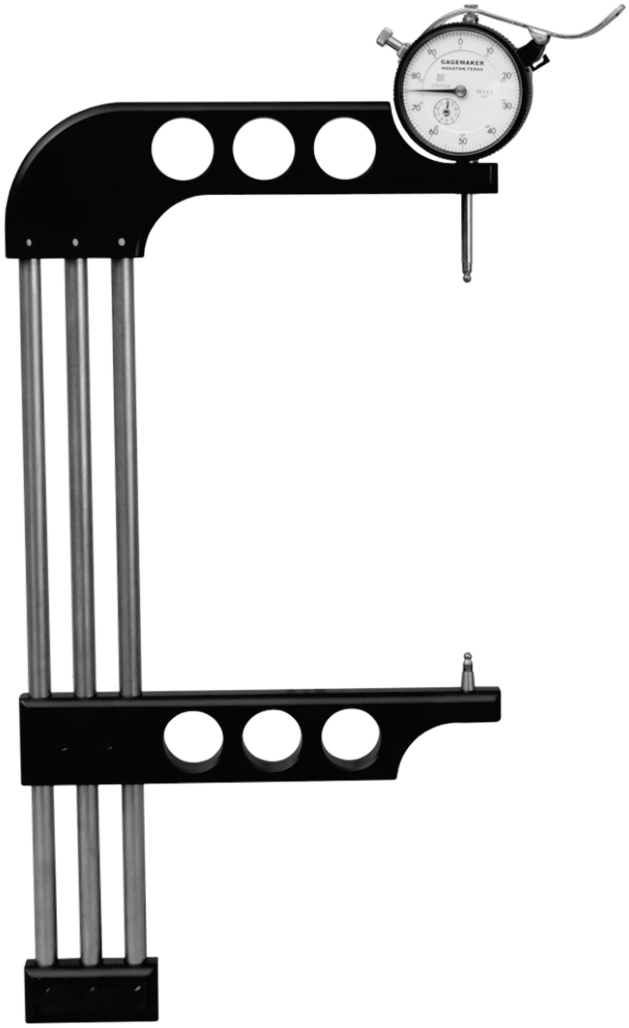
GAGEMAKER

ET-7000 Series
External Thread Taper Gage
OPERATION MANUAL



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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 ET-7000 series of gages inspect variations in connection taper of external threads ranging from 0”-24”. Each model covers a specific range of connection sizes, making the ET-7000 gages very versatile and economical.

The ET-7000 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 ±.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 ET-7000 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

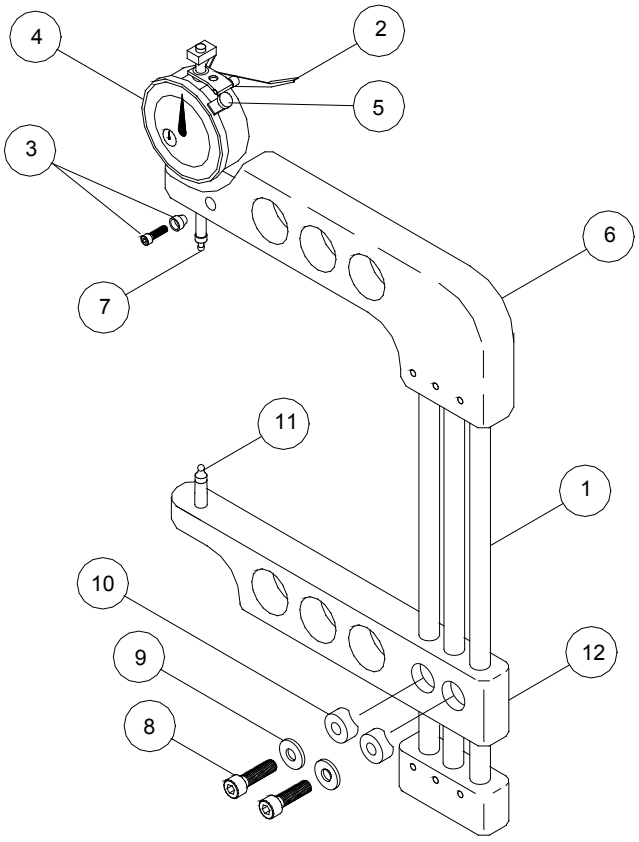
Phone: 713-472-7360
Hours: Monday – Friday 8AM – 5PM (CST)

Product Information and Updates

Visit our web site at: www.gagemaker.com

Parts List

Take some time to become familiar with all the parts that make up the ET-7000 gages by reviewing the labeled diagram below. The part names are important for understanding the operating instructions.



Item	Description	Part Number	Qty
1	Gage body rails (Model 7001)	4-1-724	3
1	(Models 7002, 7003)	4-1-725	3
1	(Models 7004, 7005)	4-1-726	3
1	(Models 7006, 7007)	4-1-727	3
2	Indicator retraction lever	21AZB151	1
3	Indicator binder nut/cap screw	4-0-310 / #6-32 x .312	1
4	Indicator (Models 7001, 7002, 7004, 7006)	862L	1
4	(Models 7003, 7005, 7007)	882L	1
5	Indicator bezel clamp	21RZA065	1
6	Upper arm assembly	4-0-751	1
7	Upper contact point	T072	1
8	Locking cap screws	¼-20 x .625	2
9	Washers	¼" FW	2
10	Rail clamps	4-0-762	2
11	Lower contact point	T072	1
12	Lower arm assembly	4-0-755	1

Set Up Procedures

Setting Up the ET-7000 Gage

Materials Needed:

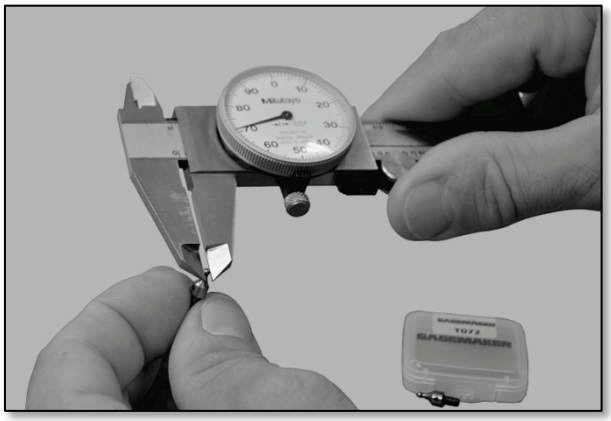
- ET-7000 taper gage
- Contact points (2)
- Calipers
- Paper clip

Setting up the IT-6000 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).

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

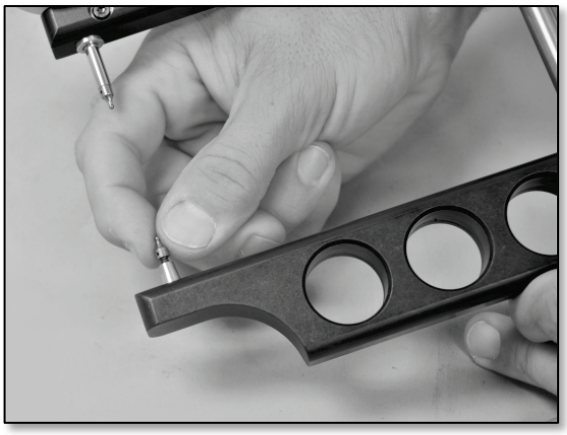
1. Determine the size of contact points to be used, by the pitch of the thread and type of connection being inspected.

2. Using calipers, verify the size of the contact point.



Setting Up the ET-7000 Gage (continued)

3. Install the contact point into the upper arm and another into the lower arm and tighten.



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

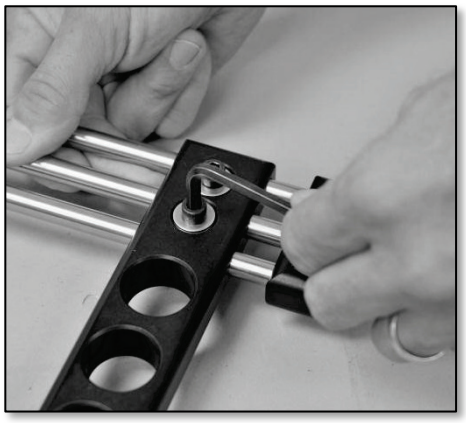
4. Once installed, insert a paper clip into the hole in each contact point and tighten.

Adjusting the ET-7000 Gage

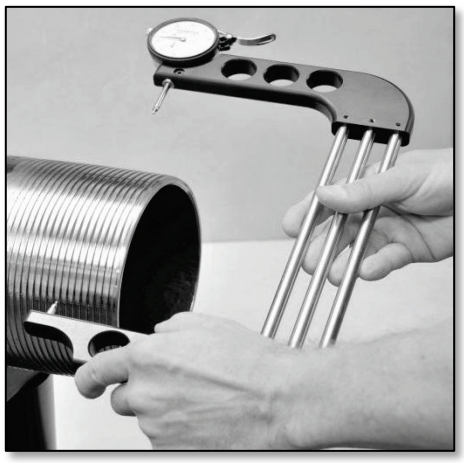
Materials Needed:

- ET-7000 taper gage
- Part
- 3/16” hex wrench

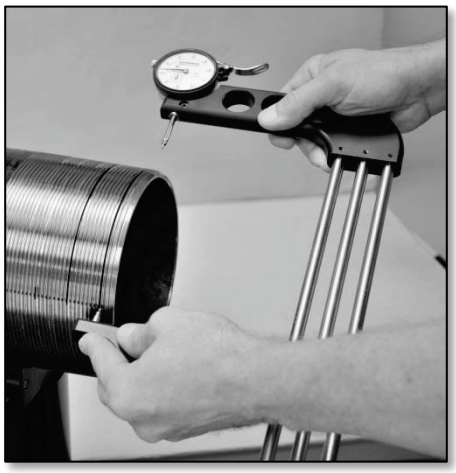
1. Use a 3/16” hex wrench to loosen the capscrews on the lower arm.



2. Slide the lower arm of the ET-7000 gage open enough to fit over the part.

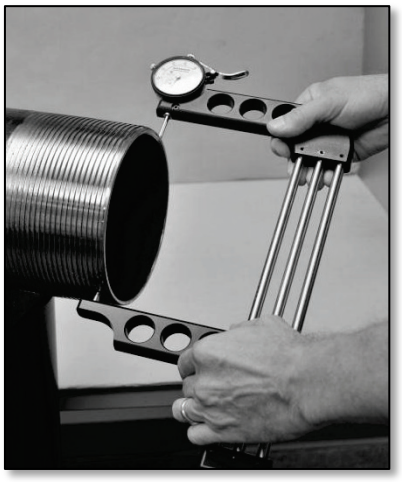


3. Seat the lower contact point into the first perfect thread of the part.

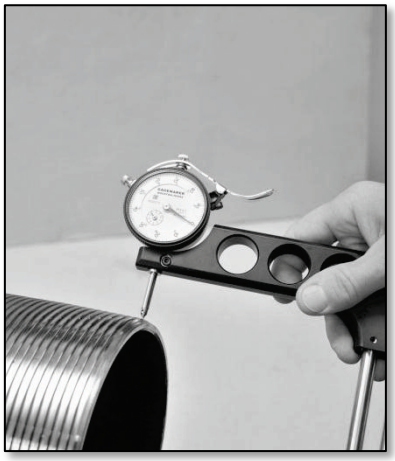


Adjusting the ET-7000 Gage (continued)

4. Adjust the lower arm to seat the upper contact point in the same thread of the part.

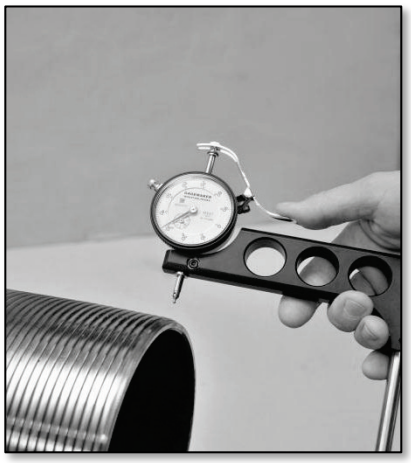


5. Continue to slide the lower arm until the indicator shows one revolution of preload.



6. Press the indicator retraction lever to remove gage from part.

7. Tighten the lower arm cap screws.



Operating Procedures

Inspecting Parts

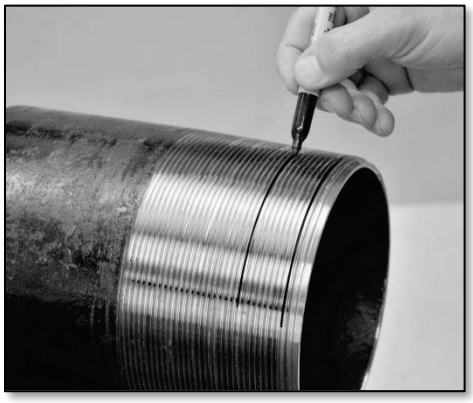
Materials Needed:

- ET-7000 taper gage
- Part
- Marking pen
- Ruler
- Inspection report

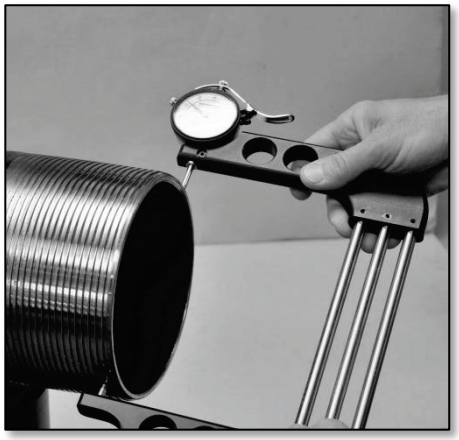
1. Using a marking pen, draw an axis line perpendicular to the threads on the part.

2. Draw one half revolution on the threads, starting at the first perfect thread. Draw another line 1” back from the first thread.

   This step ensures that you place the contact points in the same helical path during inspection.

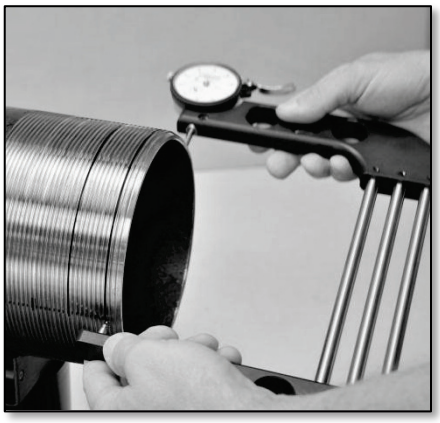


3. Loosen the indicator bezel and seat the lower contact point into the first marked thread and seat the upper contact point into the same thread.



Inspecting Parts (continued)

4. Using the lower contact point as the pivot point, sweep the gage from side to side to obtain the largest indicator reading.



5. Adjust the indicator bezel to align the needle with zero.

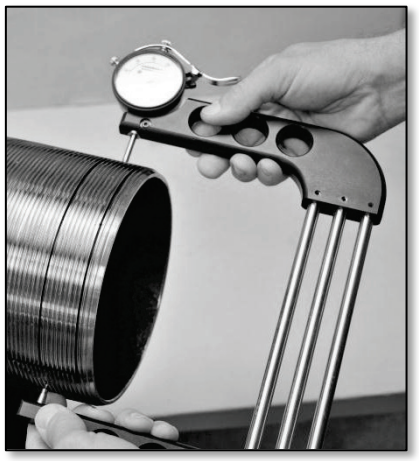
6. Press the indicator retraction lever to remove gage from part.

Inspecting Parts (continued)

7. Move to the gage to the second marked thread and sweep the upper contact point to obtain the largest indicator reading and determine if the part is within tolerance.

8. Record findings on the Inspection Report.

9. Verify repeatability of the gage periodically.



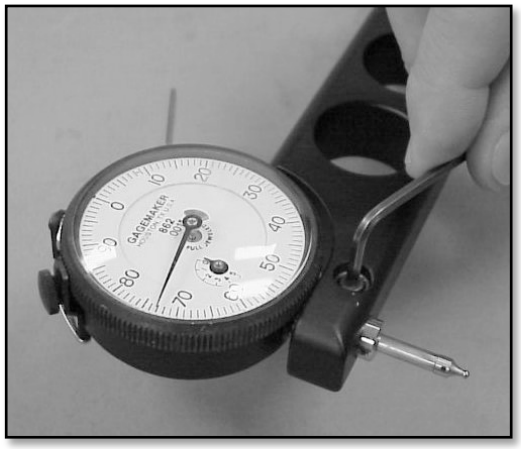
Care and Maintenance

Replacing the Indicator

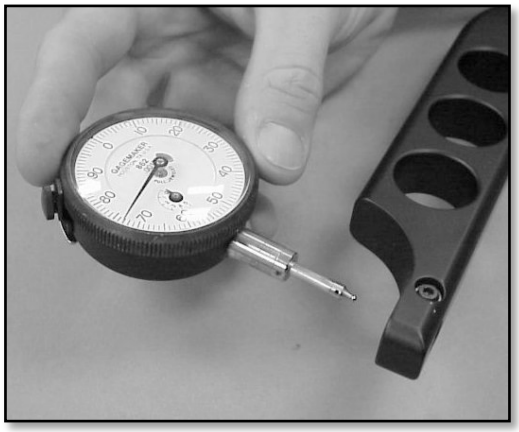
Materials Needed:

- ET-7000 taper gage
- Indicator
- 7/64” hex wrench

1. Using a 7/64” hex wrench, loosen the cap screw on the upper arm assembly.



2. Remove the indicator from the upper arm.



3. Insert the new indicator into the upper arm and tighten the cap screw.

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 under normal operating conditions for 12 months from the date of shipment. This warranty is limited to repairing, or at Gagemaker's option, replacing any product which is proven to have been defective at the time it was shipped and/or suffered damage during shipping; provided buyer has given Gagemaker written notice of any such claimed defect within 15 days of receipt. Any defective product must be properly packed and shipped to the Gagemaker factory in Pasadena, Texas USA. 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.

Products Requiring Repair or Calibration Return Process

1. Prior to sending any products to Gagemaker, please call 713-472-7360 and request a Returned Material Authorization (RMA) number from Sales.

2. Include a Purchase Order or work instructions with the returned product.

3. Return to: Gagemaker LP
   712 East Southmore Ave.
   Pasadena, TX 77502-110

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