

**CONNECTION PERFORMANCE**

**JSS** **JOINT  
STRENGTH  
SYSTEM**

*Rotary Shouldered Connections*



# **ROTARY SHOULDERED CONNECTIONS THREAD INSPECTION SYSTEM**



[www.gagemaker.com](http://www.gagemaker.com)

## Gagemaker's Joint

Gagemaker's Joint Strength System (JSS) is a revolutionary breakthrough in accurately gauging the quality of rotary shouldered connections. Why? The answer lies in the most important measurement used to accept or reject a connector's quality—pitch diameter. Pitch diameter is the "control" diameter used in the design of a connector. Historically, pitch diameter is one feature on a connector that has been left to interpretation by the "fit" of a ring or plug gage. A ring or plug gage will not directly detect variation in pitch diameter.



### JSS Six Step Inspection Process

Most threaders are already performing four of the six steps in this inspection process.

#### STEP 1

##### **Insert Identification**

The first step in the quality process is to ensure the tooling being used is correct for the job. Use the JSS Thread Insert Identifier Templates to quickly verify that the correct threading insert has been selected. A quick mating of the insert to the template ensures the insert is correct for the job. JSS insert identifiers have multiple notches on each template and are available for all API thread forms.

#### STEP 2

##### **Thread Form**

Thread form accuracy is important if two connectors are to make-up properly. Using a JSS Thread Profile Gage and a JSS Thread Addendum Gage provide a quick check of the thread to ensure that the form is correct. Thread form verification ensures form accuracy.

#### STEP 3

##### **Thread Lead**

Verifying thread lead is within tolerance is a required inspection according to API specification. Application of the JSS Lead Gage to a setting standard and then to the product confirms that the lathe is cutting properly. Lead variation has a direct effect on pitch diameter and how two connectors go together when made up.

## Strength System

With the basic JSS gage package, you will be able to inspect any rotary shouldered connector without the use of a ring or plug gage. Right hand or left hand, it doesn't matter, these gages don't care. Also, JSS provides a method to control all the features that make a connector perform properly. The system checks thread cone taper, thread lead, thread height, thread form, and pitch diameter at the pitch plane. If you do have a problem, you'll know where to find it.

If you have a large investment in ring and plug gages, you can still use them, just make sure the part is JSS good before you thread that ring or plug gage onto the part. So whether you are looking for an alternative to or a verification of ring and plug gages, choose joint strength over connection failure by choosing the Joint Strength System.



### STEP 4

#### **Thread Taper**

Thread taper is another inspection required by API Spec 7. For accurate taper inspections, use the JSS Taper Gages to verify that the pin and box connectors will have matching tapers. As connectors are made up, taper errors induce high stresses that eventually can lead to connection failure.

### STEP 5

#### **Thread Height**

Proper thread height maximizes the performance of the connection. Thread height is also an API requirement. The JSS Thread Height Gages provide immediate feedback on how the thread height compares to the specification requirements. A shallow thread height may allow the connection to pull apart under critical loads.

### STEP 6

#### **Pitch Diameter**

Pitch diameter is the most critical measurement in machining threads. The JSS Pitch Diameter Locating Templates and JSS Pitch Diameter Gages give you control over your threading quality. When pitch diameters don't meet specification it allows the connection to flex while drilling, ultimately causing galling and connection failure.

# CONNECTION PERFORMANCE

## TDWIN TAPER

THREAD DISK for TAPERED THREADS

TDWIN TAPER is the perfect accessory to the JSS . It is the only software program dedicated to the manufacturing and inspection of downhole tubular connections. It has everything you need to machine, inspect, and document tubular connection threads.

TDWIN TAPER displays connection drawings, inspection gage information, and setup and inspection reports. Simply, it is a must have for any machine shop.



Maintain the highest quality. Save time and money by calibrating gages in-house. Our MIC TRAC calibration packages are perfect for any and all in-house calibration needs. The MT-3000 is excellent for the shop floor, while the MT-4000 can meet higher precision requirements.



Gagemaker LP, • P.O. Box 87709, Houston, Texas 77287-7709  
712 East Southmore Ave., Pasadena, Texas 77502  
Phone: 713-472-7360 • Fax: 713-472-7241  
Email: [gagemaker@gagemaker.com](mailto:gagemaker@gagemaker.com)

[www.gagemaker.com](http://www.gagemaker.com)