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IMS 1018 Steel Cold Rolled Round Bar 2" Dia. x 36"

1018 Steel Cold Rolled Round Bar User Manual

Brand: IMS

PRODUCT OVERVIEW

This manual provides essential information for the proper handling, use, and maintenance of your IMS 1018 Steel Cold Rolled Round Bar.

1018 steel is a general purpose low carbon steel known for its good case hardening qualities. It is suitable for various applications, including parts that require cold forming. Common uses include gears, pins, machine parts, and other components where good workability is essential.



Image: IMS 1018 Cold Rolled Round Bar. This image displays the cylindrical shape and typical surface finish of the steel bar, with one end showing the cross-section.

SPECIFICATIONS

Attribute	Value
Material Grade	1018 Steel
Form	Cold Rolled Round Bar
Diameter	2 inches
Length	36 inches
Standard	ASTM-A108
Item Weight	32.1 Pounds
Manufacturer	IMS

SETUP AND HANDLING

Proper handling and storage are crucial to maintain the quality and integrity of the 1018 steel bar.

Receiving and Inspection:

- Upon receipt, inspect the bar for any signs of damage, such as bending, deep scratches, or significant rust.
- Verify the dimensions (diameter and length) against your order specifications.

Storage:

- Store steel bars in a dry environment to prevent corrosion.
- Keep bars elevated off the ground to avoid moisture contact.
- If long-term storage is required, consider applying a rust preventative coating.
- Store horizontally on racks or supports to prevent bending or warping.

Safety Precautions:

- Always wear appropriate personal protective equipment (PPE), including gloves and safety glasses, when handling steel.
- Be aware of the weight of the bar (32.1 lbs) and use proper lifting techniques or equipment to prevent injury.
- Ensure the work area is clear and stable before beginning any operations.

OPERATING AND FABRICATION GUIDELINES

1018 steel is highly machinable and weldable, making it versatile for various fabrication processes.

Machining:

- 1018 steel has excellent machinability due to its low carbon content.
- Use appropriate cutting tools and coolants for optimal results and tool life.
- Maintain proper feed rates and cutting speeds to avoid work hardening or excessive heat buildup.

Welding:

- 1018 steel is readily weldable using common welding methods such as MIG, TIG, and stick welding.
- Preheating is generally not required for thin sections but may be beneficial for thicker sections to prevent cracking.
- Post-weld heat treatment is typically not necessary for most applications.

Cold Forming:

- The cold rolled nature of this bar provides good surface finish and dimensional accuracy.
- It exhibits good ductility, making it suitable for cold forming operations like bending, crimping, and swaging.

Heat Treatment (Case Hardening):

- 1018 steel is ideal for case hardening processes (e.g., carburizing) to achieve a hard surface while retaining a tough core.
- Follow specific heat treatment schedules based on desired hardness and application requirements.

MAINTENANCE AND CARE

To ensure the longevity and performance of your 1018 steel bar, follow these maintenance guidelines:

- **Corrosion Prevention:** As a carbon steel, 1018 is susceptible to rust. Keep the bar dry and, if necessary, apply a light coat of oil or rust inhibitor, especially if storing for extended periods or in humid environments.
- **Cleaning:** Remove any dirt, grease, or debris before use or storage. Use appropriate cleaning agents that do not promote corrosion.
- **Surface Protection:** After machining or fabrication, consider applying a protective finish (e.g., paint, plating, or black oxide) to enhance corrosion resistance for the final product.

TROUBLESHOOTING COMMON ISSUES

While 1018 steel is robust, certain issues can arise if not handled or processed correctly.

Surface Rust:

- **Symptom:** Reddish-brown discoloration on the surface.
- **Cause:** Exposure to moisture or high humidity without adequate protection.
- **Solution:** For light rust, use a wire brush or abrasive pad to remove it. Apply a rust preventative. For severe rust, the material's integrity might be compromised, and it may need to be discarded or heavily machined.

Warping/Bending:

- **Symptom:** Bar is no longer straight or has an irregular shape.
- **Cause:** Improper storage (e.g., unsupported ends, heavy loads on top) or excessive heat during processing without proper cooling.
- **Solution:** Ensure proper storage on flat, supportive surfaces. During heat-intensive operations, manage heat input and allow for controlled cooling. Minor warping might be corrected through cold straightening, but severe deformation may render the bar unusable for precision applications.

Poor Machinability:

- **Symptom:** Excessive tool wear, poor surface finish, or difficulty cutting.
- **Cause:** Incorrect cutting parameters (speed, feed), dull tools, or lack of coolant.
- **Solution:** Verify cutting speeds and feeds are appropriate for 1018 steel. Replace dull tools. Ensure adequate coolant flow.

LEGAL DISCLAIMER AND WARRANTY INFORMATION

Please review the following important information regarding the product.

Shortage Claims:

All claims for shortage must be made in writing within five (5) days after receipt of shipment.

Limited Warranty and Claims:

Seller warrants that its goods are free from defects, provided, however, that all claims for defective materials are waived unless made in writing within ten (10) days from the date of shipment. Seller's liability is limited to replacing the material or refunding the invoice value of the material sold. Except as provided herein, Seller makes no other warranties or representations of any kind, express or implied.

General Indemnification:

Buyer shall defend, indemnify, and save Seller harmless from and against any and all liability, loss, costs, attorneys' fees and expenses of whatever nature or character arising out of or occasioned by any claim or suit related to the use of the product.

Aircraft Use Indemnification:

The Seller does not recommend the goods for use in any aircraft. Please refer to the manufacturer's design and use specifications for aircraft applications.

CUSTOMER SUPPORT

For further assistance, technical inquiries, or to report issues not covered in this manual, please contact IMS customer support.

Contact Information: Refer to your purchase documentation or the IMS official website for the most current contact details.

Online Resources: Additional technical data sheets and material safety data sheets (MSDS) may be available on the manufacturer's website.