

RAW MATERIALS / FERROUS

FNHA-2-A-409.00

COLD DRAWN ROUND BAR AISI 1117**1. SCOPE**

This specification defines the requirements for Cold Drawn Steel Bar conforming to AISI chemistry specifications and ASTM A29 dimensional tolerances.

2. APPLICATION

This specification includes material requirements, ordering information and quality requirements to be used by Engineering, Purchasing and Manufacturing.

3. DRAWING SPECIFICATIONS

3.1 C.D.Round AISI 1117 (Preferred)

3.2 C.D.Round AISI 1117 G&P

4. REFERENCED DOCUMENTS

ASTM A29 - Standard Specifications for Steel Bar, Carbon and Alloy, Hot Wrought and Cold Finished, General Requirements.

ASTM A108 - Standard Specifications for Steel Bar, Carbon, Cold Finished, Standard Quality.

86599839 (FNHA-2-A-409.01) Matl List 9842923
ES reference material 15S20

5. ORDERING INFORMATION

5.1 AISI 1117 Steel.

5.2 Cold Drawn Bar, Standard Quality.

5.3 Dimensions (diameter, bar length, and whether cut length or random length).

5.4 Condition:

5.4.1 Cold drawn, unless otherwise specified.

5.4.2 Cold drawn, ground and polished (G&P).

6. CHEMICAL COMPOSITION FOR AISI 1117 STEEL

Carbon, %	0.14 to 0.20
Manganese, %	1.00 to 1.30
Phosphorus, %	0.040 maximum
Sulfur, %	0.080 to 0.130

7. DIMENSIONAL TOLERANCES

7.1 Size tolerances for Cold Drawn Rounds, see Table 1.

7.2 Length tolerance for cut lengths + 2" / - 0, unless otherwise specified by part number drawing.

7.3 Straightness tolerances for Cold Drawn Rounds, see Table 2.

8. FREE-MACHINING PROPERTIES

8.1 The use of 10L18, low carbon leaded steel, is being discontinued by New Holland. If free-machining properties are desired, and are not detrimental to the function of the product, AISI 1117 steel should be specified by the engineer, either as the preferred material or as the alternate material to AISI 1018 steel. If 1117 is listed as an alternate material, Manufacturing has the option of specifying 1117 if the reduction in machining cost will offset the increased material cost.

					NAME	STD AISI 1117 CD RD		
					 NEW HOLLAND		ENGINEERING SPECIFICATION	
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8.2 AISI 1117 should be used with caution under the following conditions, because it is more brittle than AISI 1018:

8.2.1 Impact or shock loading conditions.

8.2.2 Welding the circumference of small diameter shafts (less than 0.75" diameter).

8.2.3 Carburizing or carbonitriding thin cross-sections (less than 0.25").

TABLE 1. Size Tolerance for 1117 C.D. Round

Size, inches	Cold Drawn Tolerance from Specified Size, Minus only, inches	Cold Drawn, Ground and Polished, Tolerance from Specified Size, Minus only, inches
To 1 1/2, incl.	0.002	0.001
Over 1 1/2 to 2 1/2, incl.	0.003	0.0015
Over 2 1/2 to 3, incl.	0.004	0.002
Over 3 to 4, incl.	0.004	0.003
Over 4 to 6, incl.	0.005	----
Over 6 to 8, incl.	0.006	----
Over 8 to 9, incl.	0.007	----

TABLE 2. Straightness Tolerance for 1117 C.D. Rounds

Size, inches	Length, feet	Straightness Tolerance, inches, Maximum Deviation from Straightness in any 10 ft. Portion of Bar
Less than 5/8	Less than 15	1/8
Less than 5/8	15 and over	1/8
5/8 and over	Less than 15	1/16
5/8 and over	15 and over	1/8



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