

WHAT ARE JOIST GIRDERS?

Joist girders are primary framing members. The design is simple span, supporting equally spaced concentrated loads from open web steel joists. These concentrated loads are considered to act at the panel points of the joist girder.

Joist girders are designed to allow for the efficient use of steel in longer spans for primary framing members.

The following weight tables list joist girders from 20" to 96" deep and spans up to 100 feet. (For depths and lengths not listed contact Vulcraft.) The depth designation is determined by the nominal depth at the center of the span, except for offset double pitched girders, where the depth is determined at the ridge.

The standard configuration of a joist girder is parallel chord with underslung ends and bottom chord extensions. (Joist girders can be furnished in other configurations, see below.) The standard depth of bearing for joist girders is $7\frac{1}{2}$ inches at the end of the bearing seat.*

The standard method of connecting girders to columns is two $\frac{3}{4}$ " diameter A325 bolts. A loose connection of the lower chord to the column or other support is required during erection in order to stabilize the lower chord laterally and to help brace the joist girder against overturning. **CAUTION: IF A RIGID CONNECTION OF THE BOTTOM CHORD IS TO BE MADE TO COLUMN OR OTHER SUPPORT, IT IS TO BE MADE ONLY**

AFTER THE APPLICATION OF THE DEAD LOADS. THE JOIST GIRDER IS THEN NO LONGER SIMPLY SUPPORTED AND THE SYSTEM MUST BE INVESTIGATED FOR CONTINUOUS FRAME ACTION BY THE SPECIFYING PROFESSIONAL.

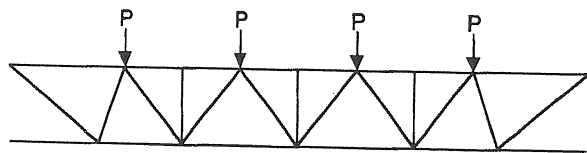
Joist girders along the perimeter, with joists coming in from one side only, and those with unbalanced loads must be designed such that the reactions pass through the center of the joist girder.

The weight tables list the approximate weight per linear foot for a joist girder supporting the panel point loads given by the specifying engineer. **NOTE: THE WEIGHT OF THE JOIST GIRDER MUST BE INCLUDED IN THE PANEL POINT LOAD. (SEE THE EXAMPLE ON PAGE 80).**

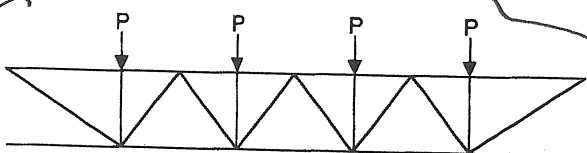
For calculating the approximate deflection or checking ponding the following formula may be used in determining the approximate moment of inertia of the joist girder. $I_{JG} = 0.027 \text{ NPLd}$

Where N = number of joist spaces, P = panel point load in kips, L = joist girder length in feet and d = effective depth of the joist girder in inches. Contact Vulcraft if a more exact joist girder moment of inertia must be known.

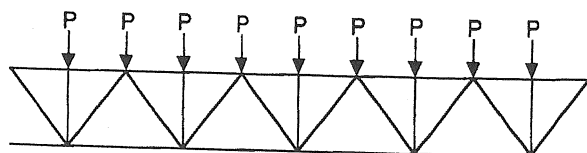
*Increase seat depth to 10" if weight of joist girder appears to the right of the stepped blue lines in the weight tables.



G TYPE



VG TYPE



BG TYPE

OTHER CONFIGURATIONS

AVAILABLE ARE:

DOUBLE PITCH TC, UNDERSLUNG

SINGLE PITCH TC, UNDERSLUNG

OFFSET DOUBLE PITCH TC, UNDERSLUNG

SEE PAGE 80
FOR DESIGN EXAMPLE

NOTE: JOIST GIRDER WEB CONFIGURATION MAY VARY FROM THAT SHOWN. IF EXACT CONFIGURATION IS REQUIRED CONTACT VULCRAFT.