INSTRUCTION MANUAL

HOW TO USE FASTENER GAGES

PIN POSITION AND PIN POSITION & SWAGE
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Cover Illustration: A typical “Pin Position and Swage Gage” being used to inspect an installed fastener. The Touch–No–Go end is being used and shows that the pin used is not too long for the thickness of the material being fastened and that the collar has been sufficiently swaged.
In addition to visual inspection, installed Huckbolt® Fasteners may be inspected using Huck HG inspection gages. “Pin Position” gages have been designed to inspect the position of the installed pin or stump in relation to the sheet line or work surface. This either (1) verifies that the correct length pin or stump was used or (2) indicates that the incorrect length (too long or too short) was used. “Pin Position and Swage” gages, in addition to determining if the proper length pin or stump was used, also have been designed to inspect the swaged collar to determine if the collar is completely or sufficiently swaged.

The proper HG gage to use for each installed fastener is designated on the applicable page in the Huck Fastener Standards Manual or in NAS 1080. For special applications involving unusual combinations of pins or stumps and collars, consult the Huck representative or Huck Engineering.
Note that the gages for Shear Pull Type and Shear/Tension Pull Type Fasteners are Pin Position Gages only. Therefore, Swaged Collars are visually inspected as follows:

**BEADED COLLARS**

- NOT SWAGED: REJECT
- PARTIALLY SWAGED: REJECT
- FULLY SWAGED: ACCEPT

**DOUBLE END COLLARS**

- NOT SWAGED: REJECT
- PARTIALLY SWAGED: REJECT
- SWAGED .7H MINIMUM: ACCEPT
The following pages illustrate the use of various "Pin Position" and "Pin Position and Swage Gages". In each application, the gage is held perpendicular to the work and centered over the installed fastener.

When collars are installed against slopes, use the gage in plane A-A.

**NOTE**

"Pin Position" gages have been designed to inspect installed fasteners only. They are not grip gages for determining the grip or length of pin or stump to be used. Use Huck Grip Gage, P/N 105093 or other measuring tool to determine the thickness of the material to be fastened (grip) and the fastener length (grip dash number to be used.

GRIP is the total thickness of the material to be fastened or joined.

GRIP DASH NUMBER is the corresponding grip range of the pin or stump as specified on the applicable Product Standards Sheet.
How To Use HUCK Pin Position GAGES* FOR INSTALLED SHEAR PULL TYPE FASTENERS

POINTS TOUCH PIN. GRIP IS NOT OVER MAXIMUM.

POINTS DO NOT TOUCH PIN. GRIP IS OVER MAXIMUM.

POINTS DO NOT TOUCH PIN. GRIP IS NOT UNDER MINIMUM.

POINTS TOUCH PIN. GRIP IS UNDER MINIMUM.

ACCEPT REJECT ACCEPT REJECT

*SHEAR PULL TYPE HG76 & HG90

Note: Both ends of the gage must ACCEPT.
How To Use **HUCK** Pin Position & Swage **GAGES***

FOR INSTALLED TENSION PULL TYPE FASTENERS

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**ACCEPT**

*TENSION PULL TYPE HG85 EXCEPT HG85-10*

**REJECT**

**ACCEPT**

**REJECT**

Note: Both ends of the gage must ACCEPT
How To Use HUCK Pin Position & Swage GAGE HG85-10

STEP 1a

STEP 1b

STEP 2a

STEP 2b

STEP 3a & b

ACCEPT

REJECT

ACCEPT

REJECT

ACCEPT

REJECT

STEP 1: USE START
a. IF COPPER PLATE FINISH TOUCHES THE SHEET, SEE 2 BELOW.
b. IF BLACK TOUCHES THE PIN, SEE 3 BELOW.

STEP 2: USE COPPER PLATE FINISH
a. CHECK PIN POSITION (LEGS MUST NOT TOUCH THE SHEET).
b. CHECK SWAGE (LEGS MUST TOUCH THE SHEET).

STEP 3: USE BLACK
a. CHECK PIN POSITION (LEGS MUST TOUCH THE SHEET).
b. CHECK SWAGE (LEGS MUST TOUCH THE SHEET).
How To Use HUCK Stump Position And Swage GAGES*
FOR INSTALLED SHEAR AND TENSION STUMP TYPE FASTENERS

POINT TOUCHES STUMP. GRIP IS NOT OVER MAXIMUM.

POINTS DO NOT TOUCH STUMP. GRIP IS OVER MAXIMUM.

POINT A DOES NOT TOUCH STUMP. GRIP IS NOT UNDER MINIMUM AND/OR POINTS B DO NOT TOUCH COLLAR. COLLAR IS SWAGED ENOUGH.

POINT A TOUCHES STUMP. GRIP IS UNDER MINIMUM AND/OR POINTS B TOUCH COLLAR. COLLAR NOT SWAGED ENOUGH.

ACCEPT      REJECT

ACCEPT      REJECT

* SHEAR STUMP TYPE HG75 EXCEPT HG75-6 & HG75-7 AND TENSION STUMP TYPE HG34D.

Note: Both ends of the gage must ACCEPT.
How To Use **HUCK** Pin Position & Swage GAGES HG75-6 & HG75-7

**STEP 1: **POINT TOUCHES STUMP, GRIP IS NOT OVER MAXIMUM. **ACCEPT**

**STEP 2: **IF POINT DOES NOT TOUCH PIN, GO TO **STEP 3. IF POINT TOUCHES STUMP, GO TO STEP 4.**

**STEP 3: **POINT A DOES NOT TOUCH STUMP, GRIP IS NOT UNDER MINIMUM. POINTS B DO NOT TOUCH COLLAR, COLLAR SWAGED ENOUGH. **ACCEPT**

POINTER A TOUCHES STUMP, GRIP IS UNDER MINIMUM AND/OR POINTS B TOUCH COLLAR, COLLAR NOT SWAGED ENOUGH. **REJECT**

**STEP 4: **SAME PROCEDURE AS **STEP 3 EXCEPT USE SIDE 4 OF GAGE.**

Note: Both Step 1 and Step 3 or Step 4 must **ACCEPT.**

**ACCEPT**

**GO TO**

**ACCEPT**

**GO TO**

**ACCEPT**

**GO TO**

**REJECT**

**REJECT**

**ACCEPT**

**REJECT**

GRIP GREATER THAN NOMINAL

GRIP LESS THAN NOMINAL
How To Use **HUCK** Pin Position & Swage **GAGES*** 

FOR INSTALLED C50L PULL TYPE FASTENERS

POINTS A TOUCH PIN. FACE B DOES NOT TOUCH TOP OF COLLAR. GRIP IS NOT OVER MAXIMUM.

FACE B RESTS ON TOP OF COLLAR. POINTS C DO NOT TOUCH PIN, GRIP IS NOT UNDER MINIMUM AND COLLAR HAS BEEN SWAGED TO THE PROPER DIAMETER AND DEPTH.

*HG95
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