

Red Deer Ironworks

RDI Wear Gauge Kit Operation and Maintenance Manual

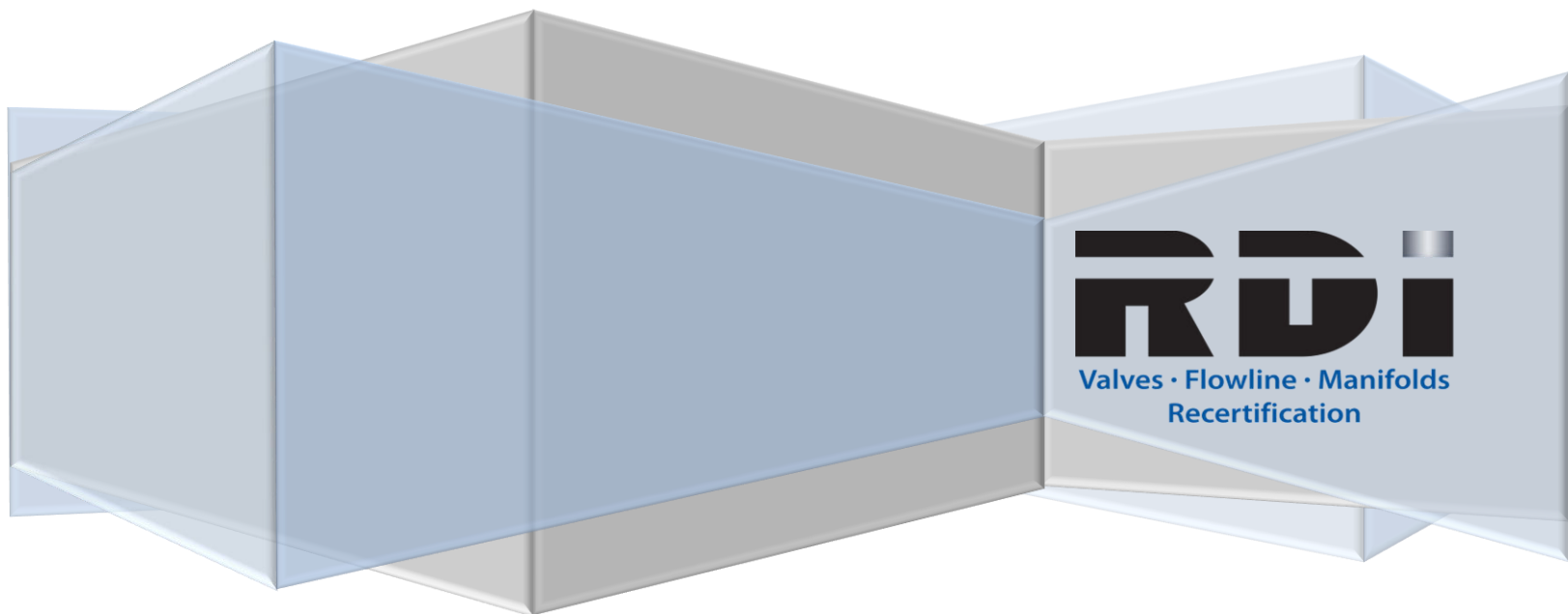


Table of Contents

1. GAUGE KIT BILL OF MATERIALS	3
2. GAUGE TESTING PROCEDURES.....	3
2.1. GAUGE # 1 - Wing Nut Testing Procedure	3
2.2. GAUGE # 2 - Wing Nut Testing Procedure	4
2.3. GAUGE # 3 - Female Sub Testing Procedure.....	4
2.4. GAUGE # 4 - Female Sub Testing Procedure.....	5
2.5. GAUGE # 5 and # 7 - Male Sub Testing Procedure (Detachable)	5
2.6. GAUGE # 6 and # 8- Male Sub Testing Procedure (Non- Detachable)	6
2.7. GAUGE # 5 and # 7 - Segment Testing Procedure	6
2.8. GAUGE # 9 – Ball Race Testing Procedure	7
3. The safest course of action is to destroy any parts after they have been removed from service. ...	8
4. GAUGE TESTING FREQUENCY	8
4.1. Gauge Calibration.....	8
RDI Sales & Service Centers	9

1. GAUGE KIT BILL OF MATERIALS

1.1. Each kit includes eight or nine gauges (depending on the thread size) as listed below.

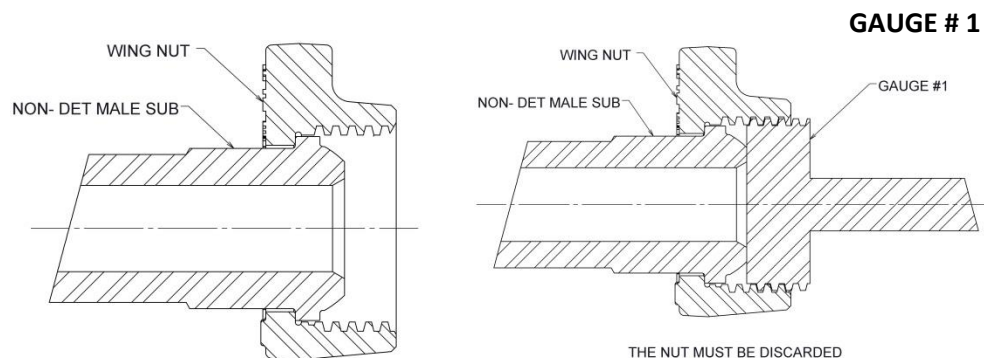
Gauge Name	Measurement Area	Designation #
No-Go Plug Gauge	Male Thread Width	1
No-Go Plug Gauge	Male Thread Minor Diameter	2
No-Go Ring Gauge	Female Thread Width	3
No-Go Ring Gauge	Female Thread Major Diameter	4
No-Go Hook Gauge for Detachable RDI Style Male Sub	Detachable Male Sub Shoulder Width	5
No-Go Hook Gauge for Non-Detachable RDI Style Male Sub	Non-Detachable Male Sub Shoulder Width	6
No-Go Hook Gauge for Detachable FMC-Style Male Sub	Detachable Male Sub Shoulder	7
No-Go Hook Gauge for Non-Detachable FMC-Style Male Sub	Non-Detachable Male Sub Shoulder	8
Go/No-Go Ball Race Gauge	Swivel Joint Ball Race Wear	9

2. GAUGE TESTING PROCEDURES

2.1. GAUGE # 1 - Wing Nut Testing Procedure

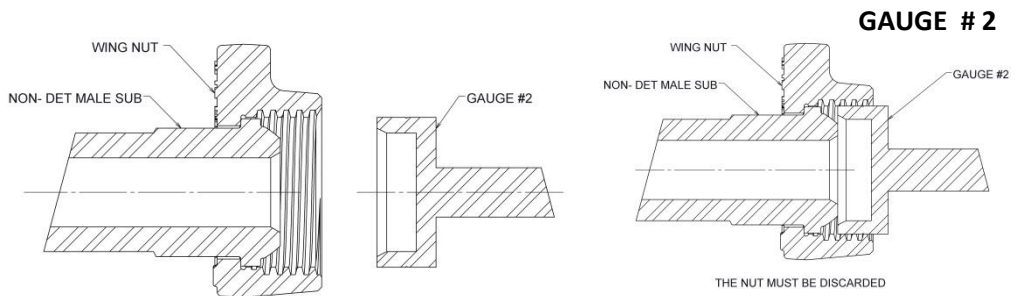
- 2.1.1. Ensure parts to be measured and gauge are clean.
- 2.1.2. Attempt to thread gauge #1 into the wing nut until gauge #1 is hand tight.
- 2.1.3. Note the number of turns it takes to unscrew gauge #1 out of the wing nut.
- 2.1.4. If gauge #1 turns more than one full revolution before disengaging from the wing nut, the wing nut must be removed from service due to excessive wear.
- 2.1.5. If gauge #1 turns less than one revolution before disengaging from the wing nut, the wing nut may continue to be used.

NOTE: If the side of the thread of the wing nut is deformed as a result of wear it may prevent the gauge from being able to thread in. Also, in the case of excessive wing nut wear, the gauge may be loose enough to twist and then bind into the flanks of the thread, giving a false “No-Go” result. This can be avoided by gently tapping the gauge in order to ensure it is correctly aligned.



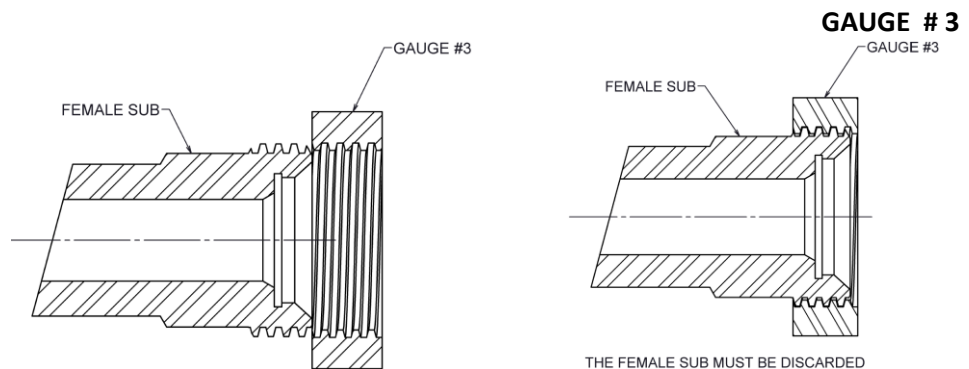
2.2. GAUGE # 2 - Wing Nut Testing Procedure

- 2.2.1. Ensure parts to be measured and gauge are clean.
- 2.2.2. Attempt to push gauge # 2 into the threads of the wing nut.
- 2.2.3. Look for the groove on gauge # 2 while the gauge is pushed in as far as it will go.
- 2.2.4. If the groove is not visible at this point, the wing nut must be removed from service since the minor diameter is excessively worn.
- 2.2.5. If the groove is visible while the gauge is pushed in, the wing nut may continue to be used.



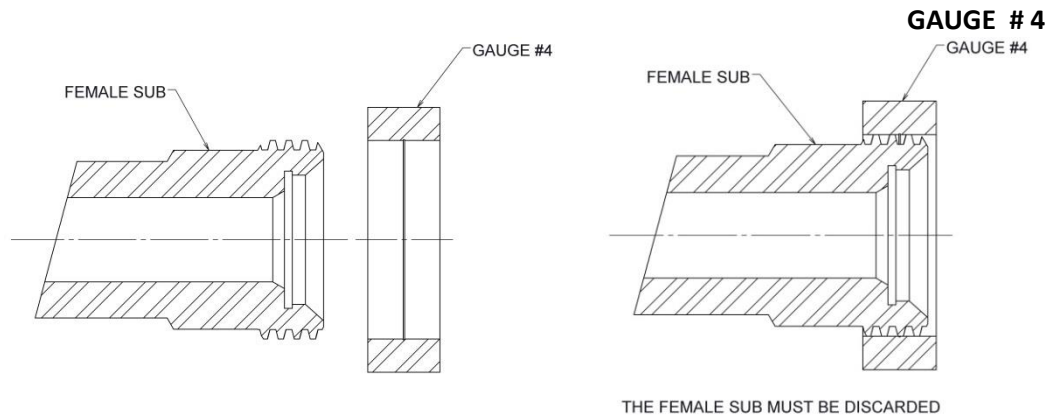
2.3. GAUGE # 3 - Female Sub Testing Procedure

- 2.3.1. Ensure parts to be measured and gauge are clean.
- 2.3.2. Attempt to thread gauge # 3 onto the female sub until gauge # 3 is hand tight.
- 2.3.3. Note the number of turns it takes to unscrew gauge # 3 from the female sub.
- 2.3.4. If gauge # 3 turns more than one full revolution before disengaging from the female sub, the female sub must be removed from service due to excessive wear.
- 2.3.5. If gauge # 3 turns less than one revolution before disengaging from the female sub, the female sub may continue to be used.



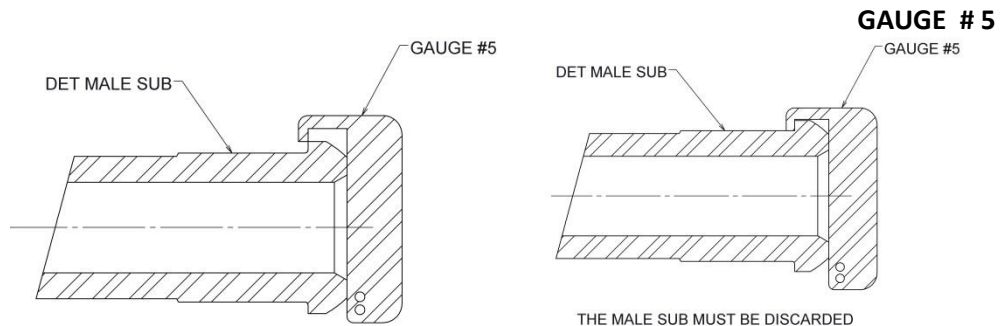
2.4. GAUGE # 4 - Female Sub Testing Procedure

- 2.4.1. Ensure parts to be measured and gauge are clean.
- 2.4.2. Attempt to push gauge # 4 over the threads of the female sub.
- 2.4.3. Look for the groove on gauge # 4 while the gauge is pushed as far as possible over the female sub.
- 2.4.4. If the groove is not visible at this point, then the female sub must be removed from service due to excessive wear.
- 2.4.5. If the groove is visible while the gauge is pushed over the female sub, then the female sub may continue to be used.



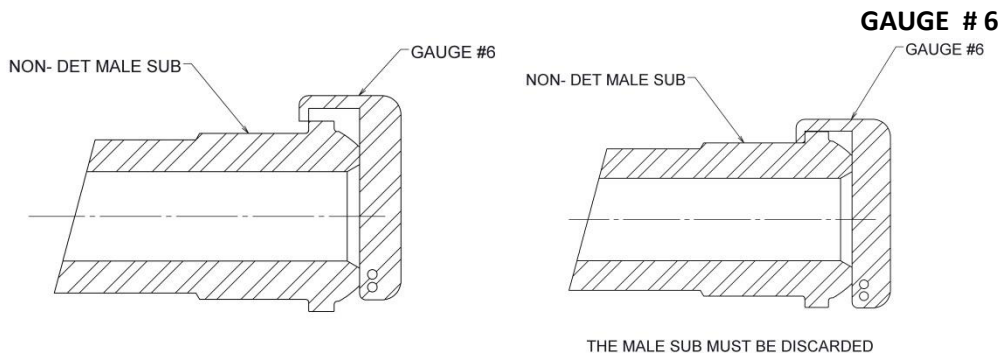
2.5. GAUGE # 5 and # 7 - Male Sub Testing Procedure (Detachable)

- 2.5.1. Ensure parts to be measured and gauge are clean.
- 2.5.2. Attempt to slide gauge # 5 over the male sub shoulder as illustrated below.
- 2.5.3. If the hook can slide over the shoulder while the edge of gauge # 5 lines up parallel to the face of the male sub, the sub must be removed from service.
- 2.5.4. If the hook cannot slide over the shoulder while the edge of gauge # 5 is parallel with the face of the male sub, the sub may continue to be used.
- 2.5.5. This testing procedure must be successfully performed on at least three locations spaced equally around the male end to ensure that it is not excessively worn.



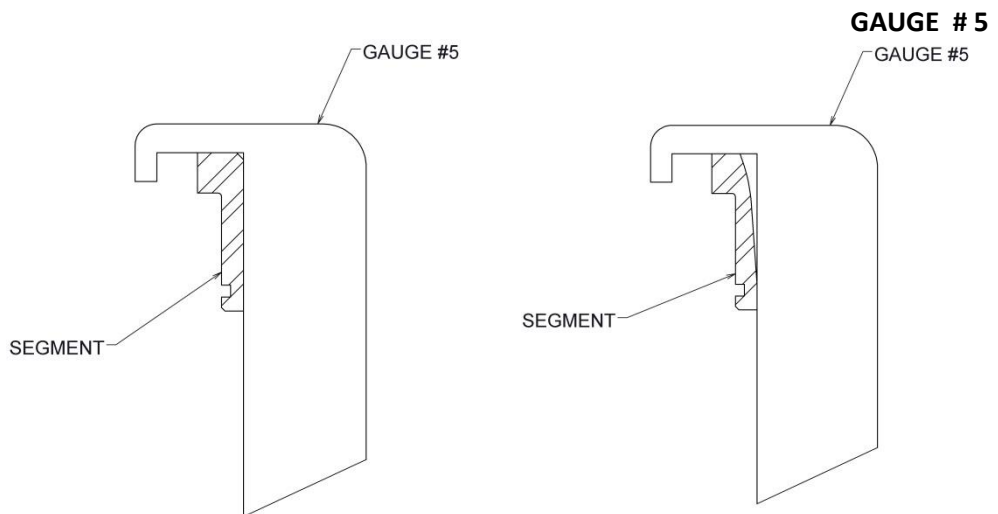
2.6. GAUGE # 6 and # 8- Male Sub Testing Procedure (Non- Detachable)

- 2.6.1. Ensure parts to be measured and gauge are clean.
- 2.6.2. Attempt to slide gauge # 6 over the male sub shoulder as illustrated below.
- 2.6.3. If the hook can slide over the shoulder while the edge of gauge # 6 lines up parallel to the face of the male sub, the sub must be removed from service.
- 2.6.4. If the hook cannot slide over the shoulder while the edge of gauge # 6 is parallel with the face of the male sub, the sub may continue to be used.
- 2.6.5. This testing procedure must be successfully performed on at least three different locations spaced equally around the male end to ensure that it is not excessively worn.



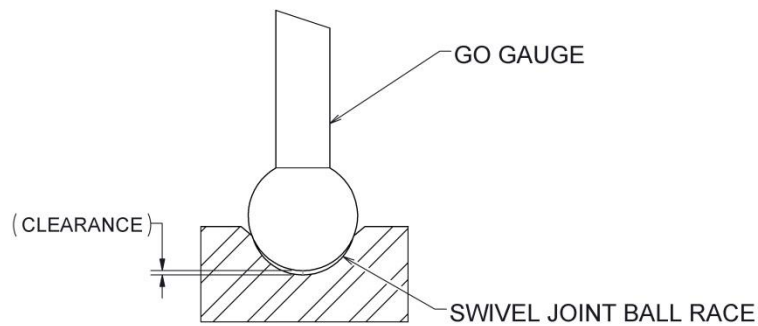
2.7. GAUGE # 5 and # 7 - Segment Testing Procedure

- 2.7.1. Ensure parts to be measured and gauge are clean
- 2.7.2. Insert each segment into the hook of gauge # 5 as illustrated below.
- 2.7.3. If either or both surfaces do not line up parallel to gauge # 5, the segment must be removed from service.
- 2.7.4. If both surfaces line up parallel to gauge # 5, the segment may continue to be used.



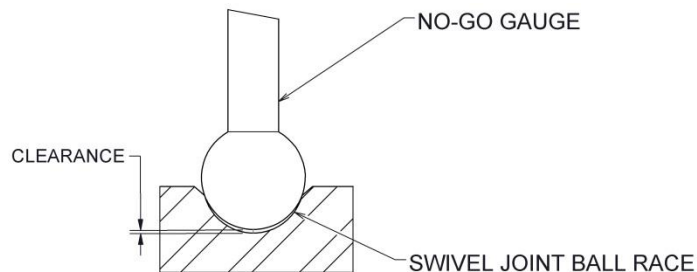
2.8. GAUGE # 9 – Ball Race Testing Procedure

- 2.8.1. Ensure parts to be measured and gauge are clean.
- 2.8.2. Insert the “Go” (small) end into the ball race.
- 2.8.3. If there is a gap between the “Go” gauge and the bottom of the ball race the ball race may continue to be used.
- 2.8.4. If there is no gap between the “Go” gauge and the bottom of the ball race insert the “No-Go” end into the ball race.
- 2.8.5. If at this point there is clearance between the “No-Go” gauge and the ball race the ball race may continue to be used.
- 2.8.6. If, however, there is no clearance between the “No-Go” gauge and the ball race the swivel joint may not continue to be used as it is worn out.



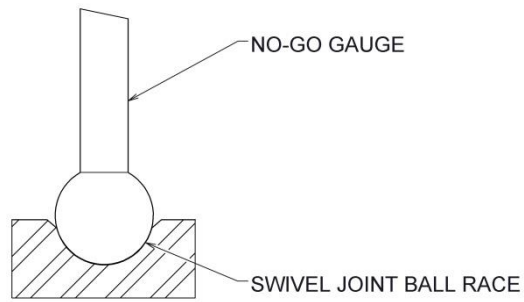
CLEARANCE

Clearance with “GO” gauge indicates the ball race may continue to be used.



CLEARANCE

If there is no clearance when checking with the “Go” gauge, try the “No-Go” Gauge.
If there is clearance with the “No-Go” gauge at this point the ball race may continue to be used.



NO CLEARANCE

If there is no clearance when using the "No-Go" gauge, the ball race must be removed from service.

3. **The safest course of action is to destroy any parts after they have been removed from service.**

4. **GAUGE TESTING FREQUENCY**

The end user is responsible to determine the frequency of gauge testing, as the frequency should be proportional to the amount of makeups and breakouts that are expected to occur.

4.1. **Gauge Calibration**

Each kit will contain the calibration records for each of the gauges and it is the responsibility of the end user to ensure that the gauges are kept in calibration.

4.1.1. **Part Numbers**

a. **Complete Gauge Kit for 2" Figure 1502 Weco Union TG21502-A001**

Carrying Case TG21502-K001	Gauge # 5 TG21502-P005
Gauge # 1 TG21502-P001	Gauge # 6 TG21502-P006
Gauge # 2 TG21502-P002	Gauge # 7 TG21502-P007
Gauge # 3 TG21502-P003	Gauge # 8 TG21502-P008
Gauge # 4 TG21502-P004	Gauge # 9 TG21502-P009

b. **Complete Gauge Kit for 3" Figure 1502 Weco Union TG31502-A001**

Carrying Case TG31502-K001	Gauge # 5 TG31502-P005
Gauge # 1 TG31502-P001	Gauge # 6 TG31502-P006
Gauge # 2 TG31502-P002	Gauge # 7 TG31502-P007
Gauge # 3 TG31502-P003	Gauge # 8 TG31502-P008
Gauge # 4 TG31502-P004	

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