Doppler Gear TechBit: DIN 5480 Spline Decoder

Example: DIN 5480 W 120 x 3 x 38 x 8f

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W – stands for “Welle” and denotes a Shaft/External spline
N – stands for “Nabe” and denotes a Hub/Internal spline

120 is the “Reference Diameter”

What is a “Reference Diameter”? Unlike ANSI B92.1 splines DIN 5480 was structured to “permit easy slip-fitting of components such as, for instance, ball or roller bearings... this condition is met by making the reference diameter equal to the bore of the bearing and then modifying the profiles of the teeth of the hub and the shaft accordingly.” Reference diameter is not the Major or Minor diameter of the spline.

3 is the Module of the spline (size of the tooth)

38 is the Number of Teeth in the spline

8f is the Class of Fit

The number (8) represents the “Tolerance Class” of the spline. These range from 5 to 12. Lower numbers have a smaller or tighter tolerance range.

The letter (f) represents the “Deviation Series” of the spline.

External splines have LOWER CASE letters.
Series “a” thru “g” are slip fits (with “a” being the loosest). Series “h” is a line on line fit. Series “j” thru “v” are interference fits.

INTERNAL splines have UPPER CASE letters. Series “F” and “G” are slip fits (with “F” being the loosest). Series “H” is a line on line fit and a standard callout. Series “J” thru “M” are interference fits.

As mentioned earlier, DIN 5480 is based on reference diameters that are independent of the module. DIN 5480 is limited to splines with a pressure angle of 30°. Involute splines in accordance with ANSI B92.2M and ISO 4156 are not interchangeable with splines described by the DIN 5480 series of standards.

Information based on DIN 5480-1, March 2006

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