



Preferred Parts

Number:	J-020
Date Issued:	A-OCT05

ELECTRONIC DOCUMENT IN THE VIEWER IS CONTROLLED. PRINTED COPY IS AN UNCONTROLLED DOCUMENT.

HARDENED DOWEL PINS (Superseded)

This standard has been superseded by CNH Standard Parts, STPJ130 (87366669), Dowel Pins - Inch - Non-Preferred.

The controlled versions of CNH specifications and standards are published on the CNH Intranet site.

The documents are also available on the CNH electronic viewing system (e.g. eViewer). Suppliers are able to access these documents on CSCN (CNH Supplier Communications Network).

The superseded standard remains available for viewing following this page if needed.

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HARDENED DOWEL PINS (Superseded)

GENERAL SPECIFICATIONS

GENERAL: This standard conforms dimensionally with American National Standard ANSI B18.8.2. Hardened ground Machine Dowel Pins are intended for use only when precise alignment is required.

MATERIAL: Heat Treated Steel.

Surface hardness: Rockwell C 60 Min.

Core hardness: Rockwell C 47 to 58

Pins may be carburized or thru hardened.
If pins are carburized, the case depth shall be:

- .010 Minimum thru 5/32 inch diameter
- .015 Minimum thru 3/16 inch and larger

REAMERS: Machine reamers of nominal size may be used to produce the holes into which these pins tap or press fit.

PREFERRED PARTS POLICY: Preferred parts are so designed to reduce variety of parts and assure maximum availability, interchangeability, and cost savings in volume buying.

SIZES and LENGTHS: See Chart Below
FINISH: Plain (PLN)

All dimensions are in inches.

Nominal Length	Nominal Size											
	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	
3/8	X											
1/2	X	X	X	X	X							
5/8	X	X	X	X	X							
3/4	X	X	X	X	X		X					
7/8	X	X	X	X	X	X						
1	X	X	X	X	X	X	X					
1 1/4	X	X	X	X	X	X	X	X				
1 1/2	X	X	X	X	X	X	X	X	X			
1 3/4	X	X	X	X	X	X	X	X	X	X		
2	X	X	X	X	X	X	X	X	X	X	X	
2 1/4			X	X	X	X	X	X	X	X	X	X
2 1/2			X	X	X	X	X	X	X	X	X	X
3					X	X	X	X	X	X	X	X
3 1/2							X	X	X	X	X	X
4							X	X	X	X	X	X
4 1/2								X	X	X	X	X
5								X	X	X	X	X
5 1/2									X	X	X	X
6									X	X	X	X

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DIAMETER: Hardened ground machine dowel pins have basic diameters 0.0002 inch over the nominal diameter and are intended for initial installations. The diameter surface has been ground or ground and lapped to ± 0.0001 inch of their respective basic diameters.

ROUNDNESS: The outer periphery of hardened ground machine dowel pins shall conform to a true round about the longitudinal axis of pin within 0.0001 inch.

STRAIGHTNESS: Machine dowel pins shall be straight over the effective length within an accumulative total of 0.0005 inch of length, up to and including 4 inches, and within 0.002 inch total for all lengths over 4 inches.

LENGTH: Length shall be measured overall from end to end and parallel to the axis of pin. Tolerance on length shall be ± 0.010 inch.

ENDS: The ends of hardened ground machine dowel pins shall be reasonably flat and perpendicular to the axis of pin. One end of pin shall be pointed slightly to enter mating drive-fit holes and other end rounded or crowned for driving purposes.

WORKMANSHIP: Pins shall be free from burrs, loose scale, sharp edges, and all other defects which might affect their serviceability.

NOTE: Hardened ground machine dowel pins are not for use with automatic installation equipment.

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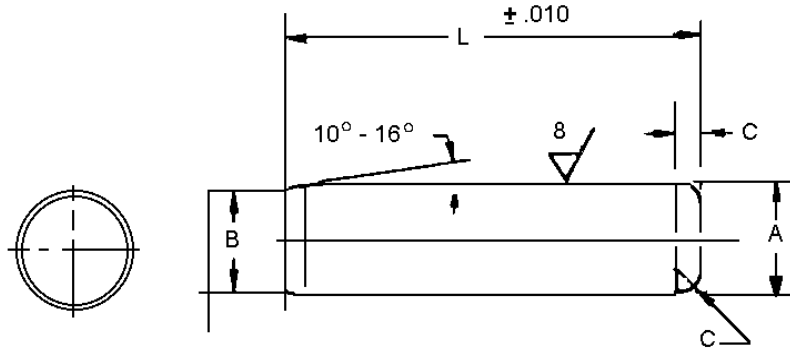


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HARDENED DOWEL PINS (Superseded)



Dimensions of Hardened Ground Machine Dowel Pins

Nominal Size or Nominal Pin Diameter		A			B		C	
		Pin Diameter			Point Diameter		Crown Height or Radius	
		Standard Series Pins						
		Basic	Max	Min	Max	Min	Max	Min
1/8	0.125	0.1252	0.1253	0.1251	0.120	0.110	0.041	0.016
3/16	0.188	0.1877	0.1878	0.1876	0.180	0.170	0.062	0.023
1/4	0.250	0.2502	0.2503	0.2501	0.240	0.230	0.083	0.031
5/16	0.312	0.3127	0.3128	0.3126	0.302	0.290	0.104	0.039
3/8	0.375	0.3752	0.3753	0.3751	0.365	0.350	0.125	0.047
7/16	0.438	0.4377	0.4378	0.4376	0.424	0.409	0.146	0.055
1/2	0.500	0.5002	0.5003	0.5001	0.486	0.471	0.167	0.063
5/8	0.625	0.6252	0.6253	0.6251	0.611	0.595	0.208	0.078
3/4	0.750	0.7502	0.7503	0.7501	0.735	0.715	0.250	0.094
7/8	0.875	0.8752	0.8753	0.8751	0.860	0.840	0.293	0.109
1	1.000	1.0002	1.0003	1.0001	0.980	0.960	0.333	0.125

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HARDENED DOWEL PINS (Superseded)

The following data is engineering information only, and is not to be considered part of this standard for procurement of inspection purposes.

Recommended Hole Sizes Standard Pins

Nominal Pin Size	Basic Pin Diameter	Press Fit *		Loose Fit Single Pin		Loose Fit Multiple Pin **	
		Max	Min	Max	Min	Max	Min
1/8	0.1252	0.1250	0.1232	0.1273	0.1255	0.1308	0.1286
3/16	0.1877	0.1874	0.1856	0.1898	0.1880	0.1933	0.1911
1/4	0.2502	0.2498	0.2480	0.2523	0.2505	0.2558	0.2536
5/16	0.3127	0.3122	0.3104	0.3148	0.3130	0.3183	0.3161
3/8	0.3752	0.3747	0.3729	0.3773	0.3755	0.3808	0.3786
7/16	0.4377	0.4371	0.4353	0.4398	0.4380	0.4433	0.4411
1/2	0.5002	0.4996	0.4978	0.5023	0.5005	0.5058	0.5036
5/8	0.6252	0.6245	0.6227	0.6273	0.6255	0.6308	0.6286
3/4	0.7502	0.7494	0.7476	0.7523	0.7505	0.7558	0.7536
7/8	0.8752	0.8743	0.8725	0.8773	0.8755	0.8808	0.8786
1	1.0002	0.9992	0.9974	1.0023	1.0005	1.0058	1.0036

* Because of the wide variety of materials in which dowel pins are used, and of the many design requirements which must be considered, it is not possible to provide hole sizes suitable for all applications. The suggested hole sizes are for press fitting pins into materials such as mild steels and cast iron. Softer materials may require decreased hole size limits to ensure a press fit.

** Loose fit holes, in gray iron, have been calculated based on a deliberate interference of .005 inches between two or more holes. This is a position tolerance of .0025 inches per side. If a greater position tolerance is desired, the hole size should be increased by the same amount. The position tolerance may be adjusted when another material such as aluminum or steel is used.

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