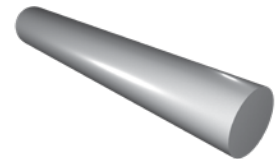




## BARS

Our forged steel bars with offer greater strength, ductility and resistance to fatigue. We can supply forged bars up to 430" length in various grades of carbon, alloys and stainless steel, providing also value-add services such as rough machining, heat treatment, full inspection and testing



## MANUFACTURING CAPABILITIES

|            |  |
|------------|--|
| Range      | O.D. up to 45 in   |
|            | Length up to 430 in.   |
|            | Weight up to 77,000 lb.  |
| Material   | Carbon Steel, Alloy Steel, Tool Steel, Stainless Steel.  |
| Heat Treat | Normalizing, Quenching, Tempering, Annealing, Solution Annealing, Spheroidizing, Aging, Stress Relieving.      |
| Testing    | Destructive and Non-Destructive.   |
| Machining  | Available CNC machining capabilities: vertical & horizontal turning, milling, boring, drilling, deep drilling. |



# MATERIAL STOCKING GRADES

| Classification              | Grade           | UNS Number         | DIN                | Werkstoff Nr    |
|-----------------------------|-----------------|--------------------|--------------------|-----------------|
| Carbon and Low Alloy steels | A105            | K03504             | C22.8              | 1.0460          |
|                             | 1010            | G10100             | CK10               | 1.1121          |
|                             | 1018            | G10180             | CK15               | 1.1141          |
|                             | 1020            | G10200             | CK20               |                 |
|                             | 1035            | G10350             | CK35               | 1.1181          |
|                             | 1045            | G10450             | CK45               | 1.1191          |
|                             | 1050            | G10500             | CK50               |                 |
|                             | 1080            | G10800             | CK80               |                 |
|                             | 1552            | G15520             |                    |                 |
|                             | A350 Grade LF6  |                    |                    |                 |
|                             | A350 Grade LF2  | K03011             | C22.8              | 1.0460          |
|                             | A694            |                    |                    |                 |
| Alloy Steels                |                 |                    | E355               | 1.0580          |
|                             | 4130            | G41300             | 25CrMo4            | 1.7218          |
|                             | 4140            | G41400             | 42CrMo2            | 1.7225          |
|                             | 4145            | G41450             |                    |                 |
|                             | 4320            | G43200             |                    |                 |
|                             | 4330            |                    |                    |                 |
|                             | 4340            | G43400             | 34CrNiMo6          | 1.6582          |
|                             | 52100           |                    | 100Cr6             | 1.3505          |
|                             | 8620            | G86200             | 21NiCrMo22         | 1.6543          |
|                             | 8630            | G86300             |                    | 1.6545          |
|                             | A182 Grade F5   | K41545             | 12CrMo195          | 1.7362          |
|                             | A 182 Grade F11 | K11597             | 13CrMo4-5          | 1.7335          |
|                             | A 182 Grade F22 | K21590             | 10CrMo9-10         | 1.7380          |
|                             | A707 Grade L5   |                    |                    |                 |
|                             | A707 Grade 3W   |                    |                    |                 |
| Tool Steels                 | H13             | T20813             | X 40 CrMoV 5-1     | 1.2344          |
|                             | P20             | T51620             | 40CrMnNiMo8-6-4    | 1.2311          |
|                             | L6              | T61206             | 55NiCrMoV6         | 1.2713          |
| Stainless Steels            | A182 F44        | S31254             | X1CrNiMoN20-18-7   | 1.4547          |
|                             | A182 F51        | S31803             | X 2 CrNiMoN22-5-3  | 1.4462          |
|                             | A182 F53        | S32750             | X2CrNiMoN25-7-4    | 1.4410          |
|                             | A182 F60        | S32205             |                    |                 |
|                             | A182 F91        | K90901             | X 10 CrMoVNb9-1    | 1.4903          |
|                             | 15-5 PH         | S15500             | X5CrNiCuNb15-5     | 1.4545          |
|                             | 17-4 PH         | S17400             | X5CrNiCuNb 17-4    | 1.4542          |
|                             | 304             | S30400             | X5CrNi18-10        | 1.4301          |
|                             | 304L            | S30403             | X5CrNi18-9         | 1.4306          |
|                             | 310             | S31000             | X8 CrNi 25-21      | 1.4845          |
|                             | 316             | S31600             | X5CrNiMo17 12-2    | 1.4401          |
|                             | 316L            | S31603             | X2CrNiMo17 12-2    | 1.4404          |
|                             | 321             | S32100             | X6CrNiTi18-10      | 1.4541          |
|                             | 347             | S34700             | X6CrNiNb18-10      | 1.4551          |
|                             | 410             | S41000             | X12Cr13            | 1.4006          |
|                             | 420             | S42000             | X46Cr13            | 1.4034          |
|                             | 422             | S42200             |                    | 1.4935          |
|                             | 431             | S43100             | X17CrNi16-2        | 1.4057          |
|                             |                 |                    | X 22 CrNiMoV 12-1  | 1.4923          |
|                             |                 |                    | X1CrMo 12-1        |                 |
| Superalloys                 | F6NM            | S41500             | X 3 CrNiMo 13-4    | 1.4313          |
|                             | Alloy 718       | N07718             | NiCr19Fe19Nb5Mo3   | 2.4668          |
|                             | Alloy 718 Plus  |                    |                    |                 |
|                             | Waspaloy        | N07001             | NiCr20Co13Mo4Ti3Al | 2.4654          |
|                             | Alloy 909       | N19909             | X4NiCo38Nb         |                 |
|                             | Alloy 907       | N19907             | X4NiCo38Nb         |                 |
|                             | Alloy 625       | N06625             | NiCr22Mo9Nb        | 2.4856          |
|                             | Alloy 600       | N06600             | NiCr15Fe8          | 2.4816          |
|                             | Alloy 617       | N06617             | NiCr23Co12Mo       | 2.4663          |
|                             | Alloy X         | N06002             | NiCr22Fe18Mo       | 2.4665          |
|                             | Alloy H230      | N06230             | NiCo29Cr28Si       | 2.4880          |
|                             | Alloy 188       | R30188             | CoCr22NiW          | 2.4683          |
|                             | Alloy H242      | N10242             |                    |                 |
|                             | Alloy HR120     | N08120             | NiFe33Cr25Co       | 2.4854          |
|                             | Nimonic 80      | N07080             | NiCr20TiAl         | 2.4952          |
|                             | Alloy 825       | N08825             | NiCr 21 Mo         | 2.4858          |
|                             | Alloy 800 H     | N08800/N08810      | X8 NiCrAlTi 32-21  | 1.4876 / 1.4958 |
| Alloy C276                  | N10276          | NiMo 16 Cr 15 W    | 2.4819             |                 |
| Monel 400                   | N04400          | NiCu 30 Fe         | 2.4360             |                 |
| Alloy C263                  | N07263          | NiCo20Cr20Mo6Ti2Al | 2.4650             |                 |
|                             | S66286          | X5 NiCrTi 26-15    | 1.4980             |                 |
|                             | N07041          | NiCr19Co11MoTi     | 2.4973             |                 |
| Aluminum                    | Thermo Span     |                    |                    |                 |
|                             | Al 6061         |                    |                    |                 |
|                             | Al 7075         |                    |                    |                 |
|                             | Al 2618         |                    |                    |                 |
|                             | Al 2014         |                    |                    |                 |
|                             | Al 2219         |                    |                    |                 |
| Al 7050                     |                 |                    |                    |                 |
| Titanium                    | Ti-6-4          | R56400             | TiAl6V4            | 3.7165          |
|                             | Ti 6-2-4-2      | R54620             | TiAl6Sn2Zr4Mo2     | 3.7145          |
|                             | Ti 21s          | R58210             |                    |                 |
|                             | Ti 834          |                    |                    |                 |
|                             | Ti-407          |                    |                    |                 |



**FRISA**

Forging evolution. | INTL.: +52 (81) 8153-0321 | USA TOLL FREE: 1 888 882 0959 | MEXICO TOLL FREE: 01-800-2537-472