

# Model HS

## Portable Bolt-Tension Calibrator



- Test impact wrench output
- Convert tool output to bolt-tension specs
- Set production preload standards
- Tests 1-1/8 through 1-1/2 inch high-strength bolts to 170,000 pound preloads

The Model H is a highly reliable direct-action hydraulic load cell instrument designed for use with high-strength bolts through 1-1/2 inch size. Direct dial readings to 170,000 pounds of bolt tension within 2% accuracy show the preload delivered. Recommended minimum bolt tensions are plainly indicated on the gage face. The Model H can be clamped to a convenient column or bench.

The model H is available with interchangeable bolt bushing and plate sets for each size bolt to be tested in a complete range through 1-1/2 inch bolt sizes. Adapters can be made for special applications.

### Torque-Control Wrenches:

Simple to calibrate! Run up nut with impact wrench until wrench stalls. Read the dial for pounds tension. If reading is too high or low, adjust torque setting accordingly and repeat using new bolt and nut.

### Conventional Impact Wrenches:

Set wrench air line regulator at desired power value. Run up nut until it stops rotating. Again, read the dial for pounds tension. Adjust regulator as necessary until wrench delivers desired bolt-tension dial reading.

### Turn-of-the-Nut:

Using the Model H Calibrator, determine "snug" condition (point at which tool begins to impact). From snug condition, operate impact wrench until proper rotation is obtained. Resultant bolt-tension is shown on the dial.

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### Wrench calibrating procedure

1. Clamp calibrator on beam or column.
2. Install front plate for bolt size being used (Part 5).
3. Install matching rear bolt Bushing (Part 6).
4. Insert bolt from bushing side; Washer and nut from plate side.
5. Tighten nut with impact wrench.
6. Adjust wrench control up or down to achieve desired dial reading.
7. Use new bolt and nut for each test.
8. Check calibration daily of production wrenches.

# Skidmore Wilhelm

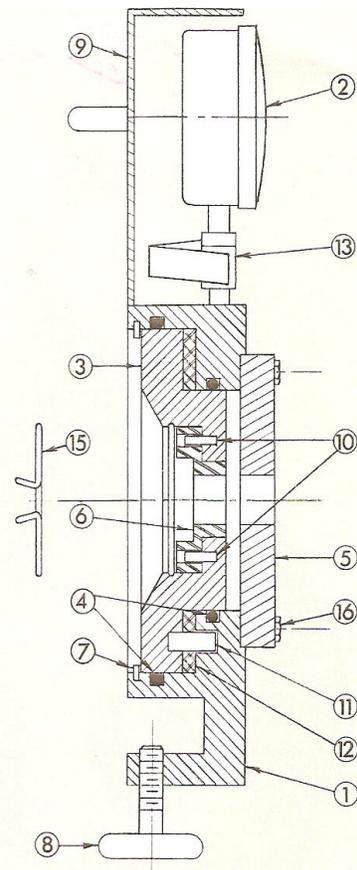
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Testing for maintenance—The Model H Calibrator can be used in maintenance programs to develop accurate records of impact tool performance. In this program, new impact wrenches are tested for bolt-tension output at specific power settings. Any subsequent bolt-tension drop indicated by a lower reading on the dial signals need for maintenance. File card records can be kept by serial number to show last test and performance.

Hardened Test Set—Three hardened, ground Bolt and Nut Test Sets can be supplied in standard bolt sizes of 1", 1-1/4", and 1-1/2" for use in maintenance test procedures. These wear and deformation resistant test sets provide a constant standard for comparative testing.

Engineering Preload Specifications—Standard specifications for bolt-tension or joint preload can be established for different types of interface materials. Effects of plating and lubrication are just two of the variables that can be tested.

The calibrator also can be used to establish preload criteria, such as bolt-tension required for yield and ultimate load expressed in pounds. This provides a practical working set of figures, as opposed to straight tensile tests.



### PARTS LIST

| Part No. | Description                                 |
|----------|---|
| H-1      | Body  |
| H-2      | Gage 0-170,000#<br>(graduations to 175,000) |
| H-3      | Piston                                      |
| H-4      | Set of Packing                              |
| H-7      | Snap Ring                                   |
| K-11     | 3/8" Dowel Pin                              |
| K-13     | 5/8" Dowel Pin                              |
| M-8      | Wing Screws                                 |
| M-9      | Guard                                       |
| M-12     | Oil S.A.E. 40<br>(non-detergent)            |
| M-13     | Gage Saver                                  |
| ML-16    | Screws                                      |
| H-17     | Carrying Case                               |

### BOLT BUSHING AND PLATE PART NUMBERS

| Plate | Standard Bushing | Heavy Hex Bushing | Size   |
|-------|------------------|-------------------|--------|
| H-518 | H-618            | H-718             | 1 1/8" |
| H-520 | H-620            | H-720             | 1 1/4" |
| H-522 | H-622            | H-722             | 1 3/8" |
| H-524 | H-624            | H-724             | 1 1/2" |