



Document Number:

HD912-INST

Description:

**INSTRUCTION SHEET, DUC TO
PR/SPR, W/MANUAL LIFT**

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Signature MFG: *RM* 6/2/21

| Rev | Date | ECN | Description | RC | DWN |
|-----|----------|-------|---|----|-----|
| - | 8/20/12 | - | INITIAL RELEASE | - | AC |
| A | 05/22/15 | 12741 | CHG'D FIGURE 6 | 5 | TT |
| B | 11/15/19 | 14248 | ADDED HD380 CONFIG, CHANGE TO POWER POINT | 5 | GM |
| C | 05/07/21 | | SKIPPED REV DUE TO REDLINE REV SCHEME | | GMG |
| D | 05/12/21 | 14570 | ADDED -2 CONFIGURATION | 6 | GMG |

| BILL OF MATERIAL | | | | | | |
|------------------|----|-------|------|--|------------|-----------|
| -2 | -1 | BASIC | ITEM | DESCRIPTION | PART NO | NOTE |
| 0 | 0 | 2 | 1 | CABLE,Y-CBL,HD12>PR/SPR,40"L,DUC | HD308-1 | |
| 1 | 1 | 1 | 3 | CAP,F/RECEPT,DUAL KEYWAY,(F/EC430) | EC431 | |
| 0 | 2 | 0 | 4 | ADAPTER,HD12>CATVS,STRAIGHT,40" | HD342-1 | |
| 2 | 2 | 2 | 5 | CLAMP,CABLE NYLON 3/8ID | 121003 | |
| 1 | 1 | 1 | 6 | SCREW,FLAT,8-32X3/8 PHIL SST | 100146 | |
| 1 | 1 | 1 | 7 | SCREW,PAN,8-32X3/8 PHIL SST | 103065 | |
| 1 | 1 | 1 | 8 | WASHER,FLAT,#8 SST | 100139 | |
| 1 | 1 | 1 | 9 | WASHER,SPLIT LOCK,#8 SST | 101738 | |
| 5 | 5 | 5 | 10 | MRO-TIE,CABLE,3/16"X14" BLACK | 440302 | |
| 1 | 1 | 1 | 11 | BRACKET, MOUNTING, SPLITTER CABLE, HD CAMERA | HD047 | Reference |
| 2 | 2 | 2 | 12 | SCREW, STD CAP, HEX, SKT, .25-20 X .312, 18-8, SST | HW2353 | Reference |
| 1 | 1 | 1 | 13 | SCREW, STD CAP, HEX, SKT, 10-32 X .750, 18-8, SST | 100121 | Reference |
| 1 | 1 | 1 | 14 | INST SHEET,KIT,DUC-PR/SPR W/MANLIFT | HD912-INST | |
| 2 | 0 | 0 | 15 | ADAPTER,DUC,PR,12 PIN NON-HD,42" | HD356-1 | |

| Camera Cable Configuration Matrix | | | | |
|-----------------------------------|---------|---------|---------|------------------------------|
| Camera | HD300 | HD300-1 | HD300-2 | HD380 |
| Cable | HD308-1 | HD308-1 | HD342-1 | HD342-1 or HD356-1 |

Description: This document details the installation of the camera connection cables for the DUC cameras on the Pipe Ranger or Steerable Pipe Ranger SPR, with a Manual Lift. There are several versions of the DUC camera. The HD300 and the HD300-1 versions use the right angle connector cable HD308-1. The HD300-2 and HD380 versions utilize the straight connector cable HD342-1. HD356-1 is used on legacy 12 pin systems and it is only compatible with the HD380 camera. This document is divided into three sections:

- 1) For the HD300 and HD300-1 cameras which use the right angle connector adapter cable HD308-1.
- 2) For the HD300-2 camera, which use the straight connector adapter cable HD342-1. and the HD380 camera, which uses the straight adapter cables HD342-1 and HD356-1.
- 3) For installing the camera into the lift and dressing the cables onto the transporter and lift which is common to all cameras.

Section 1 - HD300 and HD300-1 Cable Installation Instructions



STEP 1

INSTALL THE HD308-1 CABLE TO THE BRACKET (HD047) WITH THE 10-32 SCREW (100121) NOTE: BOSS ON SPLITTER MUST FIT INTO THE HOLE ON BRACKET. SEE FIG 1.



STEP 2

INSTALL BRACKET (HD047) WITH SCREWS (HW2353) TO THE CAMERA, NOTE: IT MAY BE NECESSARY TO FIRST REMOVE SET SCREWS INSTALLED IN THIS LOCATION. SEE FIGURES 2 AND 3.



FIG 3

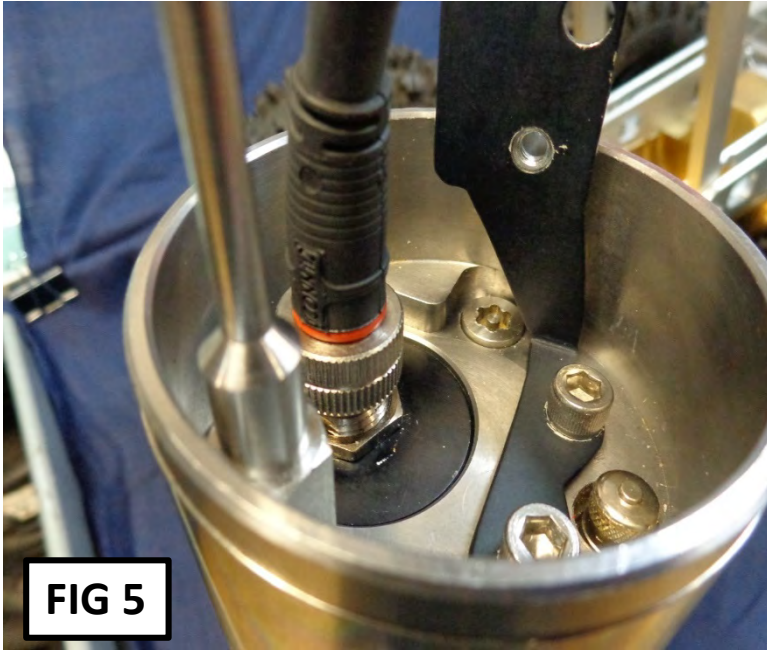
Section 1 - HD300 and HD300-1 Cable Installation Instructions

STEP 3

ROUTE HD308-1 CABLE AS SHOWN AND CONNECT IT TO THE CAMERA. SEE FIG 4.



Section 2 - HD300-2 and HD380 Cable Installation Instructions



STEP 1

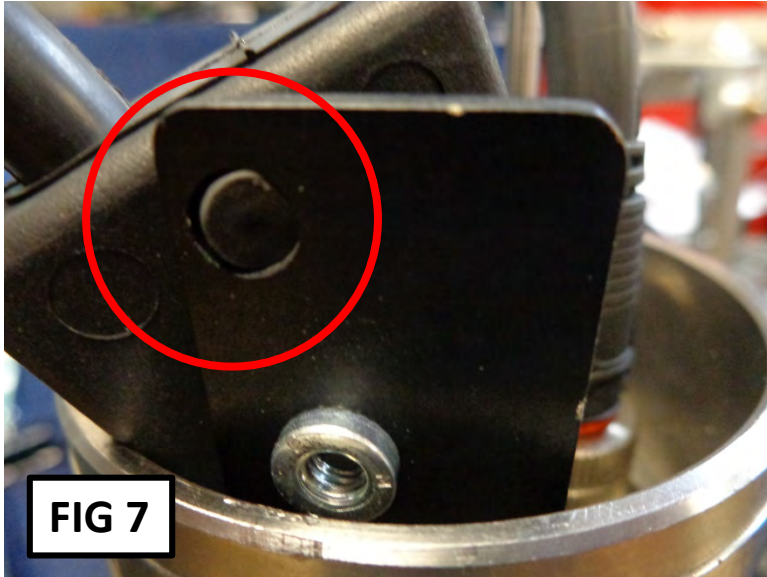
ATTACH CABLE HD342-1 OR HD356-1 TO THE CAMERA BEING CAREFUL TO LINE UP THE CONNECTOR PROPERLY SO AS NOT TO DAMAGE THE PINS. SEE FIG 5.



STEP 2

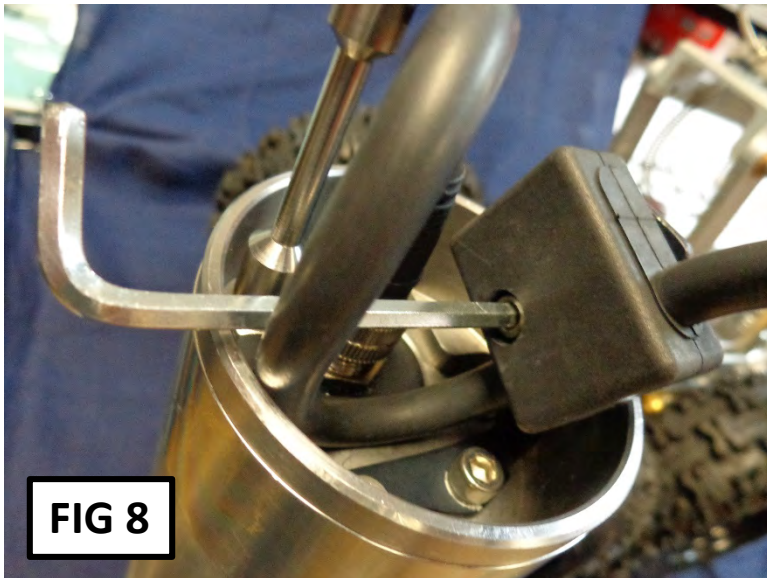
PUSH THE CABLE FORWARD AND LOOP IT AS SHOWN IN PREPARATION TO ATTACH IT TO THE MOUNTING BRACKET. SEE FIGURE 6.

Section 2 - HD300-2 and HD380 Cable Installation Instructions



STEP 3

ALIGN THE STRAIN RELIEF BLOCK WITH THE MOUNTING BRACKET AND WITH THE RUBBER LOCATING FEATURE AS SHOWN IN FIGURE 7.



STEP 4

ALIGN THE MOUNTING SCREW (100121) TO THE THREADED HOLE IN THE BRACKET AND TIGHTEN. IT MAY BE NECESSARY TO ROTATE THE RUBBER STRAIN RELIEF BLOCK WHILE PUSHING ON THE SCREW IN ORDER TO “FEEL” THE SCREW FALL INTO THE MOUNTING HOLE. NOTE THE PROPER ANGLE OF THE MOUNTING BLOCK AND DO NOT OVER TIGHTEN THE MOUNTING SCREW. THE SCREW SHOULD BE SNUG AND BOTTOMED OUT IN IT’S POCKET BUT NOT DEFORMING THE MOUNTING BLOCK OR BURYING ITSELF INTO THE RUBBER. SEE FIGURE 8.

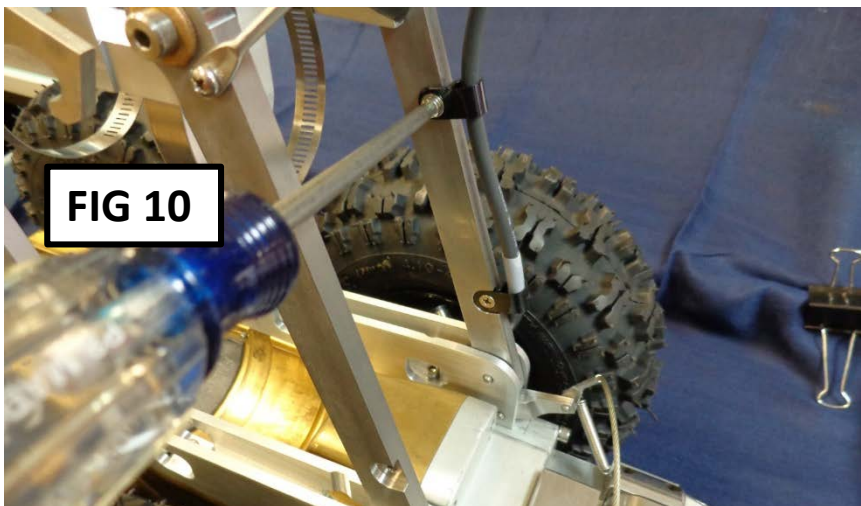
Section 3 – Installing the Camera into the lift

NOTE - These instructions are common to both types of cameras



STEP 1

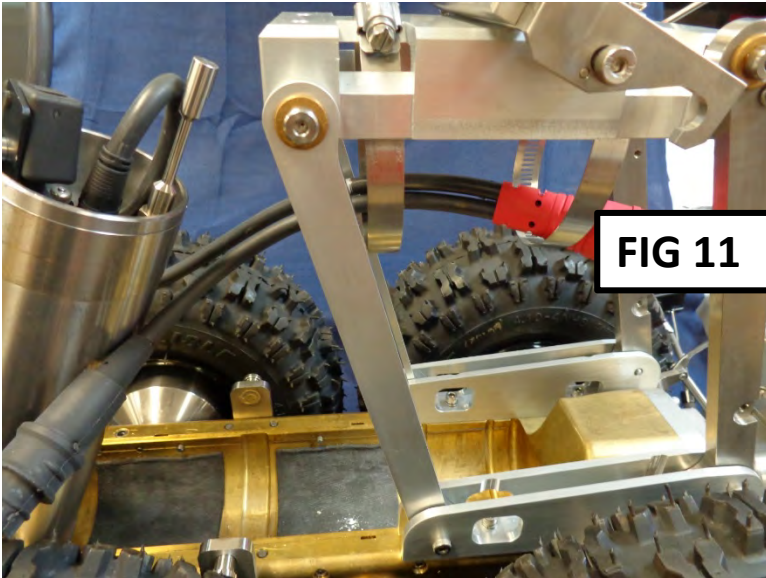
- PLACE THE MANUAL LIFT (WT310) IN ITS UPMOST POSITION.
- REMOVE THE TWO CABLE CLAMPS HOLDING THE Y ELIMINATOR SHOWN IN FIGURES 9 AND 10.



Section 3 – Installing the Camera into the lift

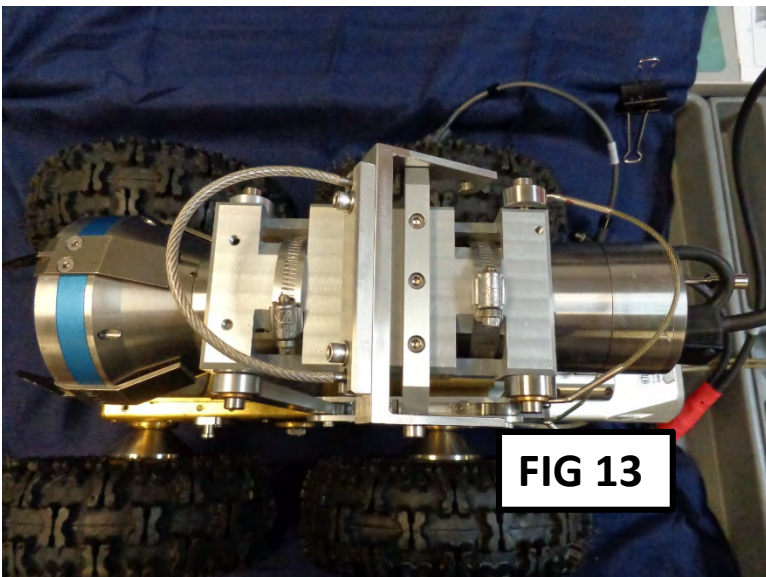
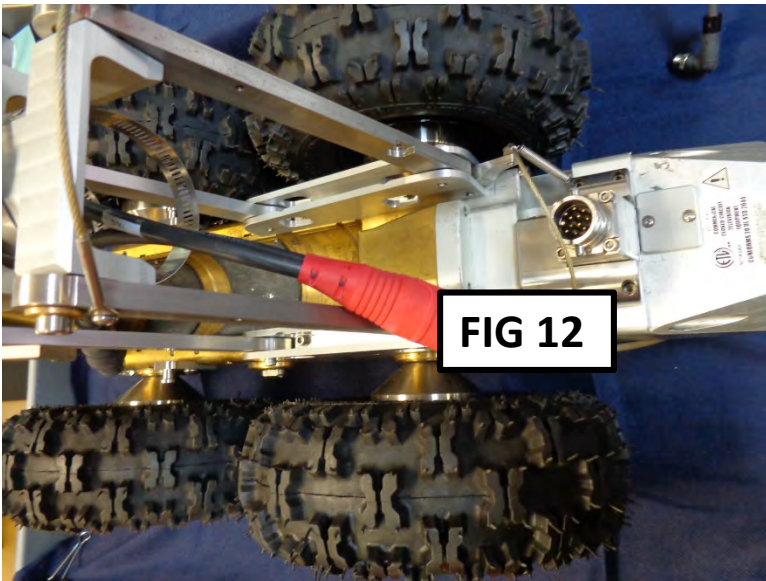
STEP 2

- INSERT HD308-1, HD342-1 OR HD356-1 CABLE THROUGH THE TWO HOSE CLAMPS ON THE MANUAL LIFT. SEE FIGURES 11 AND 12.

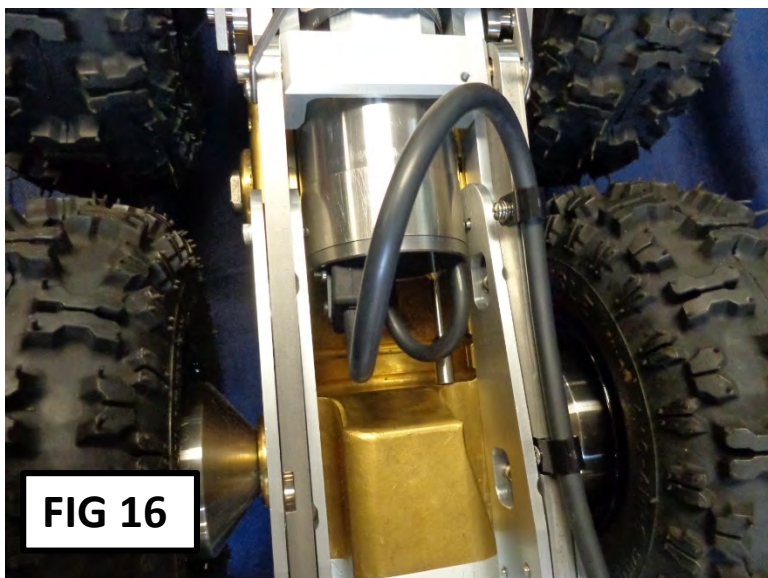
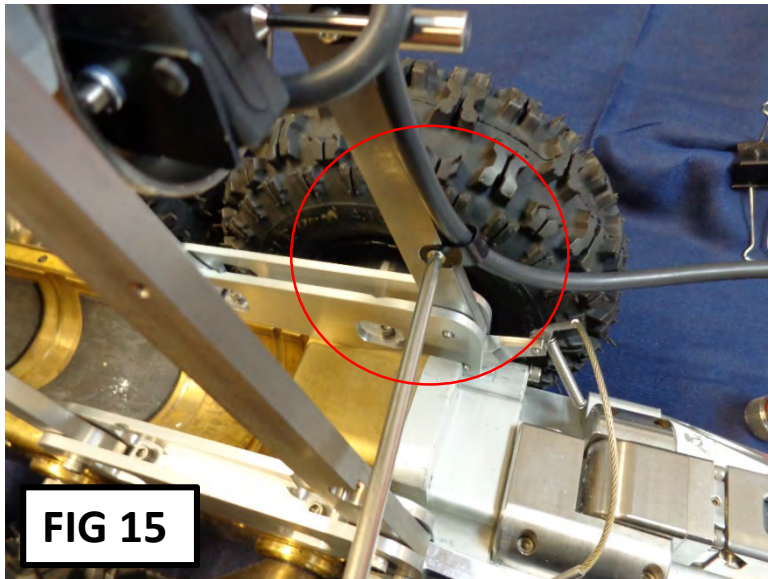
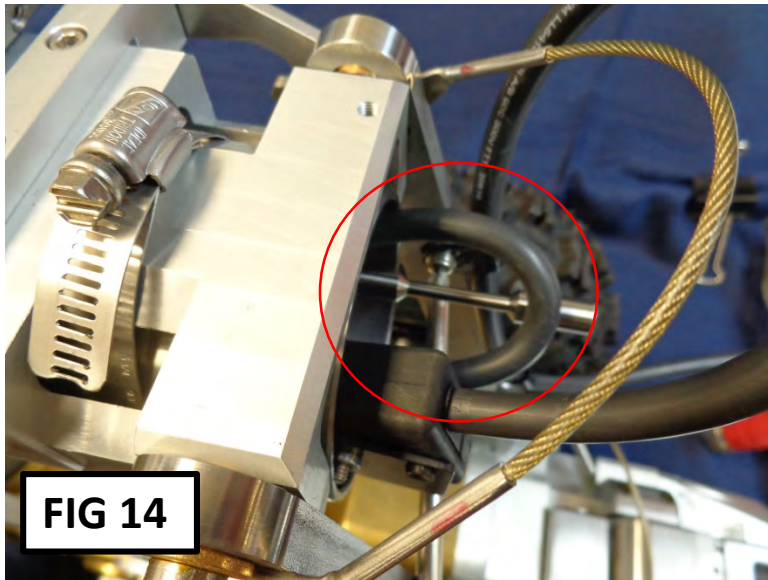


STEP 3

- INSERT DUC CAMERA THROUGH THE TWO HOSE CLAMPS ON THE MANUAL LIFT. SEE FIGURE 13.



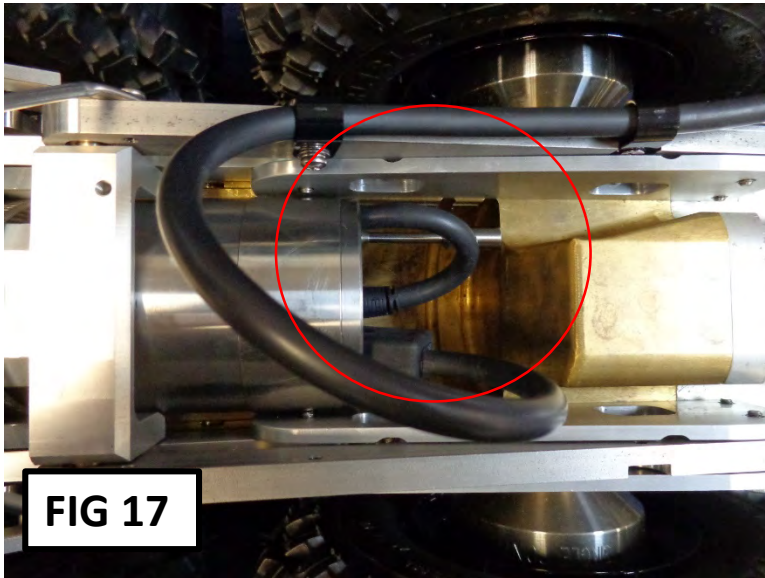
Section 3 – Installing the Camera into the lift



STEP 4

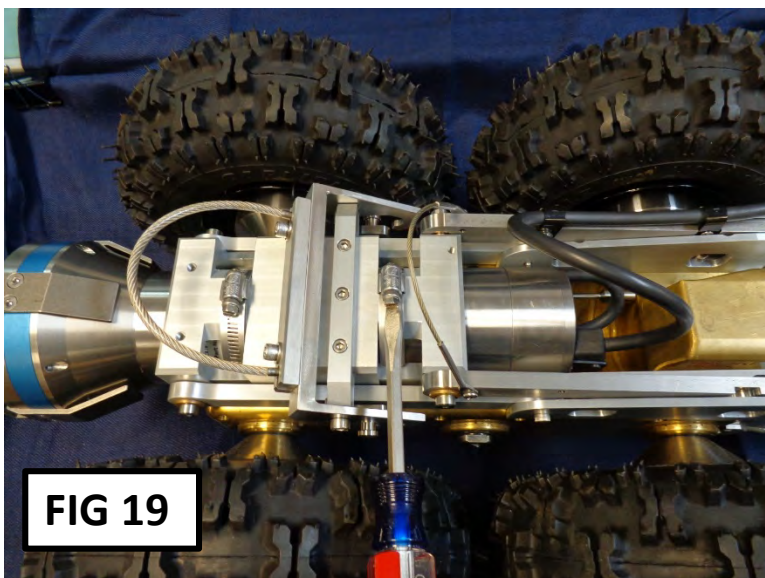
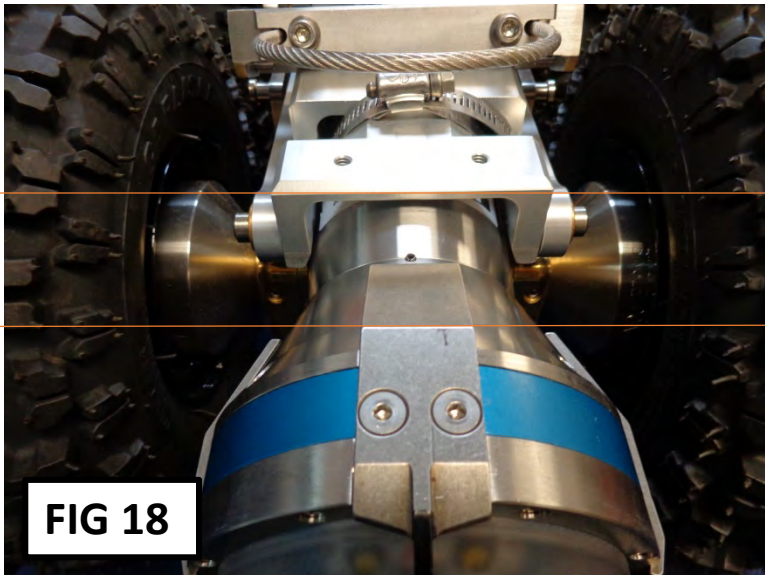
- SLIDE THE CAMERA FORWARD TO ACCESS THE CABLE CLAMP MOUNTING HOLES ON THE REAR ARMS. SEE FIGURE 14.
- INSERT TWO CABLE CLAMPS (121003) ORIENTED SO THAT THE CABLE RESTS ON THE NARROW EDGE OF THE ARM. SEE FIGURES 14, 15 AND 16.
- INSTALL THE TOP CABLE CLAMP USING PAN SCREW (103065), SPLIT WASHER (101738) AND FLAT WASHER (100139). SEE FIGURES 14, 15 AND 16.
- INSTALL THE BOTTOM CABLE CLAMP USING A FLAT SCREW (100146). SEE FIGURES 14, 15, AND 16.

Section 3 – Installing the Camera into the lift



STEP 5

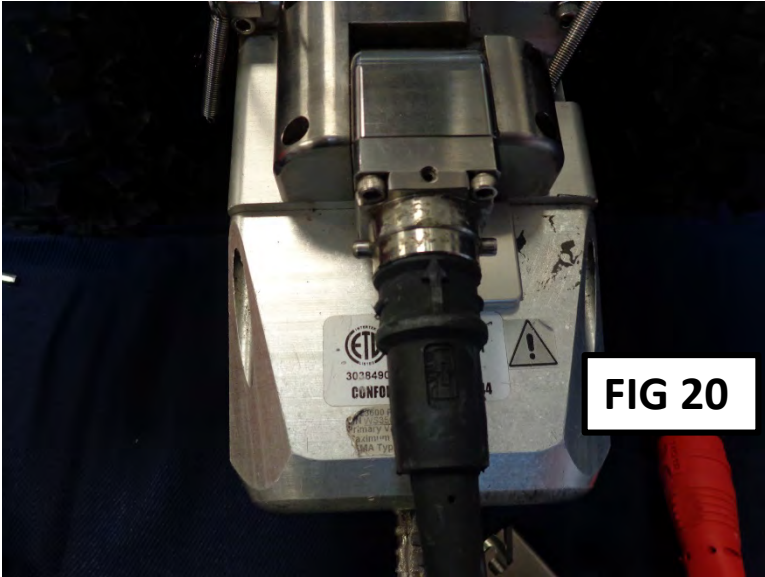
- LOWER THE MANUAL LIFT. SEE FIGURE 17.
- ALIGN THE CAMERA UPRIGHT AND SLIDE THE CAMERA ALL THE WAY BACK UNTIL THE STOP BAR ENGAGES WITH THE BACK POCKET. SEE FIGURE 17.
- ROTATE THE CAMERA UNTIL THE TOP FORK IS PARALLEL WITH THE LIFT CRADLE. SEE FIGURE 18.
- TIGHTEN THE TWO HOSE CLAMPS ON THE MANUAL LIFT CAMERA CRADLE. SEE FIGURE 19.



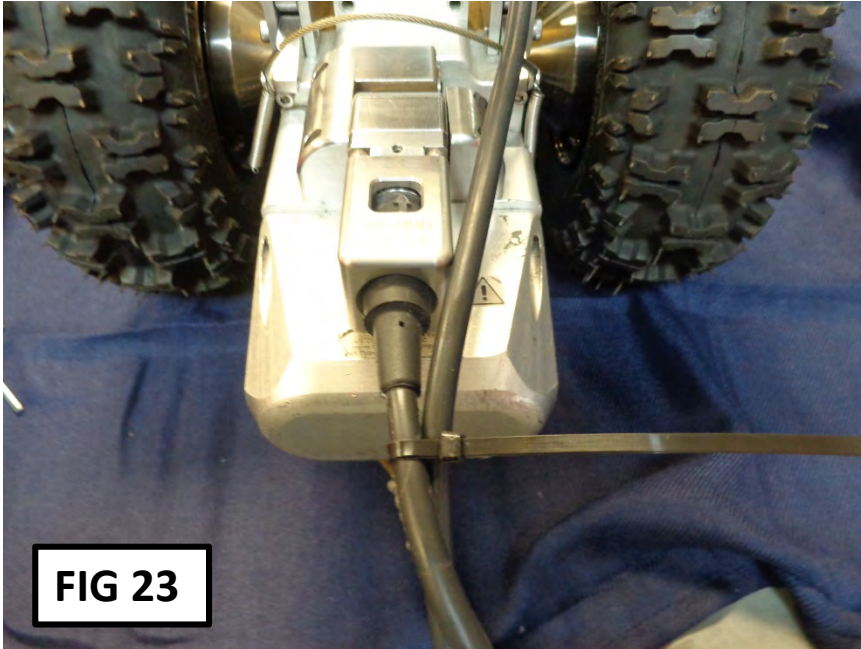
Section 3 – Installing the Camera into the lift

STEP 6

- PLUG THE HD308-1, HD342-1 OR HD356-1 TO THE TRANSPORTER'S 12 PIN CONNECTOR. SEE FIGURE 20.
- INSTALL THE (WS090) STRAIN RELIEF OVER THE 12 PIN CONNECTOR. SEE FIGURE 21.
- PUSH, TWIST AND TIGHTEN THE (WS090) STRAIN RELIEF. SEE FIGURE 22.

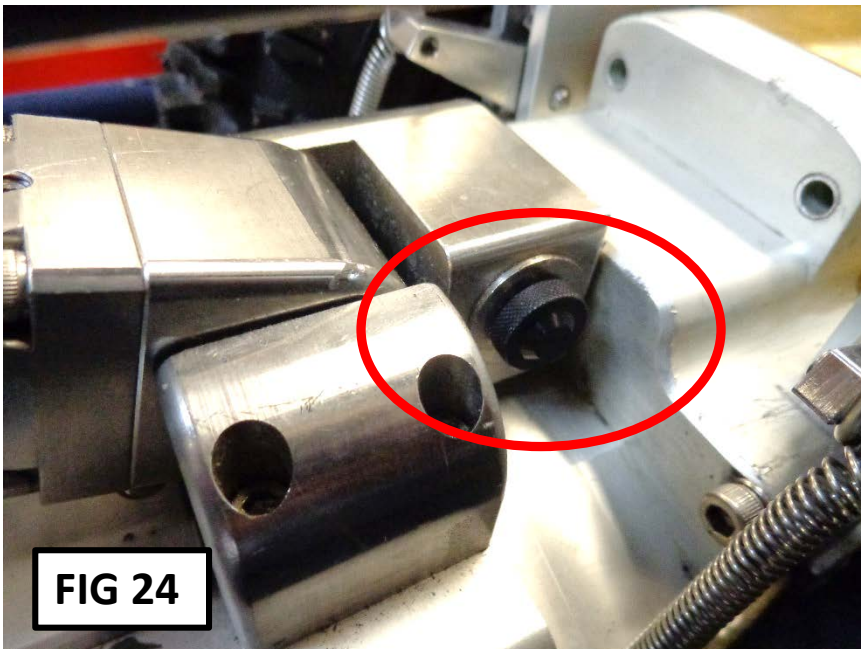


Section 3 – Installing the Camera into the lift



STEP 7

- PLACE A TIE WRAP (440302) HOLDING THE TWO PIGTAILS TOGETHER. SEE FIGURE 23.
- INSTALL THE CONNECTOR CAP, (EC431), ONTO THE 5-PIN CONNECTOR. SEE FIGURE 24



Section 3 – Installing the Camera into the lift

INSTALLATION INSTRUCTION COMPLETE. SEE FIGURE 25.

