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***IT-6001***

***Internal Taper Gage***

***OPERATION MANUAL***

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OMLIT60006-01

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Congratulations! Your decision to purchase a Gagemaker product above all others on the market demonstrates your confidence in our quality and workmanship.

To ensure the high performance and operation of our product, we urge you to use the included reference materials. They contain important information for proper setup and use of the equipment. Also, we recommend that you follow the care and maintenance tips in this manual to keep the equipment working in top condition.

If your questions have not been addressed in our reference materials, contact your local representative or a customer service representative at 713-472-7360.



## ***Introduction***

The IT-6001 gage inspects variations in connection taper of internal threads ranging from 4 ½"-20" and it will work with any depth of pipe. This model covers a specific range of connection sizes, making the IT-6001 gage very versatile and economical.

IT-6001 gages use precision contact points that seat in the thread of the part during inspection. The gage's indicator reports actual measurement readings. Each set of contact points is interchangeable to allow measuring different thread forms. Contact point diameters are manufactured to tolerances of  $\pm.0002$ ". The pitch of the thread and type of thread form determine the diameter of the contact points required for taking measurements (refer to the table for API Threads in the Setup Procedures section of this manual).

The IT-6001 includes ten extension rods that attach to the gage and allow measuring a range of diameters up to 20". Using the different sizes of the extension rods will give the IT-6001 gage the proper internal dimension for the part being inspected.

The IT-6001 gage requires no setting master to inspect parts. The contact points are seated in the threads of the part and the gage is properly positioned by sweeping to obtain the largest indicator reading. Taking measurements in two different locations along the length of the thread will detect any variations in taper.

## **Technical Support**

Phone: 713-472-7360

Hours: Monday – Friday 8AM – 5PM (CST)

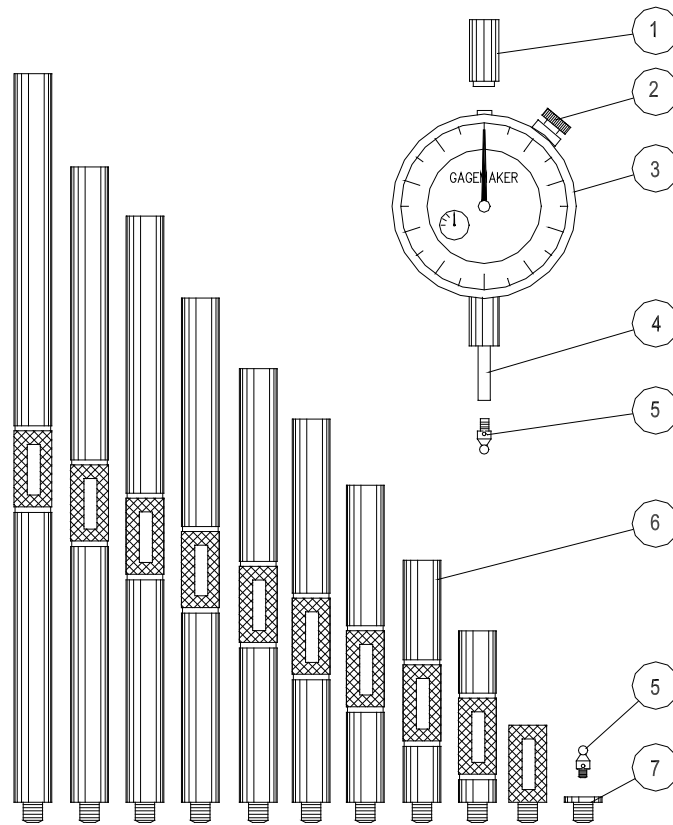
## **Product Information and Updates**

Visit our web site at: [www.gagemaker.com](http://www.gagemaker.com)



**System Components**

Take some time to become familiar with all the parts that make up the IT-6001 gage by reviewing the labeled diagram below. The part names are important for understanding the operating instructions.



**Component List**

Item	Description	Qty	Item	Description	Qty
1	Indicator cap	1	5	Contact point	2
2	Indicator clamp	1	6	Extension rods (sizes include: 5", 5 1/2", 6 5/8", 7", 7 5/8", 8 5/8", 9 5/8", 10 3/4", 11 3/4", 13 3/8")	10
3	Indicator	1	7	Contact point adapter	1
4	Indicator shaft	1			



**Setup Procedures**

**Setting Up the IT-6001 Gage**

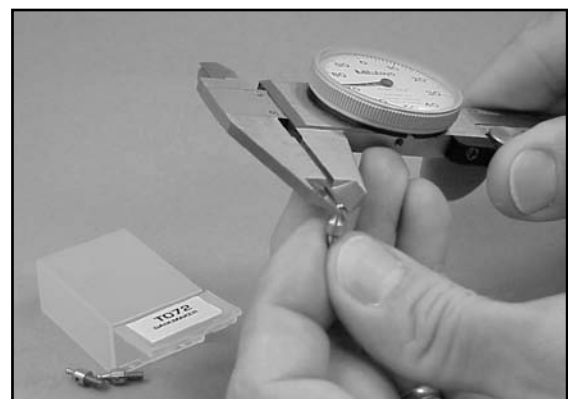
**Materials Needed:**

- IT-6001 gage
- Contact points (2)
- IT-6001 extension rods
- Calipers
- Paper clip

Setting up the IT-6001 gage, involves installing the proper size contact points for the application (refer to the table below for selecting the proper model contact point for API threads).

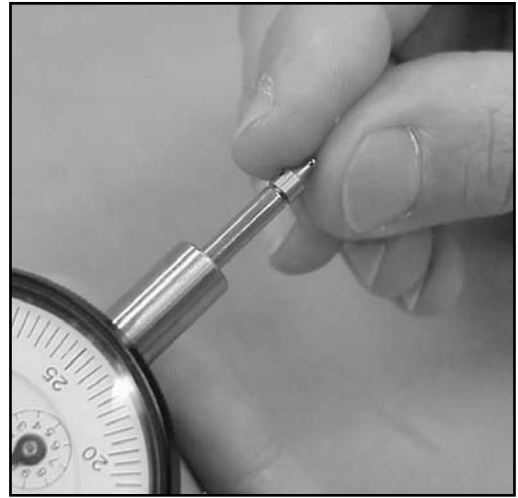
<b>API Threads</b>			
<b>Connection Type</b>	<b>Point Diameter</b>	<b>Pitch</b>	<b>Contact Point Model Number</b>
Hughes Slim Line H-90	0.235"	3	T235
All Hughes H-90	0.200"	3 ½	T200
API Rotary Shouldered Connections	0.144"	4	T144
API Rotary Shouldered Connections	0.128"	4 ½	T128
API Rotary Shouldered Connections	0.115"	5	T115
API Rotary Shouldered Connections	0.096"	6	T096
Buttress Casing - Taper	0.090"	5	T090
API Tubing, Casing and Line Pipe	0.072"	8	T072
API Tubing and Line Pipe	0.057"	10	T057
API Line Pipe	0.050"	11 ½	T050

1. Determine the size of contact points to be used, by the pitch of the thread and type of thread form being inspected.
2. Using calipers, verify the size of the contact point.



**Setting Up the IT-6001 Gage (continued)**

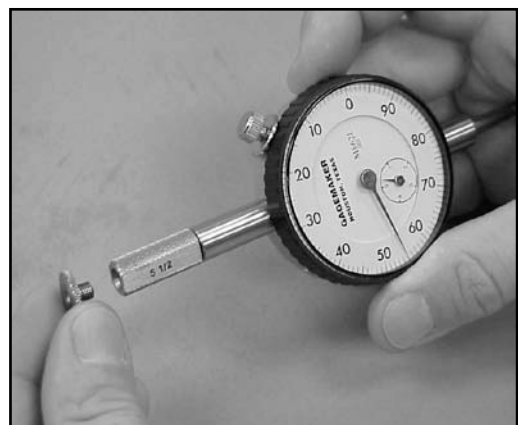
3. Screw one of the contact points into the threaded hole in the indicator shaft. Be sure that the contact point is fully seated.



4. If necessary, screw the proper size extension rod into the indicator shaft on the opposite end of the gage.

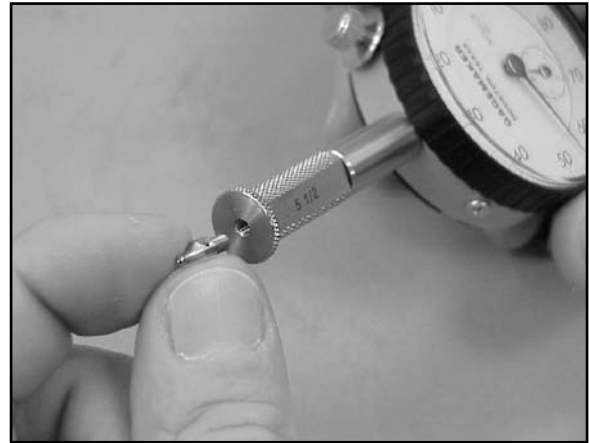


5. Screw the contact point adapter into the extension rod.



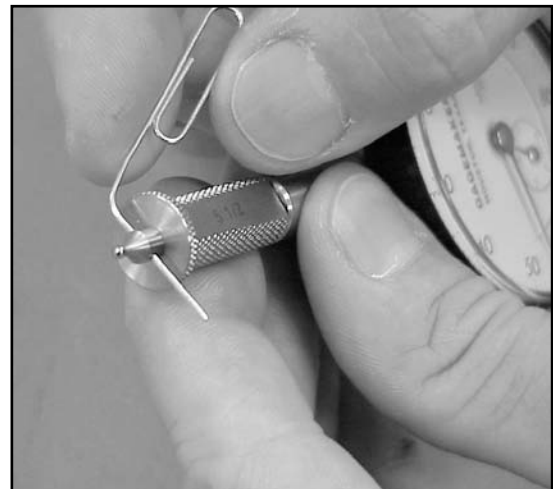
**Setting Up the IT-6001 Gage (continued)**

6. Screw the contact point into the contact point adapter.



**Do not** use pliers to tighten the contact points, as damage may result.

7. To secure the contact points, open a paper clip and insert it into the hole in the contact point's shaft. Rotate using moderate pressure to tighten the contact point.





## Operating Procedures

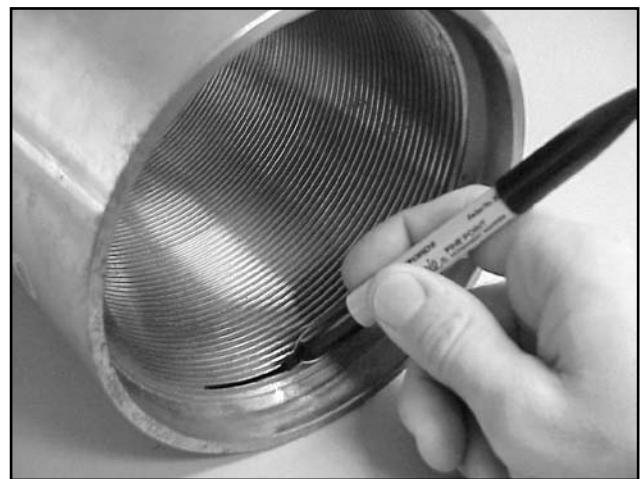
### Inspecting Parts

#### Materials Needed:

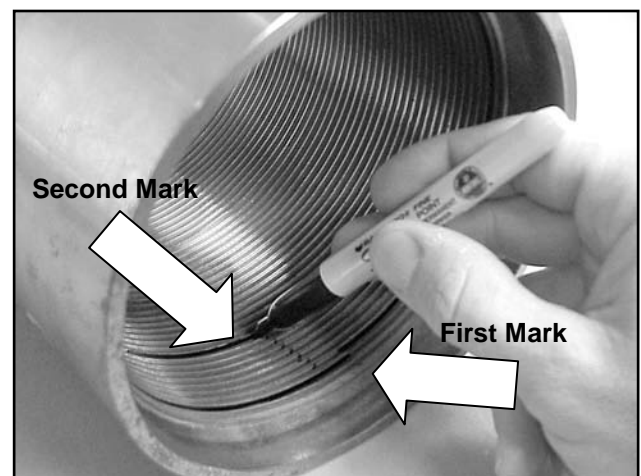
- IT-6001 gage
- Part
- Marking pen
- Inspection report

Inspecting parts using the IT-6001 gage requires no setting master. However, inspection does involve marking two inspection locations with a marking pen, which are 1" apart on the connection. This process ensures that the contact points will be placed in the same helical path of the thread during inspection.

1. Using a marking pen, draw one full revolution on the threads of the part being measured, starting at the first perfect thread.



2. Mark another full revolution on the threads of the part one inch back from the first mark. For example, for an 8 pitch thread, count back 8 threads.



**Inspecting Parts (continued)**

- 3. Seat the lower contact point into the first marked thread of the part.



- 4. Seat the upper contact point in the same marked thread of the part.



- 5. Using one side of the indicator shaft as a pivot, sweep the upper contact point side to side to locate the largest indicator reading.



## Inspecting Parts (continued)

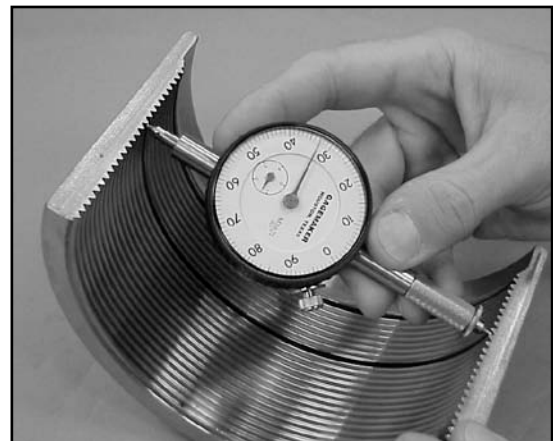
6. Turn the indicator dial on the IT-6001 gage to align the needle with zero.



7. Tighten the indicator clamp.
8. Record any deviations on an inspection or calibration report.



9. As shown in the cross section of the thread, remove the gage from the first marked thread and insert into the second marked thread.
10. Use one side of the indicator shaft as a pivot and sweep the upper contact point side to side to locate the largest indicator reading.
11. Record any deviations on an inspection or calibration report.
12. Compare the readings with the taper specified in API Specification 5B.



## ***Care and Maintenance***

### **Maintenance Tips**

- Keep all unprotected metal surfaces coated with light oil.
- Avoid dropping the gage or subjecting it to any vibration or impact.
- Keep the gage dry and away from any machine coolant spray.
- Do not force the movement of any of the mechanical parts. The mechanics are designed to move freely.
- Keep the indicator face clean.

### **Warranty Information**

GAGEMAKER warrants its products to be free from defects in material and workmanship for one year from the date of shipment. At our option, we will repair or replace any defective product upon prepaid return of properly packed cargo to our factory in Pasadena, Texas. This warranty applies to all products when used in a normal industrial environment. Any unauthorized tampering, misuse or neglect will make this warranty null and void. Under no circumstances will GAGEMAKER or any affiliate have any liabilities for loss or for any indirect or consequential damages. The foregoing warranties are in lieu of all other warranties expressed or implied, including but not limited to, the implied warranties of merchantability and fitness for a particular purpose.





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