



Model: See Affected Equipment

Serial #: N/A

Apr. 25, 2022

Product Bulletin # CDS-009

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 7" to 9-5/8" ICDS tools regardless of the date of manufacture.

Background

With the current 7" to 9-5/8" 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.

7" to 9-5/8" 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

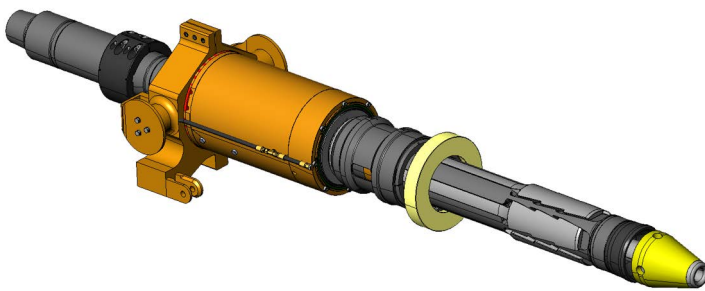
Apr. 25, 2022

Alert

Action Recommended

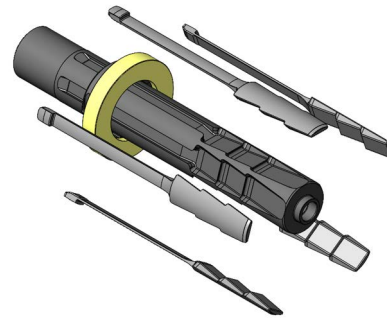
Take the actions to retrofit the 7" to 9-5/8" ICDS tools by following the steps 1 to 7 below.

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



(not an exact representation)

Figure 1



(not an exact representation)

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. 25, 2022

Alert

- Modification of 'on-hand' Mandrel(s) – P/N: 17863, 17863-1 or 17863-2 – See Figure 3.

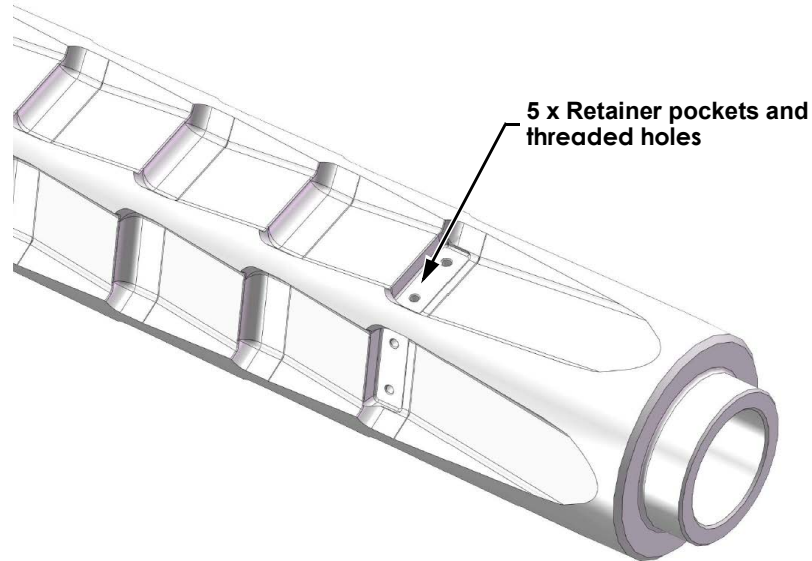
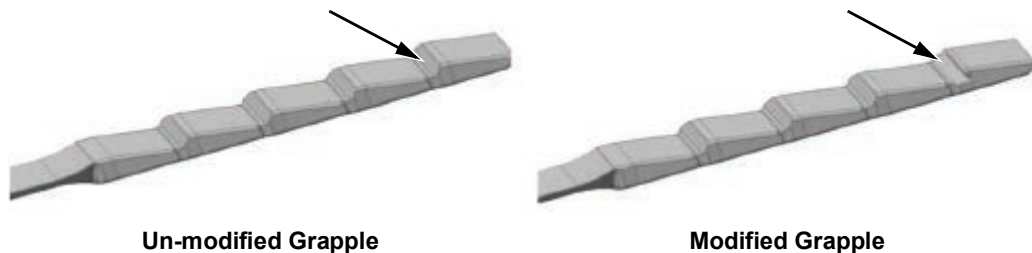


Figure 3

- Machine the slots, drill and thread the holes as per P/N: 5101917 – Mandrel, 7" – Modified for grapple retention.
- Refer to Appendix A for drawing 5101917.

- Modification of 'on hand' Grapples – (all grapple sizes 7" to 9-5/8") - qty. 5 per set – See Figure 4.



Un-modified Grapple

Modified Grapple

Figure 4

- If it is determined that the grapples are still serviceable, modify the grapples as per P/N: 5101919 – Grapple, 7" to 9-5/8", Modified for retention.
- Refer to Appendix B for drawing 5101919.



| | |
|-------------------------------|---------------|
| Model: See Affected Equipment | Apr. 25, 2022 |
| Serial #: N/A | |
| Alert | |

- Grapples that qualify for modification/retrofit:

Drawing # 80183011 Rev 5 – 7" to 9-5/8" Casing

| Casing | | Part No. |
|----------|--------------|----------|
| NOM. DIA | WEIGHT | |
| 7" | 17 lb | 17865 |
| 7-3/4" | 46.1 lb | |
| 7-5/8" | 39–42.8 lb | |
| 7" | 20–23 lb | 17866 |
| 7" | 26–29 lb | 17867 |
| 7" | 32–35 lb | 17868 |
| 7" | 38–41 lb | 17869 |
| 7" | 42.7–44 lb | 17870 |
| 7-5/8" | 24–26.4 lb | 17871 |
| 7-5/8" | 29.7–33.7 lb | 19197 |
| 8-5/8" | 20–24 lb | 1520011 |
| 8-5/8" | 28–36 lb | 1520012 |
| 9-5/8" | 36–43.5 lb | 990113 |
| 9-5/8" | 47–53.5 lb | 990114 |
| 9-5/8" | 32.3 lb | 1520013 |

4. Grapple Retainers Procurement

a. Procure P/N: 5101921 – Kit, Grapple retention, 7" to 9-5/8" grapples – from RIGLINE 24/7™.

The kit includes the following parts:

Grapple Retention Kit, 7" to 9-5/8" Grapples - Canrig P/N: 5101921

| Item No. | Part No. | Qty. | Description |
|----------|----------|------|--|
| 1 | 5101920 | 5 | Retainer, Grapple, 7" to 9-5/8", ICDS |
| 2 | 5080639 | 12* | Washer, Nord-Lock, 1/4" |
| 3 | 2366 | 12* | Screw, Cap, Skt HD, 1/4"-20UNC x 1/2" |
| 4 | 5101938 | 1 | Wrench, Allen Bit Socket, 3/16" hex drive, 3/8" square drive |

* Includes 2 spares each

- Refer to Appendix C for #5101921 Grapple Retention Kit drawing.

5. Assemble P/N: 5101920 – Grapple Retainers (qty. 5) – on the modified mandrel.
 - Refer to Figure 5 for the assembling detail.

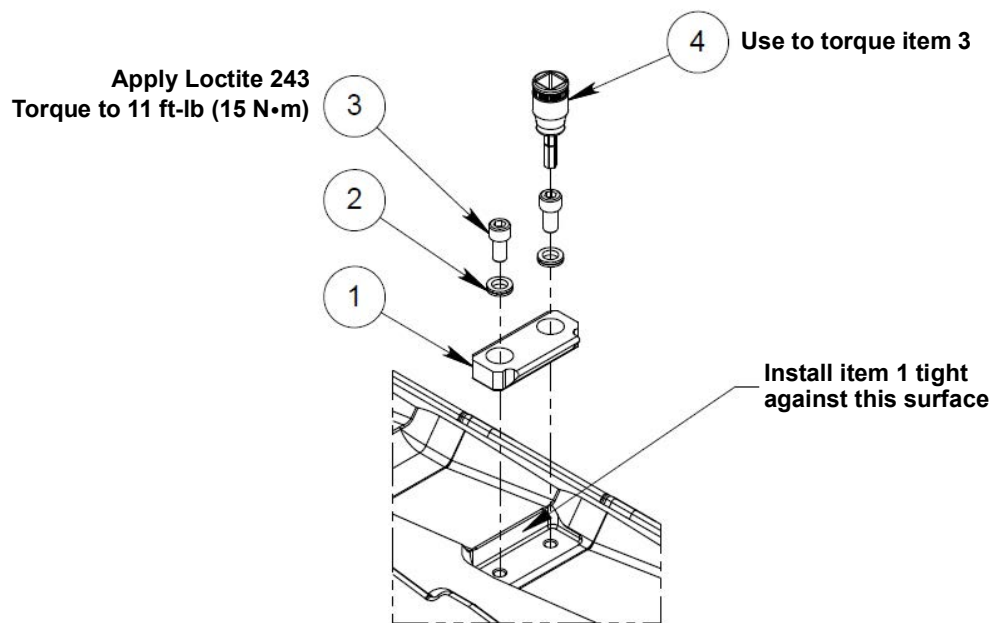


Figure 5

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:

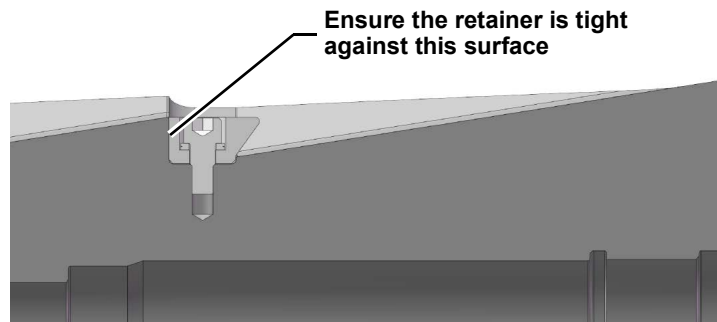


Figure 6

- Use P/N: 5101938 Hex socket bit to tighten the screws to 11 ft-lb. Absolutely **DO NOT** exceed 11 ft-lb of torque on the screws. They are tiny and can easily be stripped or twisted off.



Model: See Affected Equipment

Serial #: N/A

Apr. 25, 2022

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 7" to 9-5/8" 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: 5202952 – Grapple Keeper Rubber Bands – (see Figure 7), is required for retrofitted 7" to 9-5/8" ICDS tools.

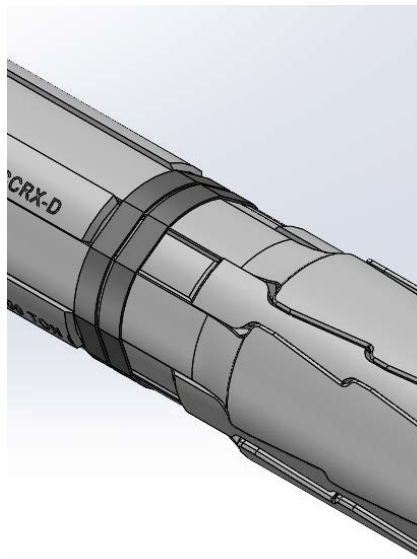
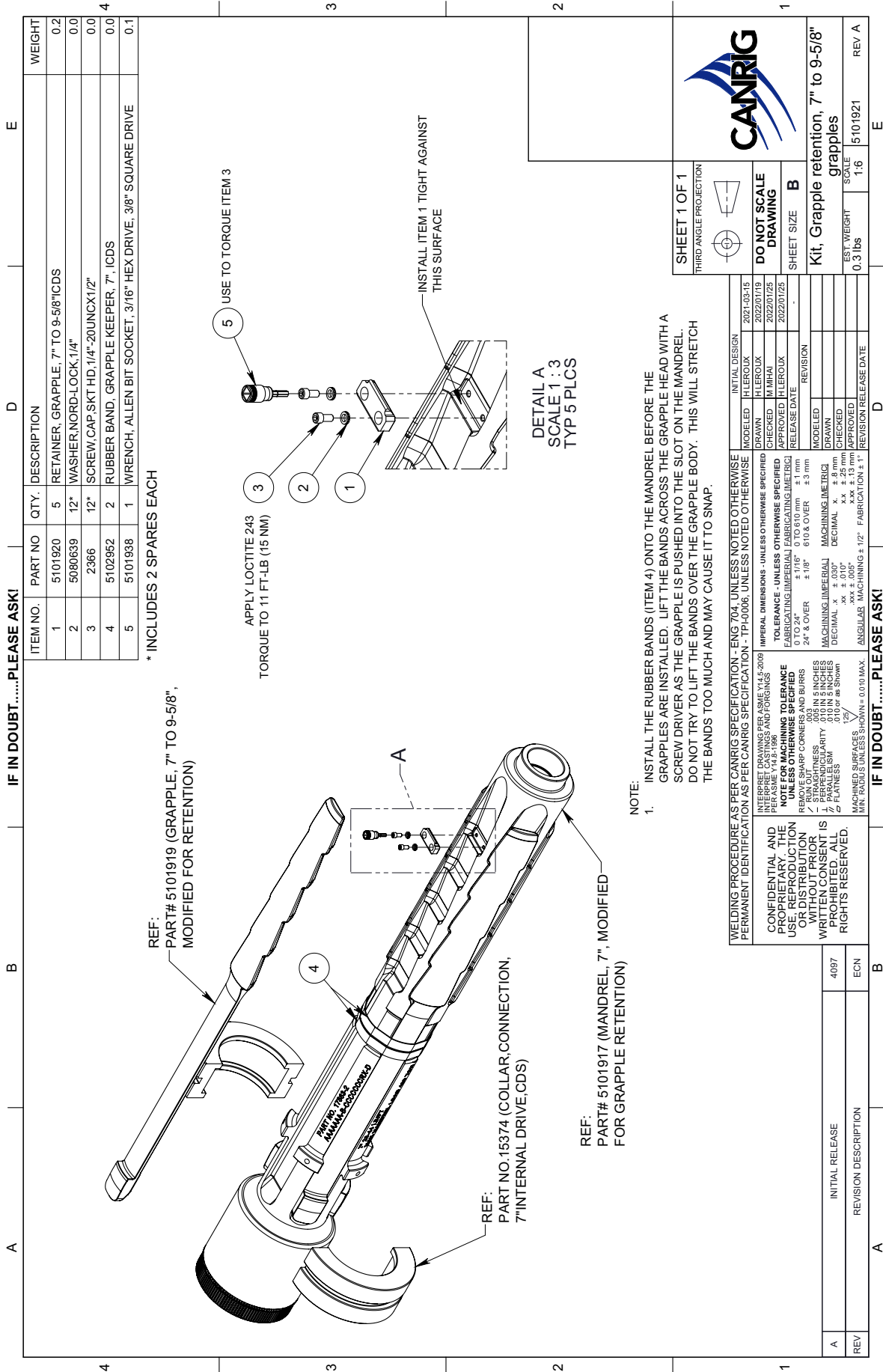


Figure 7

Appendix C – P/N: 5101921 – Grapple Retention Kit drawing



IF IN DOUBT.....PLEASE ASK!

| ITEM NO. | PART NO | QTY. | DESCRIPTION | D | E |
|----------|---------|------|--|---|---|
| 1 | 5101920 | 5 | RETAINER, GRAPPLE, 7" TO 9-5/8"ICDS | | |
| 2 | 5080639 | 12* | WASHER,NORD-LOCK,1/4" | | |
| 3 | 2366 | 12* | SCREW,CAP,SKT HD,1/4"-20UNCX1/2" | | |
| 4 | 5102952 | 2 | RUBBER BAND, GRAPPLE KEEPER, 7", ICDS | | |
| 5 | 5101938 | 1 | WRENCH, ALLEN BIT SOCKET, 3/16" HEX DRIVE, 3/8" SQUARE DRIVE | | |

* INCLUDES 2 SPARES EACH

REF:
PART# 5101919 (GRAPPLE, 7" TO 9-5/8",
MODIFIED FOR RETENTION)

REF:
PART NO.15374 (COLLAR,CONNECTION,
7"INTERNAL DRIVE,CDS)

REF:
PART# 5101917 (MANDREL, 7", MODIFIED
FOR GRAPPLE RETENTION)

NOTE:
1. INSTALL THE RUBBER BANDS (ITEM 4) ONTO THE MANDREL BEFORE THE GRAPPLES ARE INSTALLED. LIFT THE BANDS ACROSS THE GRAPPLE HEAD WITH A SCREW DRIVER AS THE GRAPPLE IS PUSHED INTO THE SLOT ON THE MANDREL. DO NOT TRY TO LIFT THE BANDS OVER THE GRAPPLE BODY. THIS WILL STRETCH THE BANDS TOO MUCH AND MAY CAUSE IT TO SNAP.

DETAIL A
SCALE 1:3
TYP 5 PLCS

APPLY LOCTITE 243
TORQUE TO 11 FT-LB (15 NM)

INSTALL ITEM 1 TIGHT AGAINST
THIS SURFACE

5 USE TO TORQUE ITEM 3

CANRIG

SHEET 1 OF 1
THIRD ANGLE PROJECTION

DO NOT SCALE DRAWING

SHEET SIZE B

Kit, Grapple retention, 7" to 9-5/8" grapples

TEST WEIGHT 0.3 lbs
SCALE 1:6
REV A

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

| INITIAL DESIGN | MODELED | DATE |
|----------------|------------|------|
| HLEROUX | 2021-03-15 | |
| HLEROUX | 2022/01/19 | |
| M.MHAL | 2022/01/25 | |
| HLEROUX | 2022/01/25 | |

IMPERIAL DIMENSIONS - UNLESS OTHERWISE SPECIFIED
TOLERANCE - UNLESS OTHERWISE SPECIFIED
24" & OVER ± 1/8" 0 TO 0.10 mm ± 1 mm
0 TO 24" ± 0.010" 0 TO 0.10 mm ± 0.3 mm

REVISIONS

| NO. | DATE | DESCRIPTION |
|-----|------|-------------|
| 1 | | REVISION |

MACHINING UNLESS OTHERWISE SPECIFIED
DECIMAL .xx ± 0.10" DECIMAL .xxx ± 0.13 mm
DECIMAL .xxx ± 0.05" DECIMAL .xxx ± 0.25 mm
ANGULARS MACHINING ± 1/2° FABRICATION ± 1°

REVISION RELEASE DATE

IF IN DOUBT.....PLEASE ASK!

| REV | INITIAL RELEASE | REVISION DESCRIPTION | ECN |
|-----|-----------------|----------------------|-----|
| A | 4097 | | |