrous and non-ferrous materials, including stainless steel, brass, and custom alloys, cage nuts offer corrosion resistance, strength, and reliability. They are commonly used in electrical enclosures, servers, and telecommunication equipment. Manufactured to meet ASTM, ASME, and other relevant standards, Jade Special Metals' cage nuts provide easy installation, secure fastening, and customized solutions for a wide range of applications.



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**SPRING NUTS**

Spring nuts by Jade Special Metals are flexible fasteners designed to provide a **strong, vibration-resistant** connection. Featuring a **spring mechanism**, they automatically adjust to the required thread size, ensuring a secure fit even in fluctuating conditions. Made from high-quality **ferrous** and **non-ferrous materials**, including **stainless steel, brass**, and custom alloys, **spring nuts** offer **corrosion resistance, strength, and durability**. They are commonly used in **machinery, automotive**, and **electrical** applications where **flexibility** and **secure fastening** are crucial. Manufactured to meet **ASTM, ASME**, and other relevant standards, **Jade Special Metals' spring nuts** provide **reliable performance, vibration resistance, and customized solutions** for various industries.



**DUPLEX & SUPER DUPLEX MATERIAL GRADES**

DUPLEX 31803 UNS: S31803 Werkstoff: 1.4462	DUPLEX 32205 UNS: S32205 Werkstoff: 1.4462	SUPER DUPLEX 32750 UNS: S32750 Werkstoff: 1.4410
SUPER DUPLEX 32760 UNS: S32760 Werkstoff: 1.4501	SUPER DUPLEX 2507 UNS: S25007 Werkstoff: 1.4410	

**STAINLESS STEEL MATERIAL GRADES**

STAINLESS STEEL 304 UNS: S30400 Werkstoff: 1.4301	STAINLESS STEEL 304L UNS: S30403 Werkstoff: 1.4306	STAINLESS STEEL 304H UNS: S30409 Werkstoff: 1.4948
STAINLESS STEEL 316 UNS: S31600 Werkstoff: 1.4401	STAINLESS STEEL 316L UNS: S31603 Werkstoff: 1.4404	STAINLESS STEEL 316H UNS: S31609 Werkstoff: 1.4919
STAINLESS STEEL 309 UNS: S30900 Werkstoff: 1.4828	STAINLESS STEEL 310 UNS: S31000 Werkstoff: 1.4840	STAINLESS STEEL 310S UNS: S31008 Werkstoff: 1.4845
STAINLESS STEEL 317L UNS: S31703 Werkstoff: 1.4438	STAINLESS STEEL 347 UNS: S34700 Werkstoff: 1.4550	STAINLESS STEEL 347H UNS: S34709 Werkstoff: 1.4961
STAINLESS STEEL 409 UNS: S40900 Werkstoff: 1.4512	STAINLESS STEEL 409M UNS: S40977 Werkstoff: 1.4513	STAINLESS STEEL 410M UNS: S41008 Werkstoff: 1.4000
STAINLESS STEEL 446 UNS: S44600 Werkstoff: 1.4749	STAINLESS STEEL 904L UNS: N08904 Werkstoff: 1.4539	

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## NICKEL ALLOYS MATERIAL GRADES

HASTELLOY C22 UNS: N06022 Werkstoff: 2.4602	HASTELLOY C276 UNS: N10276 Werkstoff: 2.4819	HASTELLOY B2 UNS: N10665 Werkstoff: 2.4617
NICKEL 200 UNS: N02200 Werkstoff: 2.4060	NICKEL 201 UNS: N02201 Werkstoff: 2.4068	
MONEL 400 UNS: N04400 Werkstoff: 2.4360	MONEL K500 UNS: N05500 Werkstoff: 2.4375	
INCONEL 600 UNS: N06600 Werkstoff: 2.4816	INCONEL 601 UNS: N06601 Werkstoff: 2.4851	INCONEL 625 UNS: N06625 Werkstoff: 2.4856
INCONEL 718 UNS: N07718 Werkstoff: 2.4668	INCONEL 800 UNS: N08800 Werkstoff: 1.4876	INCONEL 800H UNS: N08810 Werkstoff: 1.4958
INCONEL 617 UNS: N06617 Werkstoff: 2.4663	INCONEL X-750 UNS: N07750 Werkstoff: 2.4669	INCONEL 800HT UNS: N08811 Werkstoff: 1.4959
INCONEL 825 UNS: N08825 Werkstoff: 2.4858	ALLOY 20 UNS: N08020 Werkstoff: 2.4660	
TITANIUM GRADE 2 UNS: R50400 Werkstoff: 3.7025	TITANIUM GRADE 5 UNS: R56400 Werkstoff: 3.7165	TITANIUM GRADE 7 UNS: R52400 Werkstoff: 3.7235

## ASTM / ASME MATERIAL GRADES

A194 GRADE 2H	A194 GRADE 2HM	A194 GRADE 4
A194 GRADE 4L	A194 GRADE 7	A194 GRADE 7M
A194 GRADE 7ML	A194 GRADE 7L	A194 GRADE 6
A194 GRADE 8	A194 GRADE 8A	A194 GRADE 8C
A194 GRADE 8CA	A194 GRADE 8M	A194 GRADE 8MA
A194 GRADE 8T	A194 GRADE 8TA	A194 GRADE 8F
A194 GRADE 8FA	A194 GRADE 8R	A194 GRADE 8RA
A194 GRADE 8S	A194 GRADE 8SA	A194 GRADE 8MLCUN
A194 GRADE 8MLCUNA	A194 GRADE 16	

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ASTM A563 GRADE O	ASTM A563 GRADE A	ASTM A563 GRADE B
ASTM A563 GRADE C	ASTM A563 GRADE D	ASTM A563 GRADE DH
ASTM A563 GRADE DH3		
ASTM F594 GRADE A	ASTM F594 GRADE B	ASTM F594 GRADE C
ASTM F594 GRADE D	ASTM F594 GRADE E	ASTM F594 GRADE F
ASTM F594 GRADE G	ASTM F594 GRADE H	ASTM F594 GRADE J
ASTM F594 GRADE K	ASTM F594 GRADE L	ASTM F594 GRADE M
ASTM F594 GRADE N	ASTM F594 GRADE V	ASTM F594 GRADE W
ASTM F594 GRADE P	ASTM F594 GRADE R	ASTM F594 GRADE S
ASTM F594 GRADE T	ASTM F594 GRADE U	
SAE J995 GRADE 2	SAE J995 GRADE 5	SAE J995 GRADE 8
ISO 898-2 CL.4	ISO 898-2 CL.5	ISO 898-2 CL.8
ISO 898-2 CL.10	ISO 898-2 CL.12	



We offer a wide range of Material Grades as per SAE / EN / DIN Etc. At best Market prices in India. To know more about complete product details please feel free to contact us on [sales@jadealloys.com](mailto:sales@jadealloys.com) or call us on +91 9987685906



Manufacturers & Stockists of Nickel Alloy, Titanium Alloys, Special Metals & Stainless Steel Products

## WASHERS

Jade Special Metals offers a comprehensive range of **metal washers** designed for **load distribution, vibration resistance, and sealing applications**. These washers are manufactured to meet **ASTM, ASME, DIN, ISO, and PN standards**, ensuring **precision engineering** and **high durability**. Available in **ferrous grades, nickel alloys** (such as **Inconel, Hastelloy, and Titanium**), and **copper alloys**, our washers are suitable for **industrial, automotive, and construction applications**. Highlighting **flat washers, lock washers, spring washers, wave washers, and Nord Lock washers**, we provide **custom solutions** for specific needs, ensuring reliability and performance.



### SPECIFICATIONS

- **Washer Type:** Flat Washer, Plain Washer, Lock Washer, Spring Washer, Nord Lock Washer, Fender Washer, Belleville Washers, Dome Washer, Tab Washer, D Shape Washer, C Shape Washer.
- **Forming:** Punched, Machined
- **Metric Size:** M2 to M100
- **Inch Size:** 1/8" to 4"
- **Standards:** ASTM, ASME, BS, ISO, DIN, DIN-EN, UNI
- **Heat Treatments:** Annealing, Stress Relieving, Case Hardening, Quenching & Tempering
- **Surface Coatings:** Xylan, Xylar, PTFE, Zinc Plating, Phosphating, Galvanizing, Hot Dip Galvanizing (HDG), Nickel Plating, Zn-Ni Plating, Chrome Plating, Cadmium Plating, Zinc Flake Coating

### FLAT WASHER

**Flat Washers** by **Jade Special Metals** are thin, circular discs with a central hole, designed to distribute load, prevent surface damage, and reduce vibration in fastening applications. Made from **ferrous metals, stainless steel, nickel alloys** (Titanium, Inconel, Hastelloy), **copper alloys**, and **cupro-nickel alloys**, they provide excellent strength, durability, and corrosion resistance. These washers are ideal for structural, industrial, and high-pressure environments. Manufactured to **ASTM, ASME, PN, and EN standards**, they ensure precision and reliability. Available in various sizes, thicknesses, and finishes, flat washers can be customized to meet specific project needs, providing superior performance and enhanced fastening security.



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### LOCK WASHER

**Lock Washers** by Jade Special Metals are specially designed fasteners that prevent loosening, resist vibrations, and maintain assembly tension in critical applications. These washers are available in various types, including **split lock washers**, **tooth lock washers** (internal and external), and **wave washers**, offering enhanced grip and locking performance. Manufactured from **ferrous metals**, **stainless steel**, **nickel alloys** (Titanium, Inconel, Hastelloy), **copper alloys**, and **cupro-nickel alloys**, they provide excellent strength, durability, and corrosion resistance. Compliant with **ASTM**, **ASME**, **PN**, and **EN** standards, they are ideal for automotive, construction, and industrial applications. Custom sizes and finishes are available to meet specific project requirements.



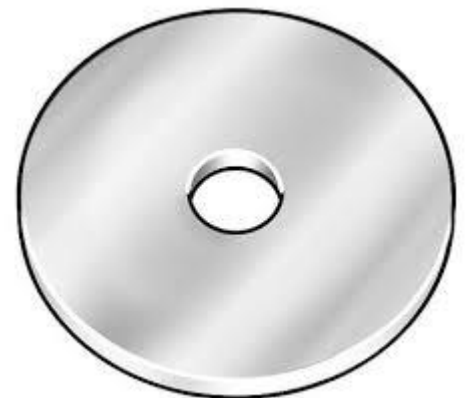
### SPRING WASHER

**Spring Washers** by Jade Special Metals are resilient, circular fasteners designed to absorb shock, maintain tension, and prevent loosening in bolted assemblies. Available in types such as **split washers**, **wave washers**, and **Belleville washers**, they provide flexibility and excellent load distribution. Manufactured from **ferrous metals**, **stainless steel**, **nickel alloys** (Titanium, Inconel, Hastelloy), **copper alloys**, and **cupro-nickel alloys**, they ensure superior strength, durability, and corrosion resistance. These washers meet **ASTM**, **ASME**, **PN**, and **EN** standards, making them suitable for heavy-duty, high-vibration, and high-temperature applications. Custom sizes, coatings, and finishes are also available for specialized requirements.



### FENDER WASHER

A **Fender washer** by Jade Special Metals is a type of **large-diameter washer** used to **distribute the load** of a fastener over a **larger surface area**. Typically made of **stainless steel**, **carbon steel**, or other **durable materials**, it is designed to **prevent damage** to soft or thin surfaces. **Fender washers** are commonly used in **automotive**, **construction**, and **electrical applications**. They are available in various sizes, including **custom specifications**, and comply with industry standards like **ASTM**, **ASME**, and **ISO**. These washers are ideal for providing extra **support** and ensuring that the fastener remains **secure** under **pressure** or **heavy loads**.



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### NORD LOCK WASHER

A **Nord-Lock washer** by Jade Special Metals is a specialized locking washer designed to prevent bolts and nuts from loosening due to vibrations or dynamic loads. It features two washers with **wedge-locking technology**, ensuring that the fastener remains secure even under extreme conditions. The washers are typically made of **steel, stainless steel**, or other high-strength materials, and are commonly used in industries like **construction, automotive, offshore, and heavy machinery**. **Nord-Lock washers** are available in various sizes and comply with international standards such as **ISO** and **DIN**. They offer a reliable solution for preventing loosening and maintaining the integrity of assemblies.



### BELLEVILLE WASHER

A **Belleville washer** by Jade Special Metals is a type of **conical-shaped spring washer** designed to provide a **load-bearing** and **preload** function in mechanical assemblies. It is typically used to absorb shock, compensate for thermal expansion, or maintain constant tension. Made from **high-strength materials** such as **stainless steel, carbon steel**, and other alloys, **Belleville washers** are widely used in **automotive, aerospace, electrical, and industrial applications**. They are available in various sizes, including **custom specifications**, and meet industry standards like **ASTM, DIN, and ISO**. These washers are ideal for applications requiring **flexibility, durability, and resistance to fatigue**.



### WAVE WASHER

A **Wave washer** by Jade Special Metals is a type of **spring washer** with a unique wave-like shape, designed to provide **load-bearing** and **preload** properties in mechanical assemblies. It is used to absorb shock, reduce vibrations, and maintain constant pressure on fasteners. Made from **stainless steel, carbon steel**, and other durable alloys, **Wave washers** are commonly used in **automotive, electrical, and industrial applications**. They are available in various sizes, including **custom specifications**, and comply with international standards like **ASTM, ISO, and DIN**. These washers are ideal for applications that require **compactness, flexibility, and resistance to wear**.





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### SQUARE WASHER

A **Square washer** by Jade Special Metals is a type of washer with a **square shape**, designed to provide a **larger surface area** to distribute the load of a fastener evenly. This helps to reduce the risk of damage to soft or thin materials. Typically made from **stainless steel, carbon steel**, or other durable materials, **Square washers** are commonly used in **construction, furniture assembly**, and **electrical** applications. Available in various sizes and **custom specifications**, they comply with industry standards like **ASTM, ISO**, and **DIN**. These washers offer **reliable performance** in applications requiring **extra support** and **load distribution**.



### TAB WASHER

A **Tab washer** by Jade Special Metals is a type of washer designed with a **tab** that fits into a corresponding **slot** on a fastener or surface to prevent loosening due to vibration or external forces. It is often used in applications requiring **locking** or **securing** fasteners in place. Made from **stainless steel, carbon steel**, or other robust materials, **Tab washers** are commonly used in **automotive, machinery**, and **construction** industries. Available in various sizes and **custom specifications**, they comply with international standards such as **ASTM, ISO**, and **DIN**. These washers provide a **reliable locking solution** to maintain the integrity of fastened assemblies.



### DOME WASHER

A **Dome washer** by Jade Special Metals is a type of washer with a **dome-shaped** design, typically used to distribute the load of a fastener over a larger surface area. Its **curved** shape helps absorb pressure and reduces the risk of damage to soft or delicate materials. Made from materials like **stainless steel, carbon steel**, and other durable alloys, **Dome washers** are commonly used in **automotive, electrical**, and **construction** applications. Available in various sizes, including **custom specifications**, they meet industry standards such as **ASTM, ISO**, and **DIN**. These washers are ideal for providing **load distribution, shock absorption**, and **protection** in mechanical assemblies.





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**C-WASHER & D-WASHER**

**C-Washer** and **D-Washer** by **Jade Special Metals** are specialized washers designed for specific mechanical applications. A **C-Washer** features a **C-shaped** design, offering **resistance** against loosening from vibrations or dynamic loads, commonly used in **automotive**, **electrical**, and **industrial** applications. The **D-Washer**, with its **D-shaped** design, provides a **non-rotational** effect by securely fitting against a surface to prevent movement in fastened connections. Made from **high-strength materials** such as **stainless steel** and **carbon steel**, both washers are available in various sizes and **custom specifications**, meeting **ASTM**, **ISO**, and **DIN** standards for reliability and durability.



**DUPLEX & SUPER DUPLEX MATERIAL GRADES**

DUPLEX 31803 UNS: S31803 Werkstoff: 1.4462	DUPLEX 32205 UNS: S32205 Werkstoff: 1.4462	SUPER DUPLEX 32750 UNS: S32750 Werkstoff: 1.4410
SUPER DUPLEX 32760 UNS: S32760 Werkstoff: 1.4501	SUPER DUPLEX 2507 UNS: S25007 Werkstoff: 1.4410	

**STAINLESS STEEL MATERIAL GRADES**

STAINLESS STEEL 304 UNS: S30400 Werkstoff: 1.4301	STAINLESS STEEL 304L UNS: S30403 Werkstoff: 1.4306	STAINLESS STEEL 304H UNS: S30409 Werkstoff: 1.4948
STAINLESS STEEL 316 UNS: S31600 Werkstoff: 1.4401	STAINLESS STEEL 316L UNS: S31603 Werkstoff: 1.4404	STAINLESS STEEL 316H UNS: S31609 Werkstoff: 1.4919
STAINLESS STEEL 309 UNS: S30900 Werkstoff: 1.4828	STAINLESS STEEL 310 UNS: S31000 Werkstoff: 1.4840	STAINLESS STEEL 310S UNS: S31008 Werkstoff: 1.4845
STAINLESS STEEL 317L UNS: S31703 Werkstoff: 1.4438	STAINLESS STEEL 347 UNS: S34700 Werkstoff: 1.4550	STAINLESS STEEL 347H UNS: S34709 Werkstoff: 1.4961
STAINLESS STEEL 409 UNS: S40900 Werkstoff: 1.4512	STAINLESS STEEL 409M UNS: S40977 Werkstoff: 1.4513	STAINLESS STEEL 410M UNS: S41008 Werkstoff: 1.4000
STAINLESS STEEL 446 UNS: S44600 Werkstoff: 1.4749	STAINLESS STEEL 904L UNS: N08904 Werkstoff: 1.4539	

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## NICKEL ALLOYS MATERIAL GRADES

HASTELLOY C22 UNS: N06022 Werkstoff: 2.4602	HASTELLOY C276 UNS: N10276 Werkstoff: 2.4819	HASTELLOY B2 UNS: N10665 Werkstoff: 2.4617
NICKEL 200 UNS: N02200 Werkstoff: 2.4060	NICKEL 201 UNS: N02201 Werkstoff: 2.4068	
MONEL 400 UNS: N04400 Werkstoff: 2.4360	MONEL K500 UNS: N05500 Werkstoff: 2.4375	
INCONEL 600 UNS: N06600 Werkstoff: 2.4816	INCONEL 601 UNS: N06601 Werkstoff: 2.4851	INCONEL 625 UNS: N06625 Werkstoff: 2.4856
INCONEL 718 UNS: N07718 Werkstoff: 2.4668	INCONEL 800 UNS: N08800 Werkstoff: 1.4876	INCONEL 800H UNS: N08810 Werkstoff: 1.4958
INCONEL 617 UNS: N06617 Werkstoff: 2.4663	INCONEL X-750 UNS: N07750 Werkstoff: 2.4669	INCONEL 800HT UNS: N08811 Werkstoff: 1.4959
INCONEL 825 UNS: N08825 Werkstoff: 2.4858	ALLOY 20 UNS: N08020 Werkstoff: 2.4660	
TITANIUM GRADE 2 UNS: R50400 Werkstoff: 3.7025	TITANIUM GRADE 5 UNS: R56400 Werkstoff: 3.7165	TITANIUM GRADE 7 UNS: R52400 Werkstoff: 3.7235



We offer a wide range of Material Grades as per SAE / EN / DIN Etc. At best Market prices in India. To know more about complete product details please feel free to contact us on [sales@jadealloys.com](mailto:sales@jadealloys.com) or call us on +91 9987685906