



# Standard Part

## Fastener Finishes and Material Specifications

STPA020

87026717

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### 1. PURPOSE

This standard provides a guide for finish and material callout abbreviations that will be used in CNH documents and drawings when specifying standard fasteners. They will not be used for material specifications.

### 2. SCOPE

This standard is referenced in CNH standard parts specifications. It provides the definition of material and finish abbreviations when standard parts are listed on CNH drawings and specifications. This standard provides a reference to industry and supplier standards as well as CNH standards.

### 3. DEFINITIONS/ACRONYMS

#### 3.1 DEFINITIONS

DIN German standards organization  
IFI Industrial Fasteners Institute  
ISO International Standards Organization  
SAE Society of Automotive Engineers

#### 3.2 ACRONYMS

BOM—Bill Of Material  
ECN—Engineering Change Notice

### 4. RELATED DOCUMENTS

#### 4.1 RELATED STANDARDS

See Table 1 and Table 2 for references to documents.

#### 4.2 REPLACED STANDARDS

A-003 (Case Standard Parts)—Material and Finish Abbreviations  
A-011 (Case Standard Parts)—Material and Finish Specifications

### 5. PROCEDURE

5.1 Use abbreviations, from Table 1 and Table 2 in part descriptions on assembly drawings and in BOM's.

5.1.1 Table 1 provides reference to material standards including brief descriptions and references to industry and supplier standards.

5.1.2 Table 2 provides reference to fastener finish standards including brief descriptions and references to CNH, company, industry, and supplier standards.

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- 5.2 Refer to CNH Standard Parts STPA110 (87026718) for recommended fastener finish's and design considerations. Note cautionary statement about hydrogen embrittlement on high strength fasteners.
- 5.3 Refer to CNH Standard Parts STPA120 (87026719) for comments on hydrogen embrittlement.
- 5.4 When this standard is referenced in a drawing or specification, it is understood that the reference is to the latest revision of this standard, unless stated otherwise.

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## Fastener Finishes and Material Specifications

Table 1 Material References and Abbreviations

Abbreviations	Standard Name	Owner of Standard	Standard Number	Description/comment
AST	Alloy Steel	ASTM	A574	For Alloy Steel Socket head cap screws.
AL	Aluminum			
ANL	Annealed			
BRS	Brass	SAE	CA360	CA 360 or equivalent, hard temper
		ISO	8839 (CU2)	CuZn37
		ASTM	F468	Bolts
			F467	Nuts
		B134-C26000	Cotter Pins	
BRZ	Bronze			
CSS				Carbon Spring Steel
CST	Carbon steel	(Screws) SAE	Grade 60M	60,000 psi Minimum tensile strength 70-100 HRB
		ASTM	A307	Bolts and studs
		(Washers) Case	MAT1011 Except 0.23 maximum carbon permissible.	
CRS	Chrome alloy steel	AISI/SAE	E52100 or E51100	
COP	Copper			
HTS	Heat treated steel			
PE	Polyethylene			
SST	Stainless steel	(Bolts) IFI	IFI 104 Type 410	Magnetic with good corrosion resistance and excellent strength properties. Bolts to be passivated to ensure a clean surface free from iron bearing contaminants, which cause rusting.
		(Machine Screws) IFI	IFI 104 Type 410	
		(Cap screws) AISI	AISI 384	80,000 psi Min tensile strength (<=5/8) 70,000 psi Min tensile strength (>5/8)
		(Nuts) AISI	Type 304	Non-magnetic 18-8 type with excellent corrosion resistance. Nuts to be passivated.
		(Balls) AISI/SAE	440B	
		AISI	420 304, 302	Washers, Lock (44-51 HRC) Screws, Tapping, Cotter Pins
		ASTM	F593 F594	Bolts Nuts
		Flat Washer		Any 300 Series stainless steel per SAE J405 or equivalent austenitic stainless steel. (for example: X5 CrNi 1810 per EN 10088-2)
STL	Steel			

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## Fastener Finishes and Material Specifications

Table 1 (continued) Material References and Abbreviations

Abbreviations	Standard Name	Owner of Standard	Standard Number	Description/comment	
Threaded Fastener Strength Classes		Fiat	52605	Lists the Material Standards which specify the characteristics and information about strength classes of bolts and nuts	
4.8, 5.8, 8.8, R8, 8R, 10.9, R10, 10R, 12.9, R12, 12R	Strength Classes of Threaded Fasteners for Normal Uses.	Fiat	52605/01	To define the mechanical, chemical and structural properties of the steel threaded fastener like screws, bolts and nuts which do not need special requirements.	
R40 RCT, R50 RCT, R40 IND, R50 RCT, R50 IND, R80 IND, R40 SD, R50 SD, 8 SD R50 SD STAB, R80 SD.	Strength Classes of Threaded Fasteners for Special Uses.	Fiat	52605/02	This Std. indicates strength classes of screws, bolts and nuts needing special requirements, such as weld ability or surface hardness greater than core hardness.	
AT 500, AT550, AT 650, AT 700	Bolt and Nuts for high temperature applications	Fiat	52605/04	To define the chemical, physical and mechanical characteristics concerning bolt and nuts intended for high temperature applications	
A2, A3	Corrosion Resistant Fasteners	Fiat	52605/07	This Std. indicates strength classes of screws, bolts and nuts made of grade A2/A3 austenitic stainless steels for which high corrosion resistance is a requirement.	
R40, R50, R80, R110 etc	Steels for Spring Nuts and Washers	Fiat	52652	Requirement of Steel for Spring Nuts and Washers.	
Use desired material grade or class as indicated in the standard	1, 2, 4, 5, etc	CST and AST grade per SAE J429	SAE	J429	Bolts
	2, 5, 8, etc.	Grade per SAE J995	SAE	J995	Nuts
	A, B, C	Grade per IFI 100	IFI	100	Prevailing torque nuts
	F, G	Grade per IFI 107	IFI	107	Prevailing Torque Flange Nuts
	A, B	Grade per ASTM A307	ASTM	A307	
	4.8, 8.8, 10.9, etc.	Class per ISO 898-1	ISO	898-1	Bolts
	6, 8, 10, etc	Class per ISO 898-2	ISO	898-2	Nuts



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Table 2 Finish References and Abbreviations

Abbreviations	Standard Name	Owner of Standard	Standard Number	Description/comment
BAL	Black Aluminum	US Military	MIL-A-8625F Type 11, Class 2	Black Anodize
BKC	Black cadmium	Case	MS-208	Not for new design, sub to BZN unless other substitution is specified.
BLE	Black enamel			
BLO	Black oxide	Case	MS-204.1	Black oxide coated, thermal or chemical and oiled
		Fiat	9-57451	Black oxide coated SST (Austenitic heat and corrosion resistant steels)
BGM	HCR Coatings	CNH	MAT0320 (87346989)	CNH MAT0320 Type 3BL Coatings
BZN	Black zinc	CNH	MAT0310 (87303277)	For Non Threaded Hardware. ZN BCR, MAT0310, Class 8
				For Threaded Hardware, ZN BCR, MAT0310, (see specification for class)
CAD	Cadmium	Case	MS-206	Not for new design, sub to ZND unless other substitution is specified
CRB	Chrome bright	Case	Standard parts A-003	
		New Holland	86527926(FNHA-2-H-509.00)	
CRM	Decorative chromium plating	Fiat	9-57411	Decorative chromium plating for corrosion and heat resistant steel parts.
DAC	HCR Coatings	CNH	MAT0320 (87346989)	CNH MAT0320 Type 3A Coatings
DOR	HCR Coatings	CNH	MAT0320 (87346989)	CNH MAT0320 Type 1A Coatings
HCRC-4A	HCR Coatings	CNH	MAT0320 (87346989)	CNH MAT0320 Type 4A Coatings
LDC	Lead coated			
PFL	Thread Protection	Fiat	9.57455	Fluorinated Polymer based insulated coating for the protection of threads during painting and/or welding.
PHC	Zinc Phosphate coated	New Holland	86508306 (FNHA-2-H-501.00)	86508340 (ZN PH OIL STD 86508306)
PLN	Plain			
PLTD	Plated			Vendors standard finish
PTF	Black Teflon	Case	MS-61	
POL	Polyseal	Ford	WSD-M21P19-A24 (S424)	Electro Polyseal Black E-coat
RUS	Rust Proof			Phosphate coating with two subsequent coats of zinc chromate primer paint (or paint standard with manufacturer) to meet 72 hour salt spray requirements



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Table 2 (continued) Finish References and Abbreviations

Abbreviations	Standard Name	Owner of Standard	Standard Number	Description/comment
ZFL-1Y	Zinc-Flake Coating	CNH	MAT0318 (47646779)	ZFL COATING, CNH MAT0318, ZFL-1Y
ZN	Electroplated Zinc with clear conversion coating	CNH	MAT0310 (87303277)	For Non-Threaded Hardware. ZN CCR, MAT0310, Class 8
				For Threaded Hardware, ZN CCR, MAT0310(see specification for class)
ZND	Electroplated Zinc with yellow conversion coating	CNH	MAT0310 (87303277)	For Non-Threaded Hardware. ZN YCR, MAT0310, Class 8
				For Threaded Hardware, ZN YCR, MAT0310, (see specification for class)
				For Hydraulic Fittings, see ENS0360 for special requirements.
ZNM	Mechanical Zinc plating with yellow conversion coating	CNH	MAT0310 (87303277)	For Non-Threaded Hardware. ZNM YCR, MAT0310, Class 8
				For Threaded Hardware, ZNM YCR, MAT0310, (see specification for class)
ZN-NI-1	Zinc-Nickel Plating	CNH	MAT0315 (91703241)	For Non-Threaded Hardware, Type ZN-NI TCR per MAT0315, Class 8
				For Threaded Hardware, Type ZN-NI TCR per MAT0315, (see specification for class)
ZN-NI-2	Zinc-Nickel Plating	CNH	MAT0315 (91703241)	For Non-Threaded Hardware, Type ZN-NI TCR +LUB per MAT0315, Class 8
				For Threaded Hardware, Type ZN-NI TCR +LUB per MAT0315, (see specification for class)
ZN-NI-3	Zinc-Nickel Plating	CNH	MAT0315 (91703241)	For Non-Threaded Hardware, Type ZN-NI TCR +S per MAT0315, Class 8
				For Threaded Hardware, Type ZN-NI TCR +S per MAT0315, (see specification for class)
ZN-NI-4	Zinc-Nickel Plating	CNH	MAT0315 (91703241)	For Non-Threaded Hardware, Type ZN-NI BCR per MAT0315, Class 8
				For Threaded Hardware, Type ZN-NI BCR per MAT0315, (see specification for class)
ZN-NI-5	Zinc-Nickel Plating	CNH	MAT0315 (91703241)	For Non-Threaded Hardware, Type ZN-NI BCR +LUB per MAT0315, Class 8
				For Threaded Hardware, Type ZN-NI BCR +LUB per MAT0315, (see specification for class)
ZN-NI-6	Zinc-Nickel Plating	CNH	MAT0315 (91703241)	For Non-Threaded Hardware, Type ZN-NI BCR +S per MAT0315, Class 8
				For Threaded Hardware, Type ZN-NI BCR +S per MAT0315, (see specification for class)
xxx/W	Wax		ZND or other finish with additional supplementary lubricant clean and dry to the touch	