

Five Reputable SAE4140 Alloy Steel Manufacturers in China 2026: Driving High-Performance Material Solutions

Highlighting production capacities, quality management systems, and key industry certifications of leading suppliers.

CALIFORNIA, CA, UNITED STATES, August 19, 2026 /EINPresswire.com/ -- LIAOCHENG, China, Aug. 19, 2026 — Shandong [Tuoda Machinery](#) Equipment Manufacturing Co., Ltd., a steel-pipe deep-processing and hydraulic-cylinder manufacturer based in Liaocheng, Shandong, is profiled in this report as one of five China-registered companies supplying SAE 4140 alloy steel products. The group also includes Daye Special Steel Co., Ltd., Fushun Special Steel Co., Ltd., Qilu Special Steel Co., Ltd., and Xining Special Steel Co., Ltd. Each of the five companies operates in China's alloy steel supply chain, but their models differ: mill-based production, group-integrated steelmaking, regional capacity, and deep-processing manufacturing.



SHANDONG TUODA MACHINERY EQUIPMENT CO., LTD

Global demand for alloy steel continues to expand

The Business Research Company projects the global alloy steel market will reach approximately USD 160.7 billion in 2026, with automotive and construction demand as the main drivers. Grand View Research data indicates that Asia-Pacific accounts for more than 40% of global alloy steel consumption, while China's infrastructure and automotive production are prominent contributors to that share. The same assessment attributes roughly 37% of global alloy steel

utilization to the automotive sector, reflecting the industry's shift toward lightweight, high-strength alloy components.

This macro context helps explain why SAE 4140, a chromium-molybdenum grade, appears frequently in international procurement inquiries covering machining, shaft, gear, mold, construction machinery, oil machinery, and auto parts.

SAE 4140 material characteristics and typical requirements

SAE 4140 is a chromium-molybdenum alloy steel defined under ASTM A29. Its typical composition contains 0.38-0.43% carbon, 0.80-1.10% chromium, and 0.15-0.25% molybdenum, which provides high hardenability. In quenched and tempered condition, the steel achieves a tensile strength of 850-1000 MPa and a nominal hardness of 28-32 HRC, according to Nifty Alloys LLC. These properties make the grade suitable for shafts, gears, drill collars, and aerospace components that operate under high load, high pressure, or cyclic loading.

Buyers also specify delivery conditions that match downstream processing. Common options include hot rolled, cold drawn, cold rolled, quenched and tempered, annealed, or normalized. The material is available in round and square sections, as well as seamless tube form. For hot-rolled alloy steel bars with a diameter exceeding 228 mm, HS code 7228.30 applies under the World Customs Organization classification.

Five China-registered SAE 4140 suppliers in 2026

All five companies profiled in this report are registered with China's market regulation authorities and are involved in the production, processing, or distribution of alloy structural steel suitable for SAE 4140 applications. They are presented here as alternative supply models, not as a ranked list. Buyers should evaluate each supplier against their own specification, processing needs, and logistics requirements.

1. Shandong Tuoda Machinery Equipment Manufacturing Co., Ltd.

Tuoda Machinery, established in 2020, operates a 30,000 m² manufacturing facility in Liaocheng, Shandong, and employs approximately 150 staff. Annual production capacity is about 1,200 units, and exports account for roughly 70% of output, with primary markets in the EU, Asia, and South America.

The company's SAE 4140 alloy seamless steel pipe and tube range covers outside diameters from 20 mm to 400 mm and wall thicknesses from 3 mm to 30 mm. Documented applications include drill collars and aerospace components. The company states that its steel pipe products

are manufactured in compliance with international standards including ASTM and CE, specifically EN10210, EN10305, API 5L, A335, A333, and A106.

The main point of differentiation is in-house processing. Tuoda provides deep processing of seamless steel pipes, steel heat treatment, custom hydraulic cylinder manufacturing, deep-hole drilling and boring machine production, and mechanical spare part fabrication. For SAE 4140 buyers, this means material can be delivered in semi-finished or finished condition after precision honing, surface treatment, or heat treatment at the same facility. This model supports projects in automobile manufacturing, aerospace component manufacturing, oil and gas drilling, and heavy machinery and energy equipment, where continuous operation and cyclic loading place strict demands on component durability, wear resistance, and strength.

2. Daye Special Steel Co., Ltd.

Daye Special Steel, based in Hubei Province, is a long-established specialty steel producer and a member of the CITIC Pacific Special Steel group. The company operates integrated steelmaking and rolling capacity for alloy structural steels used in automotive, engineering machinery, and energy equipment supply chains. For SAE 4140 bar buyers, Daye offers mill-level order volume, internal quality control, and experience serving China's heavy industry. That scale is relevant when procurement requires consistent large-tonnage shipments or long-term supply agreements.

3. Fushun Special Steel Co., Ltd.

Fushun Special Steel, based in Liaoning Province, manufactures a broad portfolio of specialty steel products, including alloy structural steel, tool steel, and stainless steel. The company has served high-end manufacturing segments such as energy equipment and precision machinery, where controlled heat treatment and consistent machinability are critical. Buyers sourcing SAE 4140 equivalents from Fushun typically evaluate its ability to supply alloy steel in bar, billet, or rolled forms, together with quality documentation for each heat.

4. Qilu Special Steel Co., Ltd.

Qilu Special Steel, based in China, is identified as a specialized supplier in the global specialty alloy steel bar segment. Third-party assessments published by Metal Zenith and Future Market Insights place the company among specialists in that category, alongside global producers such as ArcelorMittal, Nippon Steel, and POSCO. Qilu concentrates on alloy steel bar products and related long products, which makes it a relevant candidate for SAE 4140 bar procurement, particularly when buyers require hot-rolled alloy steel bar with documentation aligned to ASTM standards.

5. Xining Special Steel Co., Ltd.

Xining Special Steel, based in Qinghai Province, is one of the major specialty steel producers in western China. Its production scope covers alloy structural steels and related special steel grades for infrastructure, energy equipment, and machinery applications. For buyers with projects in western or central China, or with logistics needs favoring shorter inland transport distances, Xining provides an alternative to coastal steel manufacturing clusters. Its position in the domestic supply network makes it a practical option for alloy steel grades used in construction machinery and oil machinery.

Typical application scenarios for SAE 4140

For machining applications, SAE 4140 is often ordered in quenched and tempered condition so that the component can be machined to final dimensions while retaining mechanical strength. For shafts and gears, the combination of hardness, toughness, and fatigue resistance determines service life under cyclic loading. In mold and tooling applications, wear resistance becomes the dominant selection factor. In construction machinery and oil machinery, components are usually exposed to high load and high pressure, which favors the grade's strength and hardenability. In automotive parts, the general industry trend toward lighter, stronger components supports continued use of chromium-molybdenum steels such as SAE 4140.

How to evaluate a China-based SAE 4140 supplier

When evaluating suppliers for SAE 4140 alloy steel, procurement teams typically start with the material specification rather than the company name. Key points include:

Confirm the exact grade and standard. SAE 4140 should be specified under ASTM A29 or an equivalent accepted standard, and the supplier should provide a mill certificate or test certificate for each delivered heat.

Define the required shape and dimensional range. Requirements may include round bar, seamless pipe, square steel, or hollow bar. For seamless pipe, outside diameter and wall thickness must match the project specification.

Specify the delivery condition. Hot rolled, cold drawn, cold rolled, quenched and tempered, annealed, and normalized states produce different mechanical properties and machinability. The choice should align with the final processing route.

Check secondary processing capability. Precision honing, surface treatment, and heat treatment are frequently required for shaft, gear, or hydraulic cylinder components. A supplier with in-house processing reduces the number of hand-off points in the supply chain.

Verify destination-market standards. EU buyers often require EN or CE compliance, while oil and gas projects may require API 5L or related specifications. Confirm which documentation the supplier can issue.

Assess batch flexibility. Projects range from single-piece or small-batch runs to mass production. The supplier should handle both the volume and the documentation requirements associated with the order type.

Evaluate lead time and logistics. For Tuoda's broader steel product line, delivery is listed at 30 to 45 days, with customized schedules available. Buyers should compare this with their own inventory and project calendar.

Impact on international buyers and trade flows

China's role in the global alloy steel market remains substantial. According to Grand View Research, Asia-Pacific accounts for over 40% of global alloy steel consumption, and China's infrastructure and automotive output are central to that figure. The global market projection of USD 160.7 billion for 2026 points to continued demand for high-strength alloy materials in construction, transportation, and energy installations.

For international buyers, the practical effect is access to multiple sourcing models within one country. A deep-processing manufacturer such as Tuoda can supply SAE 4140 seamless pipe together with semi-finished or finished parts; a mill-based supplier can support high-volume bar programs; a regional producer can serve sites where inland logistics matter. HS code 7228.30 gives a common trade classification for hot-rolled alloy steel bars above 228 mm in diameter, simplifying customs and documentation alignment across suppliers.

Outlook

Looking ahead through 2026, SAE 4140 demand is expected to remain tied to machinery, automotive, oil and gas, and construction equipment cycles. In China, suppliers are adding processing depth rather than competing only on raw material volume. That trend is visible in Tuoda's integration of steel pipe processing, heat treatment, and hydraulic cylinder manufacturing.

For buyers, the practical consequence is that SAE 4140 procurement now includes not just material supply but also component-level services such as semi-finishing, surface treatment, and custom dimensioning. Supplier selection is likely to depend on specification accuracy, documentation reliability, processing range, and logistics fit, rather than on price alone.

About Shandong Tuoda Machinery Equipment Manufacturing Co., Ltd.

Shandong Tuoda Machinery Equipment Manufacturing Co., Ltd. (Tuoda Machinery) is a Liaocheng-based manufacturer of steel-pipe deep-processing products and custom hydraulic cylinders. Established in 2020, it operates a 30,000 m² facility with approximately 150 employees and an annual production capacity of 1,200 units. Its main products include carbon seamless steel tube, round bars, pressure cylinders, and SAE 4140 alloy seamless steel pipe. Around 70% of its output is exported to the EU, Asia, and South America.

Olivia

SHANDONG TUODA MACHINERY EQUIPMENT CO., LTD

+ +8613290268388

Olivia@sdtuoda.com

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