



Model: See Affected Equipment

Serial #: N/A

Apr. 22, 2022

Product Bulletin # CDS-010

Alert



ICDS Grapple Retention Retrofit Solution

Issue

An incident occurred in which two ICDS tool grapples came loose and fell to the rig floor. Canrig recommends the following course of action to prevent such incidents from occurring in the future.

Affected Equipment

All the 9-5/8" to 13-3/8" ICDS tools regardless of the date of manufacture.

Background

With the current 9-5/8" to 13-3/8" ICDS design, the grapples are required to be securely fastened when rotating while the grapples are NOT stabbed into the casing. Refer to the CDS Installation and Operations Guide – Document # 883003 (Currently Rev. 16 at the time this bulletin was published) for related Warnings and Information on when and how to securely fasten the grapples.

A dropped-object incident occurred directly caused by a malfunctioning top drive. During the troubleshooting, the top drive suddenly and unintentionally rotated at approximately 90 rpm while the grapples of the 18-5/8" ICDS tool were NOT stabbed into the casing. In these very rare conditions, the generated centrifugal force allowed the grapples to move away from the mandrel and collide with the CDS Links. As a result two heavily damaged grapples fell to the rig floor. There was no personnel injury.

9-5/8" to 13-3/8" ICDS tools and 18-5/8" ICDS tools have a similar design.

A grapple retention retrofit solution is recommended to prevent a similar dropped-object incident under the same unusual conditions.



Model: See Affected Equipment

Serial #: N/A

Apr. 22, 2022

Alert

Action Recommended

Take the actions to retrofit the 9-5/8" to 13-3/8" ICDS tools by following the steps 1 to 7 below.

1. Dismantle the CDS – See Figure 1 and Figure 2 (Casing Stop Bumper and Collar and Spearhead Assembly not shown).

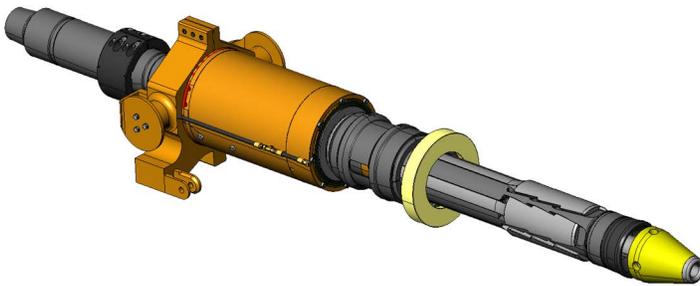


Figure 1

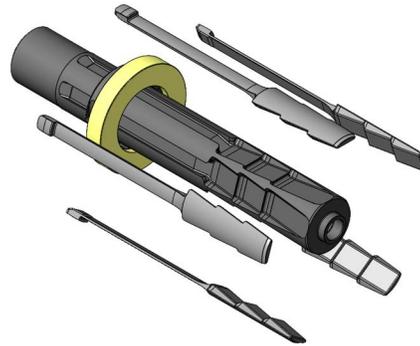


Figure 2

- Remove the Spearhead Assembly and Grapples from the CDS tool.
- Refer to the CDS Installation and Operations Guide – Document # 883003 for instructions on how to remove the grapples.
- Determine the grapple serviceability:
Refer to the CDS Maintenance Guide – Document # 883004 (Currently Rev. 17 at the time this bulletin was published).
- Disassemble the Mandrel from the CDS actuator and determine serviceability:
Refer to the CDS Maintenance Guide – Document # 883004 for instructions on how to break-out the mandrel and determine serviceability.



Model: See Affected Equipment
Serial #: N/A

Apr. 22, 2022

Alert

- Modification of 'on-hand' Mandrel(s) – P/N: 15406, 15406-1 or 15406-2 – See Figure 3.

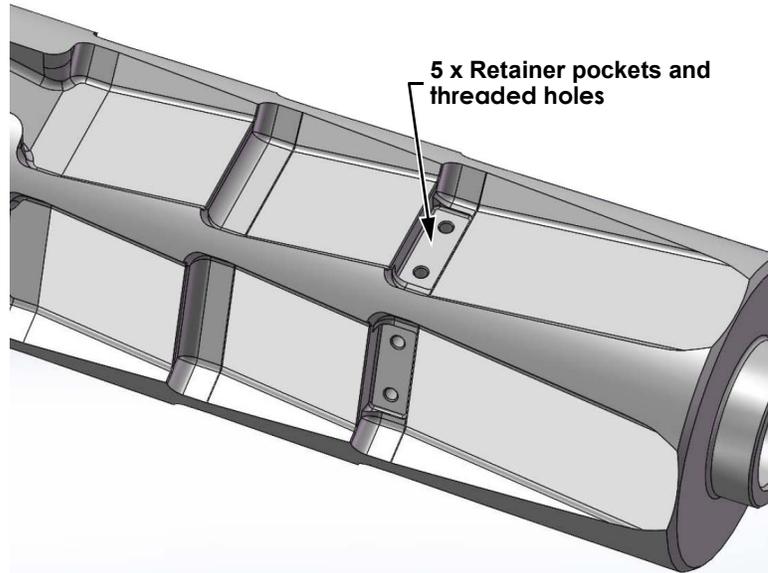


Figure 3

- Machine the slots, drill and thread the holes as per P/N: 5101761 – Mandrel, 9-5/8" – Modified for grapple retention.
- Refer to Appendix A for drawing 5101761.

- Modification of 'on hand' Grapples – (all grapple sizes 9-5/8" to 13-3/8") - qty. 5 per set – See Figure 4.

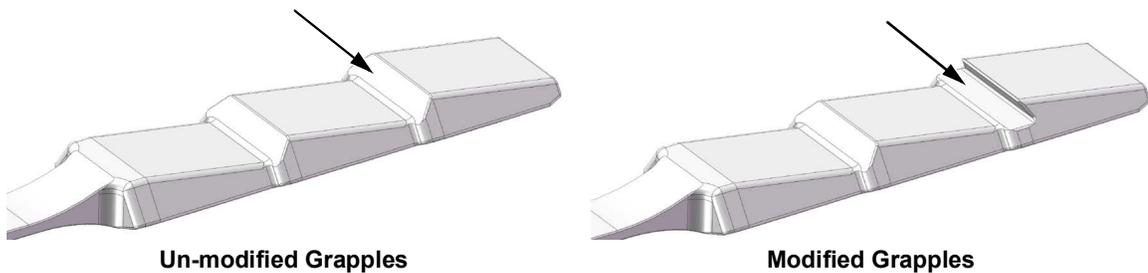


Figure 4

- If it is determined that the grapples are still serviceable, modify the grapples as per P/N: 5101762 – Grapple, 9-5/8" to 13-3/8", Modified for retention.
- Refer to Appendix B for drawing 5101762.



Model: See Affected Equipment Serial #: N/A	Apr. 22, 2022
Alert	

- Grapples that qualify for modification/retrofit:

Drawing # 80183102 Rev 7 – 9-5/8" to 13-3/8" Casing

Casing		Part No.
NOM. DIA	WEIGHT	
9-5/8"	32.3–40 lb	15407
9-5/8"	43.5–53.5 lb	15408
9-5/8"	57.4–64.9 lb	15409
9-5/8"	70.3–75.6 lb	15410
10-3/4"	32.75–45.5 lb	820041
10-3/4"	51.0–60.7 lb	820042
10-3/4"	65.7–73.2 lb	820043
10-3/4"	79.2–85.3 lb	820044
11-3/4"	47 lb	1500016
11-3/4"	66.7–79 lb	5066441
11-3/4"	54–65 lb	820045
11-7/8"	71.8 lb	
13-3/8"	54.5–72 lb	820196

4. Grapple Retainers Procurement

- a. Procure P/N: 5101764 – Kit, Grapple retention, 9-5/8" to 13-3/8" grapples – from RIGLINE 24/7™.

The kit includes the following parts:

Grapple Retention Kit, 9-5/8" to 13-3/8" Grapples - Canrig P/N: 5101764

Item No.	Part No.	Qty.	Description
1	5101763	5	Retainer, Grapple, 9-5/8" to 13-3/8", ICDS
2	5040289	12*	Washer, Nord-Lock, 3/8"
3	3298	12*	Screw, Cap, Skt HD, 3/8"-16UNC x 3/4"
4	5101759	1	Wrench, Allen Bit Socket, 5/16" hex drive, 1/2" square drive

* Includes 2 spares each

- Refer to Appendix C for #5101764 Grapple Retention Kit drawing.

5. Assemble P/N: 5101763 – Grapple Retainers (qty. 5) – on the modified mandrel.
 - Refer to Figure 5 for the assembling detail.

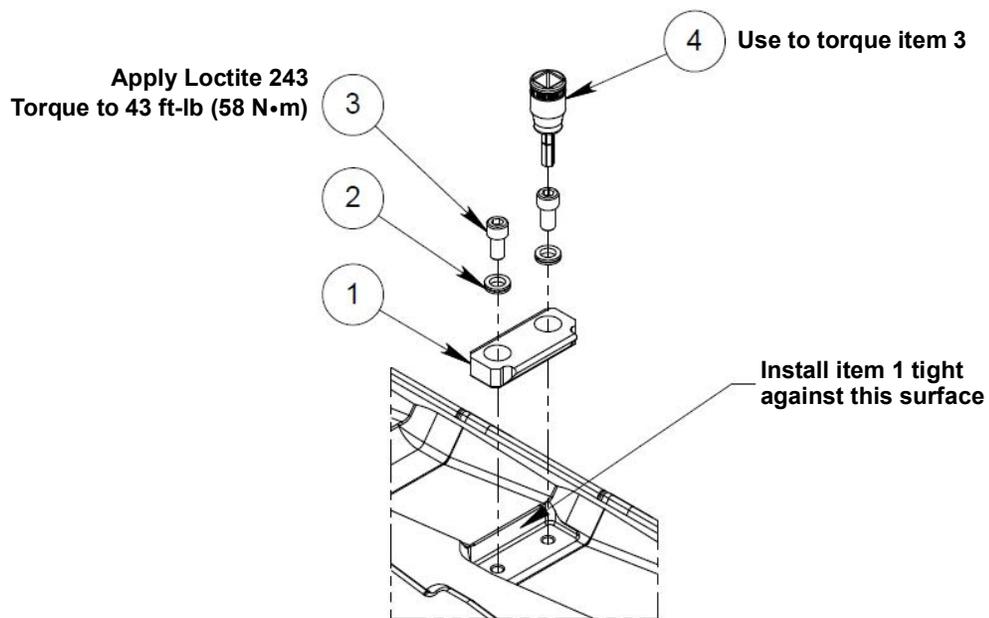


Figure 5

Important:

- Apply Loctite #243 to the screws.
- Ensure the correct orientation of the Grapple Retainer.
- Ensure the proper installation of the Nord-Lock washers.
- Ensure the retainer is tight to the one surface of the pocket before the bolts are tighten. See Figure 6:

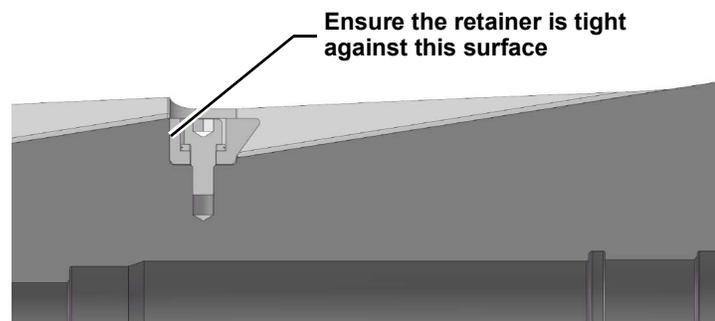


Figure 6

- Use P/N: 5101759 – Allen Bit socket and appropriate Torque Wrench to tighten the screws to 43 ft-lb.



Model: See Affected Equipment	Apr. 22, 2022
Serial #: N/A	
Alert	

6. Re-assemble the Drive with modified mandrel to the actuator.
 - Refer to the CDS Maintenance Guide – Document # 883004 for instructions on how to re-install the mandrel and other Drive components to the Actuator.
7. Install modified Grapples.
 - Refer to the CDS Installation and Operations Guide – Document # 883003 for instructions on how to install the grapples.

WARNING

When the modified grapples are stroked-in/retracted while the retrofit 9-5/8" to 13-3/8" ICDS is in horizontal position, ensure that the grapples positioned in the lower side are not moving away from the mandrel's ramps due to the gravity forces. Failure to maintain the lower side grapples close to the mandrel's ramps (in actuator release/open mode) may result in damage to the grapples and/or grapple retainers.

NOTICE

The P/N: 5102751 – Grapple Retaining Strap – (see Figure 7), is required for retrofitted 9-5/8" to 13-3/8" ICDS tools.

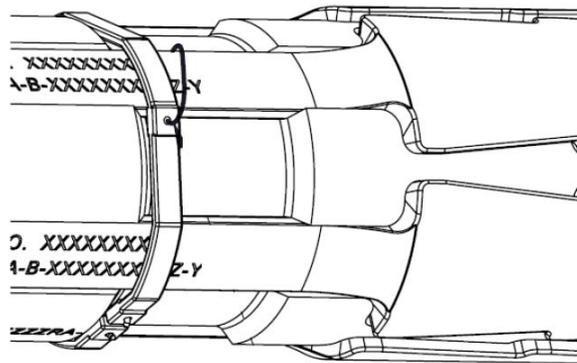
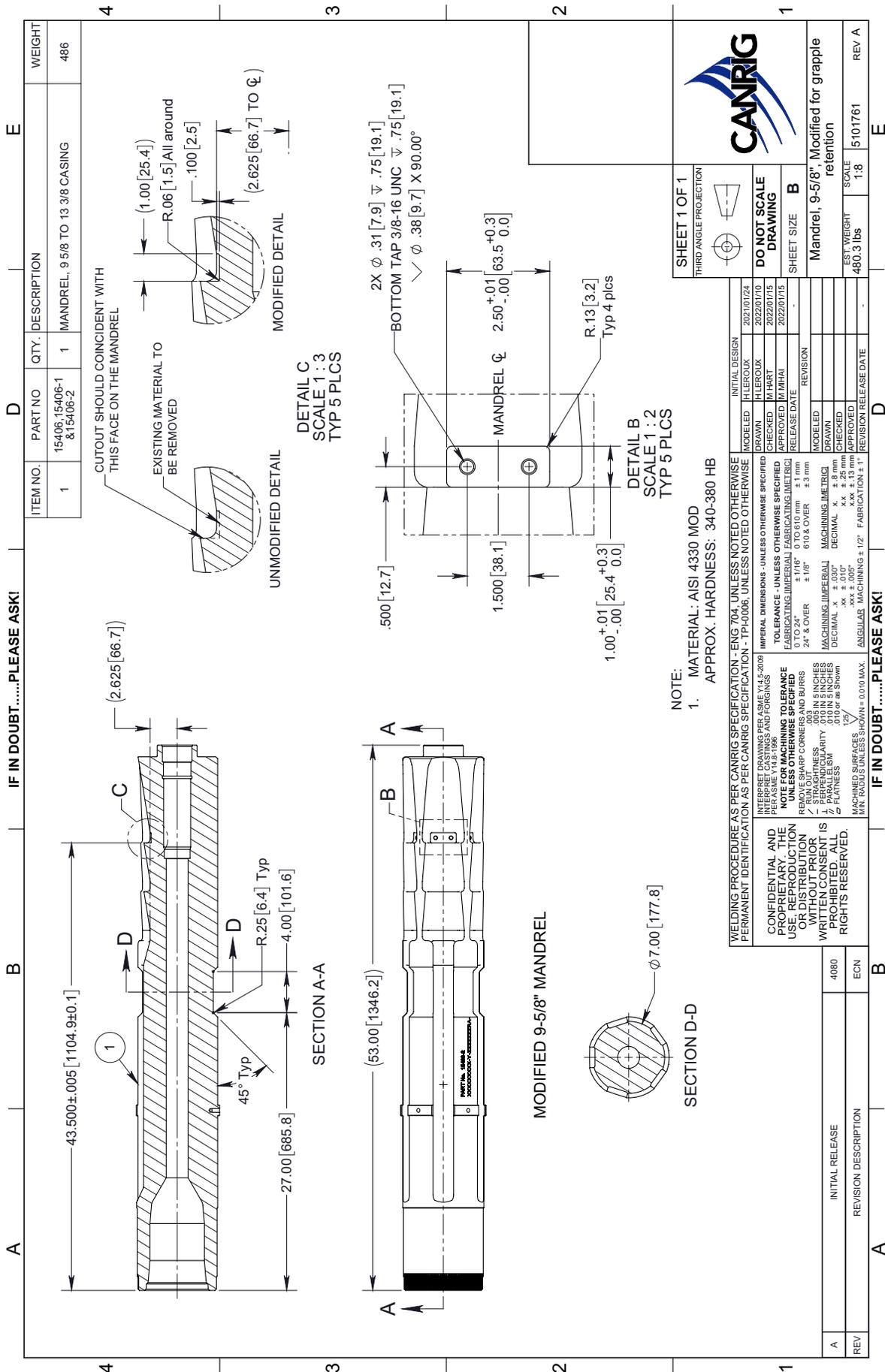


Figure 7

Appendix A – P/N: 5101761 – Mandrel, 9-5/8", Modified for Grapple Retention



IF IN DOUBT.....PLEASE ASK!

ITEM NO. PART NO. QTY. DESCRIPTION WEIGHT

1	15406;15406-1 &15406-2	1	MANDREL, 9 5/8 TO 13 3/8 CASING	486
---	------------------------	---	---------------------------------	-----

CUTOUT SHOULD COINCIDE WITH THIS FACE ON THE MANDREL

EXISTING MATERIAL TO BE REMOVED

UNMODIFIED DETAIL

MODIFIED DETAIL

DETAIL C SCALE 1 : 3 TYP 5 PLCS

DETAIL B SCALE 1 : 2 TYP 5 PLCS

NOTE: 1. MATERIAL: AISI 4330 MOD APPROX. HARDNESS: 340-380 HB

WELDING PROCEDURE AS PER CANRIG SPECIFICATION - ENG 704, UNLESS NOTED OTHERWISE PERMANENT IDENTIFICATION AS PER CANRIG SPECIFICATION - TP-H006; UNLESS NOTED OTHERWISE

CONFIDENTIAL AND PROPRIETARY. THE USE, REPRODUCTION OR DISTRIBUTION WITHOUT THE WRITTEN PERMISSION OF CANRIG IS PROHIBITED. ALL RIGHTS RESERVED.

INITIAL DESIGN: H LEROUX 2022/01/24
 MODELLED: H LEROUX 2022/01/10
 DRAWN: H LEROUX 2022/01/10
 CHECKED: M HART 2022/01/15
 APPROVED: M HART 2022/01/15
 RELEASE DATE: -
 REVISION: -

DO NOT SCALE DRAWING

SHEET SIZE B

Mandrel, 9-5/8", Modified for grapple retention

TEST WEIGHT: 480.3 lbs

SCALE: 1.8

REV A

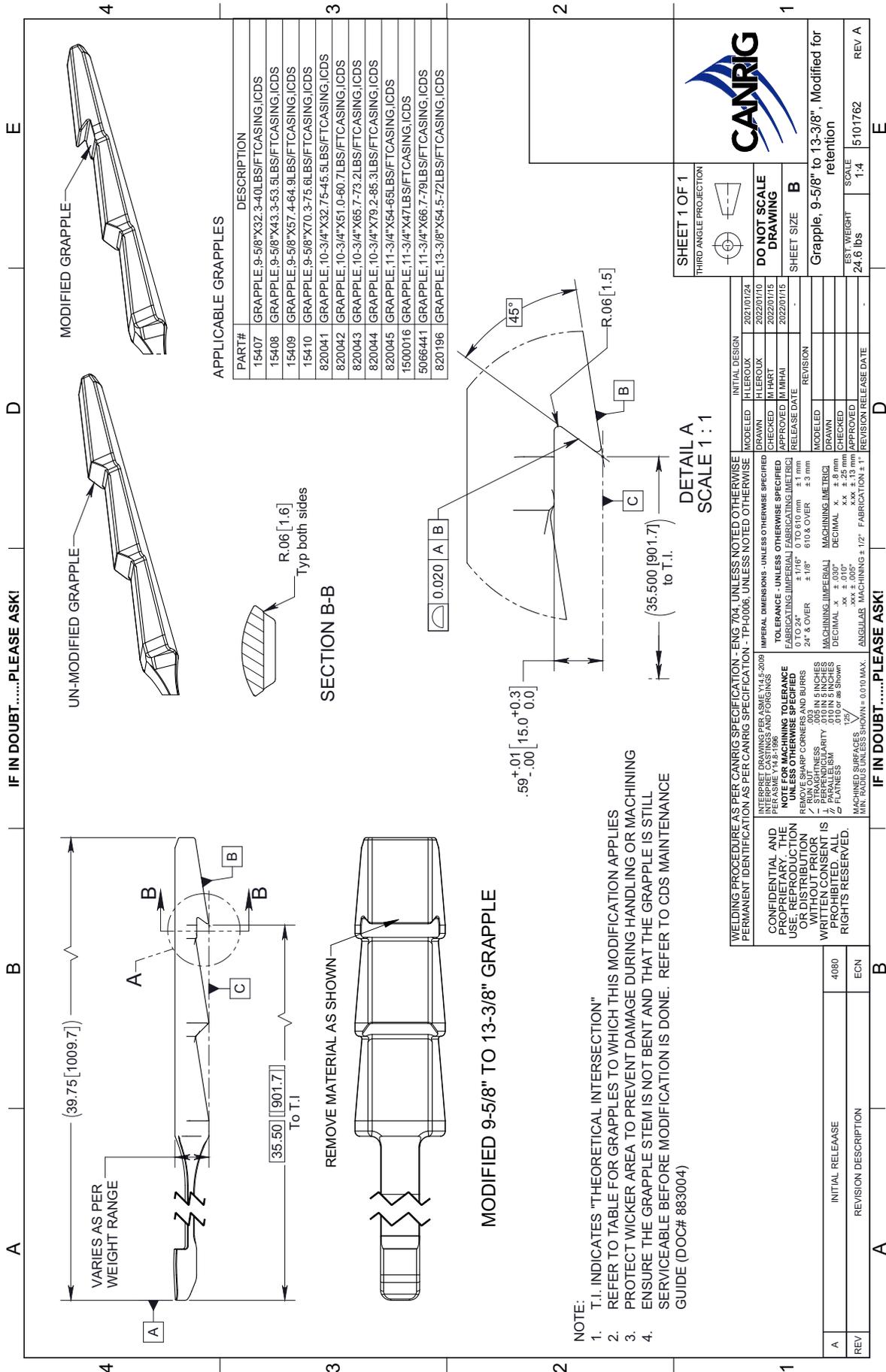
REV A

5101761

REV A

REV A

Appendix B – P/N: 5101762 – Grapple, 9-5/8" to 13-3/8", Modified for Retention



WELDING PROCEDURE AS PER CANRIG SPECIFICATION - ENG 704, UNLESS NOTED OTHERWISE		PERMANENT IDENTIFICATION AS PER CANRIG SPECIFICATION - TP-H006; UNLESS NOTED OTHERWISE	
INTERPRET DRAWING PER ASME Y14.5-2009	INTERPRET DIMENSIONS - UNLESS OTHERWISE SPECIFIED	INITIAL DESIGN	2021/01/24
INTERPRET CASTINGS AND FORGINGS	TOLERANCE - UNLESS OTHERWISE SPECIFIED	MODELED	HLEROUX
NOTE FOR MACHINING TOLERANCE	UNLESS OTHERWISE SPECIFIED	DRAWN	HLEROUX
MIN. RADIUS UNLESS SHOWN = 0.010 MAX.	ANGULARS: MACHINING ±1/2° FABRICATION ±1°	CHECKED	M. HART
STRAIGHTNESS: 0.05 IN 5 INCHES	PARALLELISM: 0.10 IN 5 INCHES	APPROVED	M. HART
FLATNESS: 0.10 IN 5 INCHES	PLATNESS: 0.10 IN 5 INCHES	RELEASE DATE	2022/01/15
REVISIONS		REVISION	
1. 24" & OVER ± 1/8"	6" TO 24" ± 1/16"	2" TO 6" ± 1/16"	0 TO 2" ± 0.10 mm
2. 2" TO 6" ± 0.10"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
3. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
4. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
5. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
6. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
7. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
8. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
9. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
10. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
11. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
12. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
13. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
14. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
15. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
16. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
17. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
18. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
19. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
20. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
21. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
22. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
23. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
24. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
25. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
26. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
27. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
28. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
29. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
30. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
31. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
32. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
33. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
34. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
35. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
36. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
37. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
38. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
39. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
40. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
41. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
42. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
43. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
44. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
45. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
46. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
47. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
48. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
49. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
50. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
51. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
52. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
53. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
54. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
55. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
56. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
57. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
58. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
59. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
60. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
61. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
62. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
63. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
64. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
65. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
66. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
67. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
68. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
69. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
70. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
71. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
72. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
73. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
74. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
75. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
76. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
77. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
78. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
79. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
80. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
81. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
82. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
83. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
84. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
85. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
86. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
87. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
88. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
89. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
90. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
91. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
92. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
93. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
94. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
95. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
96. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
97. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
98. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
99. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"
100. 0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"	0.10 IN ± 0.05"

