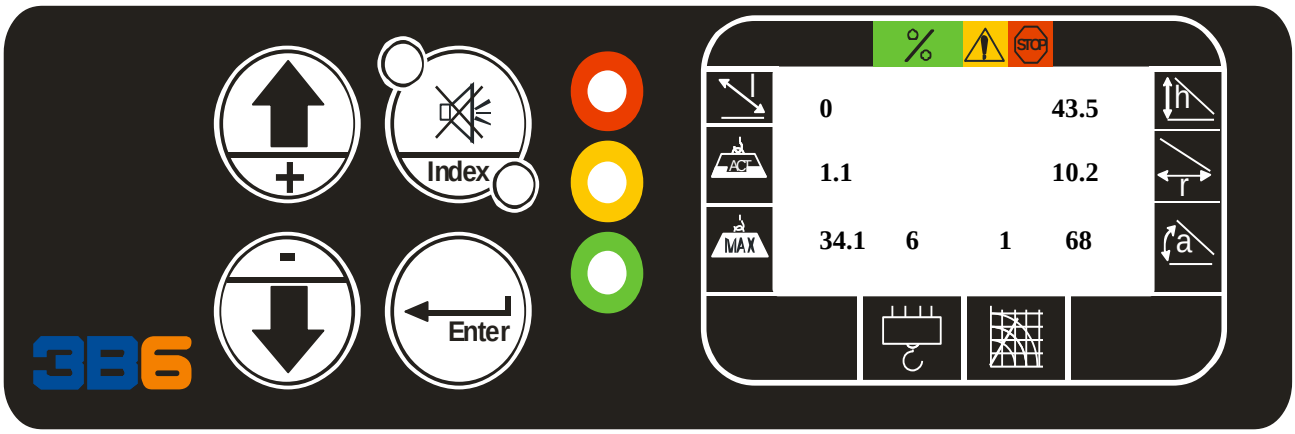
SLIM
Load Moment Indicator
Restricted Calibration Manual



Confidential information Qualified personnel only

Rev 6 09-06-13
Software TXW003 RCME

CONTROL SYSTEMS
TECHNOLOGY FOR MOBILE MACHINES

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Introduction

WARNING

The SLIM system is an LMI, with Range limiting features.

The system should be checked for the shutoff functions prior to programming the Operating mode and confirming by trying to move the boom functions to ensure the shutoff is disabled.

A full check confirming all features on the system are functioning properly prior to lifting any loads!

To obtain the optimum performance from this system we recommend that you read and understand this manual before using the system.

WARNING

For proper use of the system, carefully read and understand this page.

MAINTENANCE *The SLIM system power cable must be disconnected when welding, battery replacement, charging or jump starting the battery. Failure to comply will result in serious damage to the system.*

MACHINE WASHING *If washing the machine with a high pressure power washer, you must protect all the system components from direct spraying to avoid damage to the components.*

Failure to comply with the above warnings will result in voiding the warranty!

WARRANTY

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, MADE BY EITHER THE DISTRIBUTOR OR THE MANUFACTURER ON NEW 3B6 SYSTEMS AND COMPONENTS, EXCEPT THE MANUFACTURER'S WARRANTY AGAINST DEFECTS, MATERIAL AND WORKMANSHIP SET OUT BELOW.

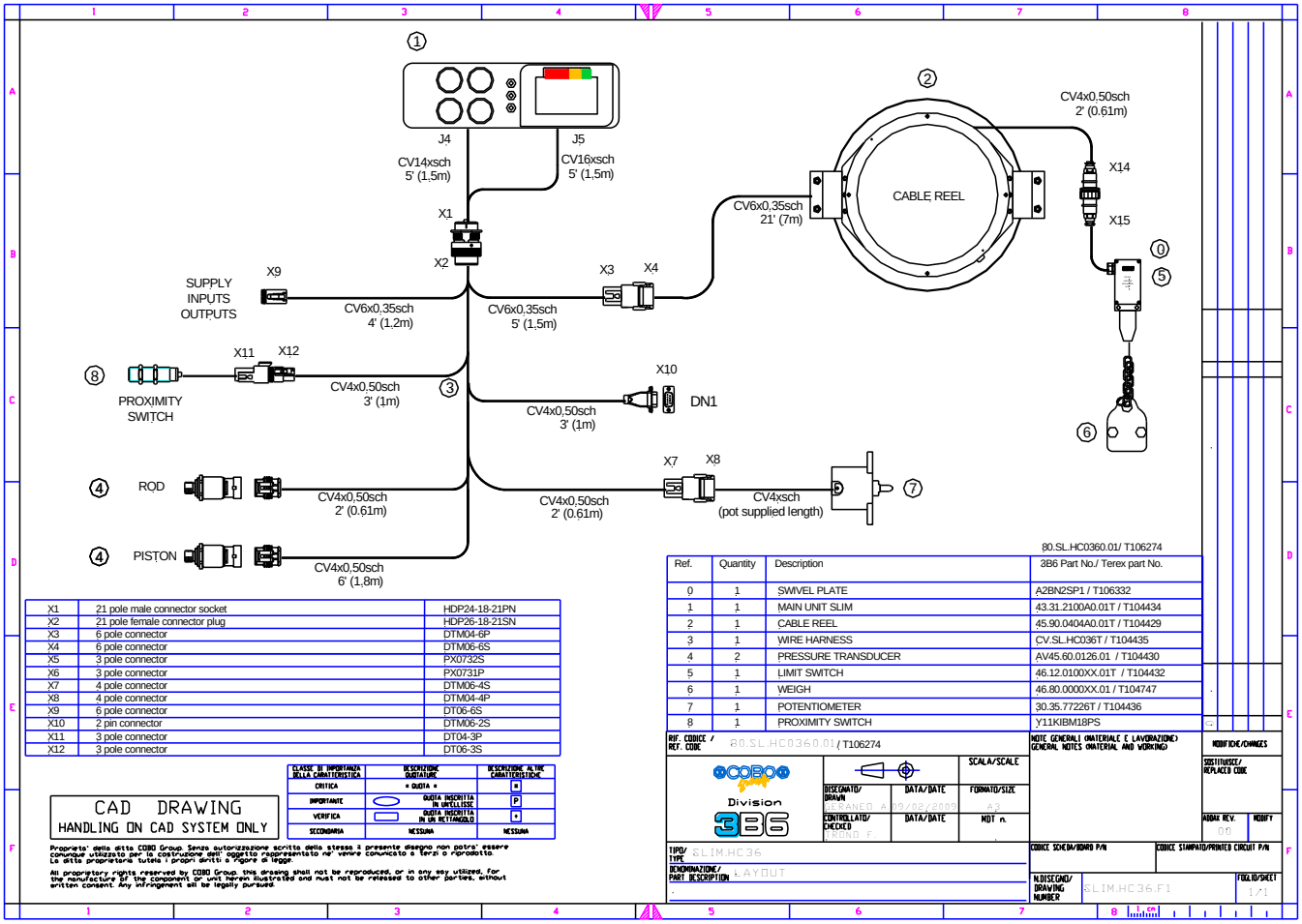
NEW EQUIPMENT WARRANTY

"The manufacturer warrants each new product made by the manufacturer to be free from defects in material and workmanship, its obligation and liability under this warranty being limited to replacing free of charge at its factory any part proving defective under normal use and service within twelve (12) months from the date of initial sale, providing the product is on record with the manufacturer as being installed by the distributor. If the product is not on record as being installed by the distributor, the manufacturer will consider the date of shipment from the factory as the date of initial sale. This warranty is in lieu of all other warranties, expressed or implied and the obligation and liability of the manufacturer under this warranty shall not include any transportation or other charges or the cost of installation or any liability for direct, indirect or consequential damages or delay resulting from the defect. Any operation beyond rated capacity or the improper use of the product or the substitution upon it of parts not approved by the manufacturer shall void this warranty. This warranty covers only the products of 3B6. The products of other manufacturers are covered only by such warranties as made by their manufacturers.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND OF ANY OTHER OBLIGATIONS OR LIABILITY OF THE PART OF THE MANUFACTURER, AND 3B6 NEITHER ASSUMES NOR AUTHORIZES ANY OTHER PERSON TO ASSUME FOR IT ANY OTHER LIABILITY IN CONNECTION WITH SUCH EQUIPMENT.

Table of Contents

System Layout



X1	21 pole male connector socket	HDP24-18-21PN
X2	21 pole female connector plug	HDP26-18-21SN
X3	6 pole connector	DTM04-6P
X4	6 pole connector	DTM06-6S
X5	3 pole connector	PX0732S
X6	3 pole connector	PX0731P
X7	4 pole connector	DTM06-4S
X8	4 pole connector	DTM04-4P
X9	6 pole connector	DT06-6S
X10	2 pin connector	DTM06-2S
X11	3 pole connector	DT04-3P
X12	3 pole connector	DT06-3S

80.SL.HC0360.01/ T106274

Ref.	Quantity	Description	3B6 Part No./ Terex part No.
0	1	SWIVEL PLATE	A2BN2SP1 / T106332
1	1	MAIN UNIT SLIM	43.31.2100A0.01T / T104434
2	1	CABLE REEL	45.90.0404A0.01T / T104429
3	1	WIRE HARNESS	CV.SL.HC036T / T104435
4	2	PRESSURE TRANSDUCER	AV45.60.0126.01 / T104430
5	1	LIMIT SWITCH	46.12.0100XX.01T / T104432
6	1	WEIGH	46.80.0000XX.01 / T104747
7	1	POTENTIOMETER	30.35.7722ST / T104436
8	1	PROXIMITY SWITCH	Y11KIBM18PS

CLASSE DI IMPORTANZA DELLA CARATTERISTICA	DESCRIZIONE QUOTATURE	DESCRIZIONE ALTRE CARATTERISTICHE
CRITICA	« QUOTA »	■
IMPORTANTE	QUOTA INSCRITTA IN UN'ELLISSE	P
VERIFICA	QUOTA INSCRITTA IN UN RETTANGOLO	•
SECONDARIA	NESSUNA	NESSUNA

CAD DRAWING
HANDLING ON CAD SYSTEM ONLY

RIF. CODICE / REF. CODE: 80.SL.HC0360.01 / T106274
NOTE GENERALI (MATERIALE E LAVORAZIONE) / GENERAL NOTES (MATERIAL AND WORKING)
MODIFICHE/CHANGES
SOSTITUISCE/ REPLACED CODE
SCALA/SCALE
DISEGNATO/ DRAWN
DATA/DATE
FORMATO/SIZE
A3
CONTROLLATO/ CHECKED
DATA/DATE
MDT n.
ADAX REV.
MODIFY
TIPO/ TYPE: SLIM.HC36
DENOMINAZIONE/ PART DESCRIPTION: LAYOUT
CODICE SCHEDA/BOARD P/N
CODICE STAMPATO/PRINTED CIRCUIT P/N
N.DISEGNO/ DRAWING NUMBER: SL.IM.HC36.F1
FOGLIO/SHEET 1/1

System Components

A2B Switch

ACMCP Cable Reel

Proximity switch

Located on swing drive cover

Cable Sheave Guide

A2B Switch CWT

SLIM Display

Mounted on outrigger swing arm

Slew potentiometer

Located inside center area of turret

Pressure Sensors

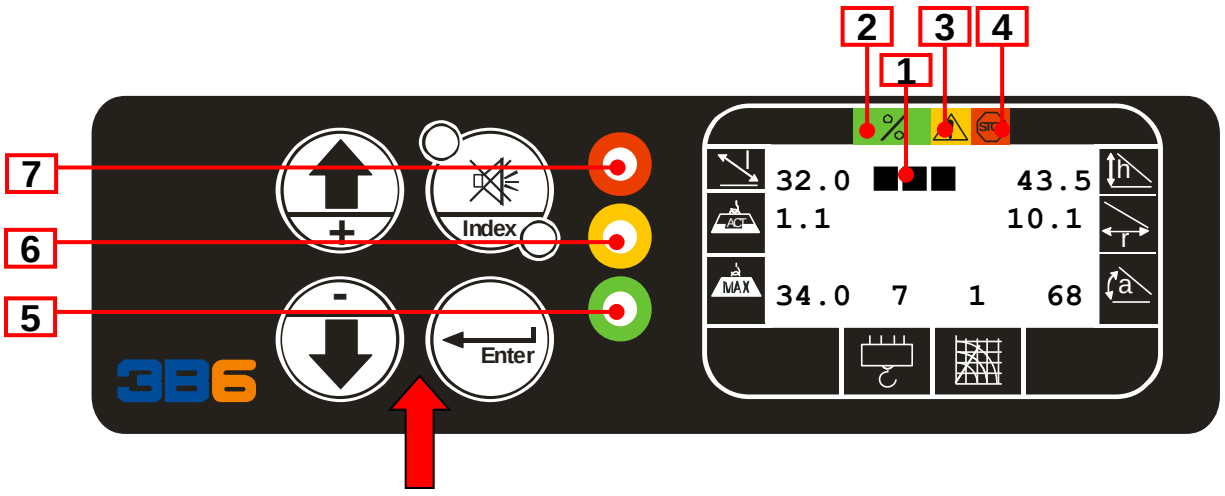
Piston side located on top of the cylinder

Rod side located inside turret area

Main wire harness

Located inside turret area

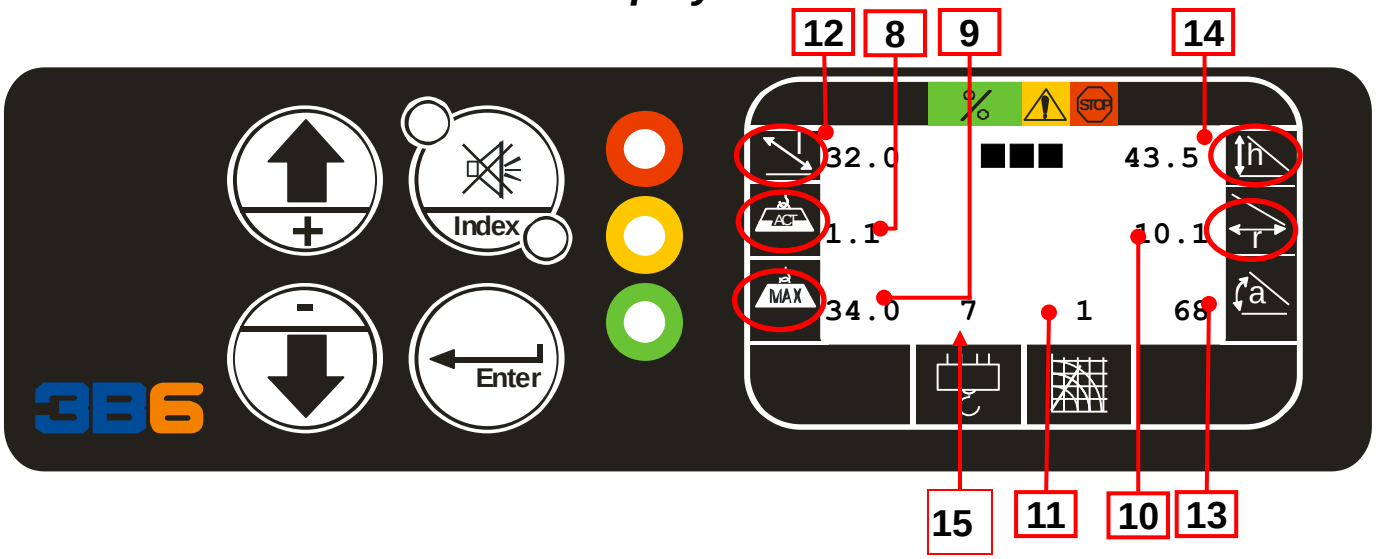
SLIM Display Data



4 Set-up keys

1) LCD bar showing the actual load in percentage to the maximum capacity load in that working condition.
2) Green reference: Normal operating area 0-90% capacity.
3) Yellow reference: Pre-warning (Actual load is higher than 90% of maximum capacity).
4) Red reference: Shut-off Zone (Actual load higher than 100% of maximum capacity).
5) Green Led on: Normal condition 0-90% capacity
6) Yellow Led on: Pre-warning condition (exceeding 90% capacity Audible alarm on)
7) Red Led on: Shut-off condition (100% capacity or higher (Audible alarm on)

SLIM Display Data



8) *ACTUAL LOAD LIFTED: ACT Graphic Symbol : Indicates Actual load suspended, value x 1000 in lbs or kgs*

9) *MAXIMUM CAPACITY LOAD: MAX Symbol; Indicates Maximum allowed load value x 1000 in lbs or kgs*

10) *WORKING RADIUS: distance between the center of suspended load to center of turret rotation point.*  *Value feet and tenths or meters and tenths.*

11) *WORKING CONFIGURATION: Operating Mode or program selected.*

value in feet and tenths or meter and tenths.

12) *MAIN BOOM LENGTH: Distance from Boom rotation pin to boom sheave pin.*

value in percentage 0-100%

13) *MAIN BOOM ANGLE: boom angle in degrees relative to the ground*

value in degrees.

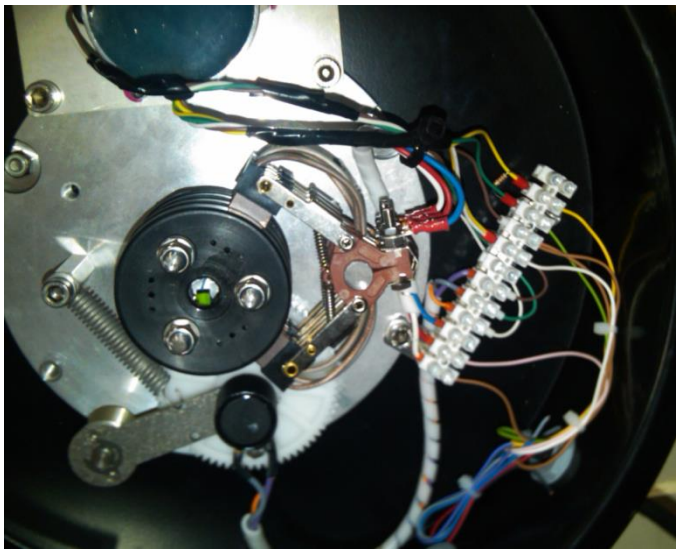
14) *BOOM HEIGHT: Distance from boom tip to ground*

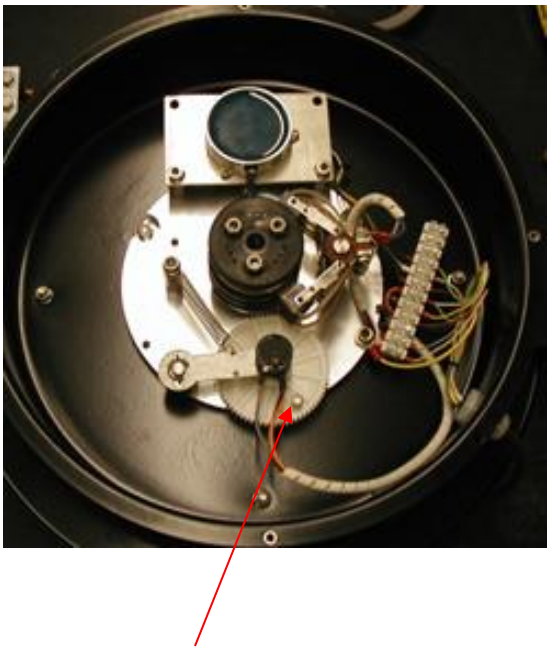
value in feet and tenths or meters and tenths.

15) *PARTS of LINE : Number of wire rope rigging* 

Cable Reel Set-Up

Remove the cable reel cover using a 3mm allen wrench to connect the wiring on cable assembly (T109064) to the cable reel terminal strip. Use the wiring diagram on page 18.





The Length gear is shipped with a bolt to disengage the length pot from the reel drive gear to avoid damage, in case the cable is released on accident. We will remove this and discard once we have the boom fully retracted and set the Length start voltage at .250vdc. The range for the min length setting with the boom fully retracted is .248 to.253 vdc. Measure between the AGND wire (ground/white) and AN1 wire (length output/green)wire.

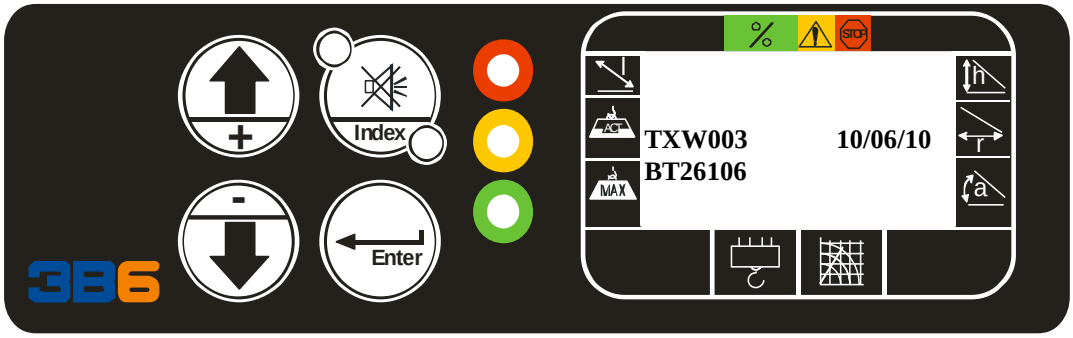
This must be set prior to the run in process or verification. Replace the cover and tighten the 4 screws, make certain the rubber o-ring gaskets are on the screws to avoid moisture intrusion later.

Note!

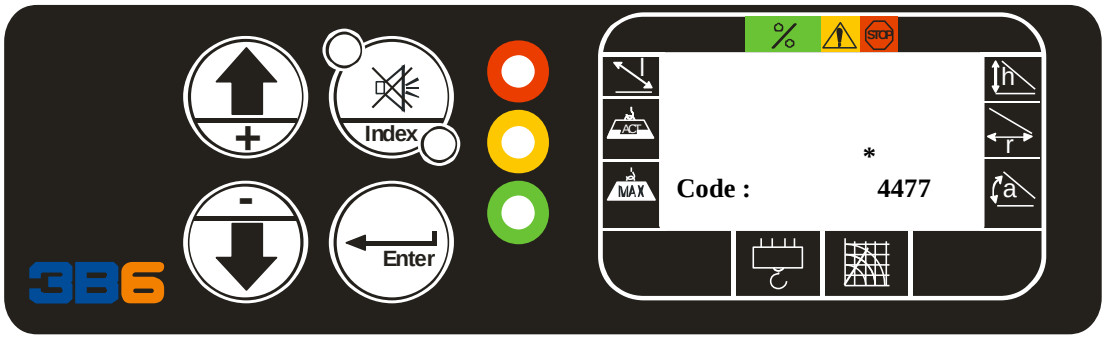
Make certain the cable is spooled properly on the cable reel before setting the length By fully extending the boom and then retracting the boom allowing the wire to spool on the drum properly..

System Password

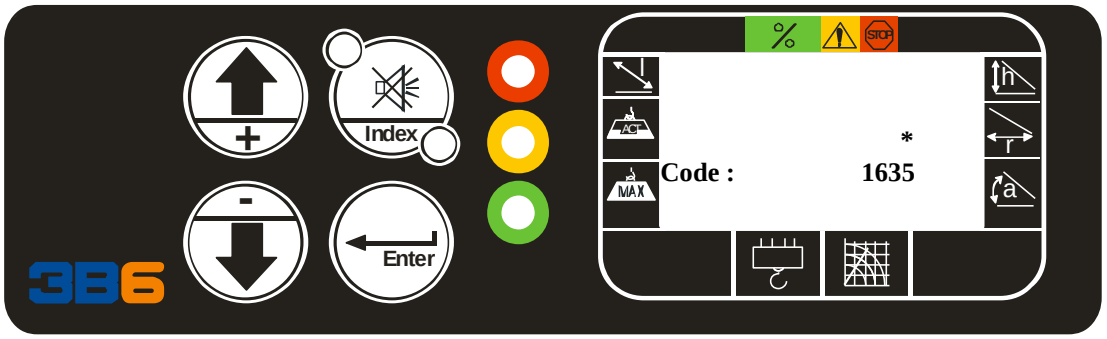
Once power is applied the display will indicate the software version, date and model number of machine, at that point press and release the ENTER pushbutton.



The display will change to the Code access page to enter the password. The displayed value will be 4477 with an asterisk above it.



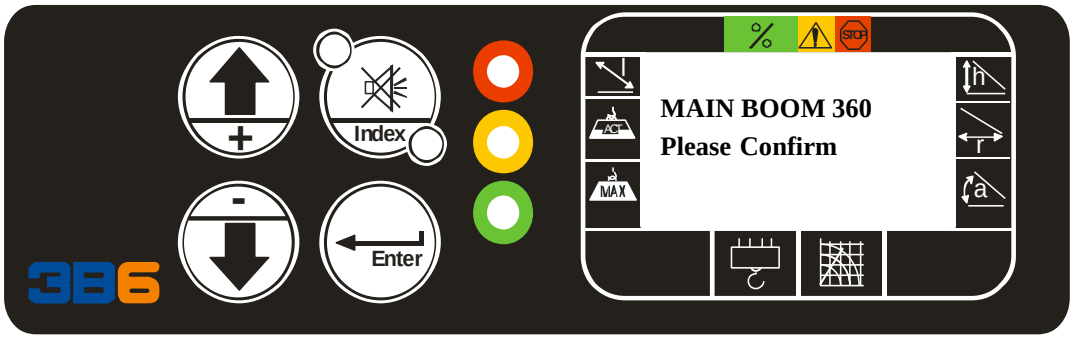
Using the INDEX pushbutton scroll the asterisk over the number and using the UP or DOWN pushbuttons change the value to (1635) password for angle and length calibration. Once you have changed the first value use the INDEX pushbutton to scroll the asterisk over the next value to change it. Continue this until the value is 1635.



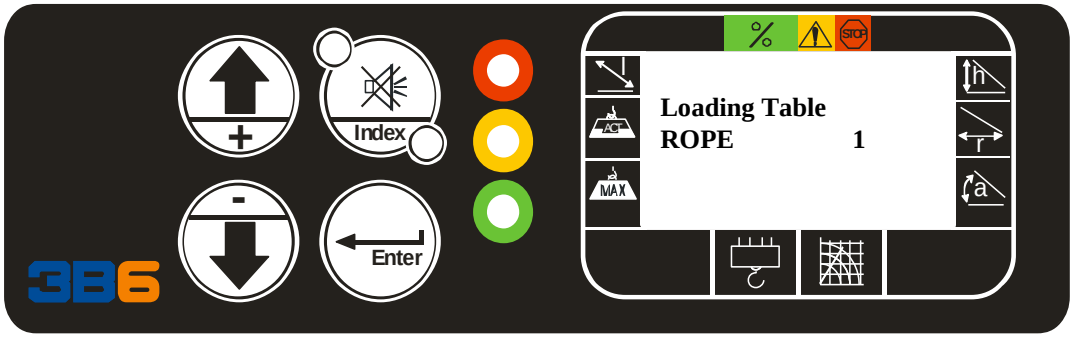
Once the value indicates 1635, press and release the ENTER pushbutton to confirm.

System Password

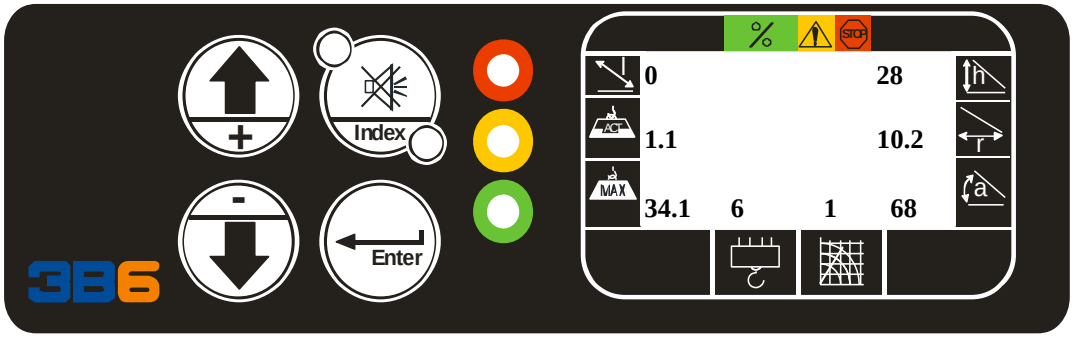
The display will require confirmation of the program in order to continue. (Note: the display will indicate last program selected)



Press and release the ENTER pushbutton again to confirm the parts of line (Note: the display will indicate last parts of line selected)

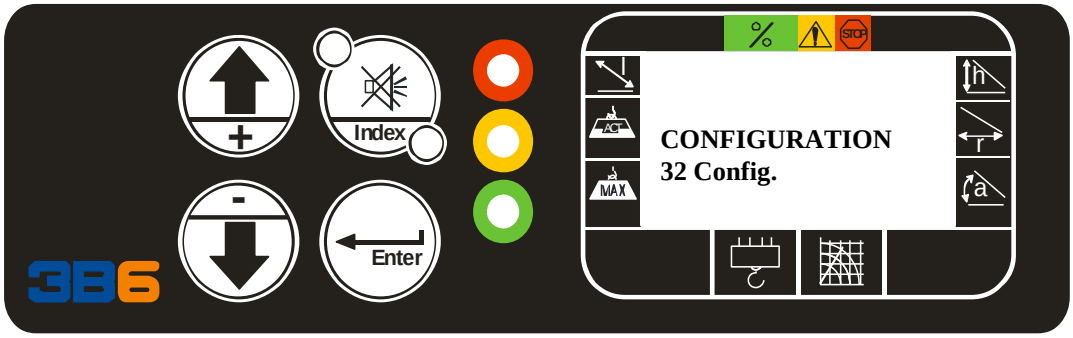


The display now is confirmed and ready to enter the calibration area. (Note: if an alarm code or message is present in the top center area of the display, it will be flashing on the display) This is normal if the angle or length has not been set yet.

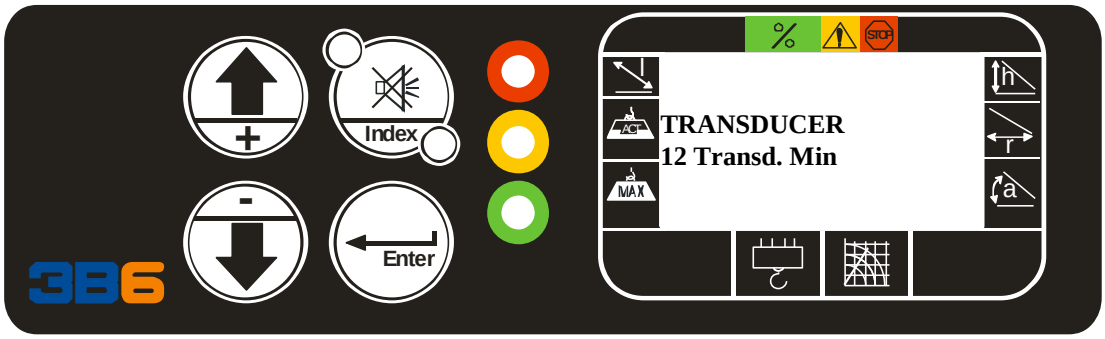


Calibration Min settings

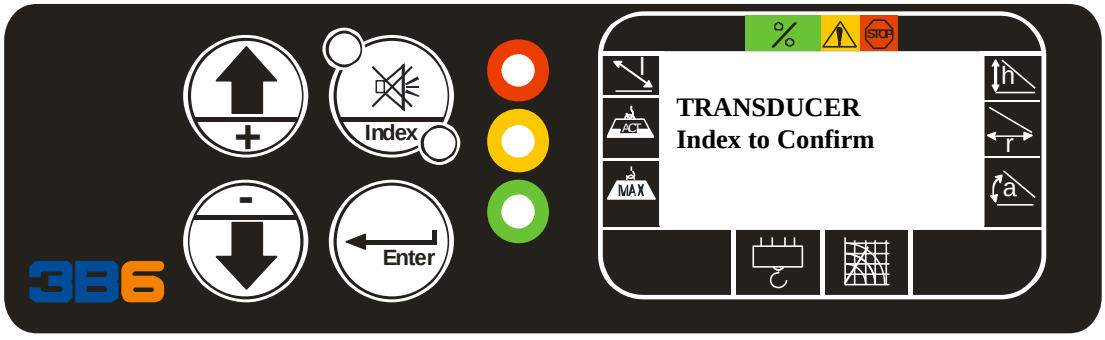
Boom must be at zero degrees and fully retracted.
Press and hold the INDEX pushbutton until the display changes to Indicate CONFIGURATION, 32 Config.



Using the UP arrow , press and release until you see the TRANSDUCER, 12 Transd. Min menu and press and release the enter push button.



Boom should be at zero degrees and fully retracted to set the zero degree angle and fully retracted boom length. Press and release the ENTER pushbutton the display changes to

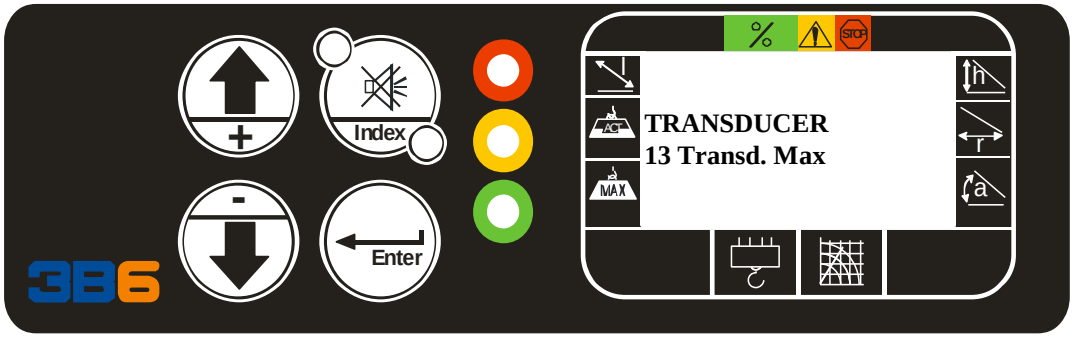


Once you press and release "Index to Confirm" you have just set the zero degree angle and fully retracted boom length.

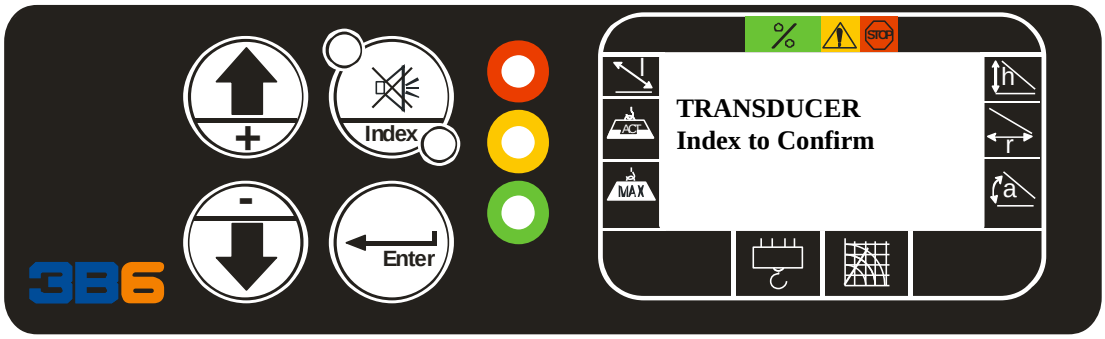
If the boom is not at zero degree and fully retracted, you will have to start over. The display changes back to the first menu CONFIGURATION 32 Config.

Calibration Max settings

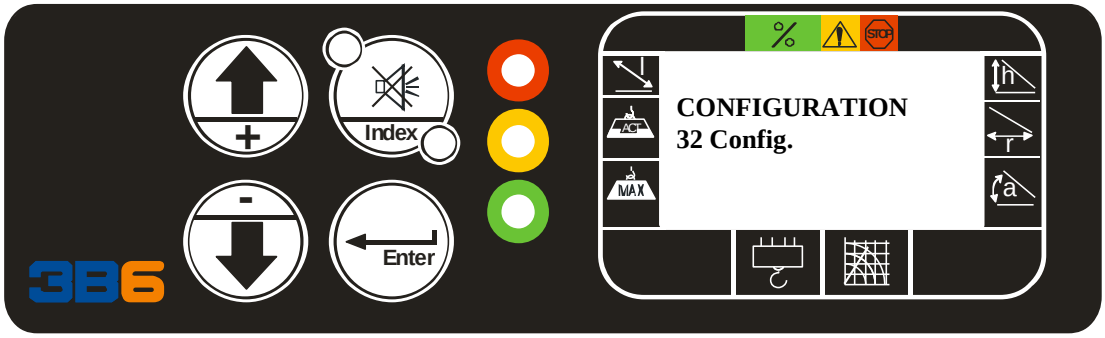
Fully extend the boom and set the angle between 65-70 degrees.
Press and release the UP arrow pushbutton until you see the TRANSDUCER 13 Trands. Max menu.



Boom should be fully extended to set the maximum boom length. Press and release the ENTER pushbutton the display changes to



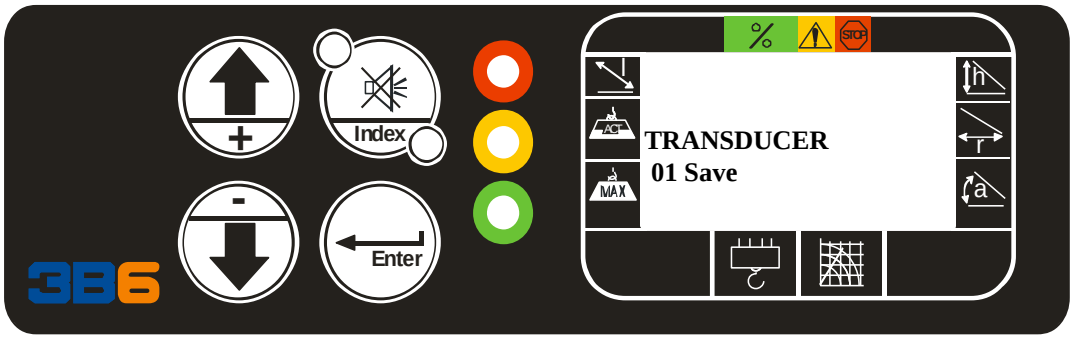
The display changes back to the first menu CONFIGURATION 32 Config.



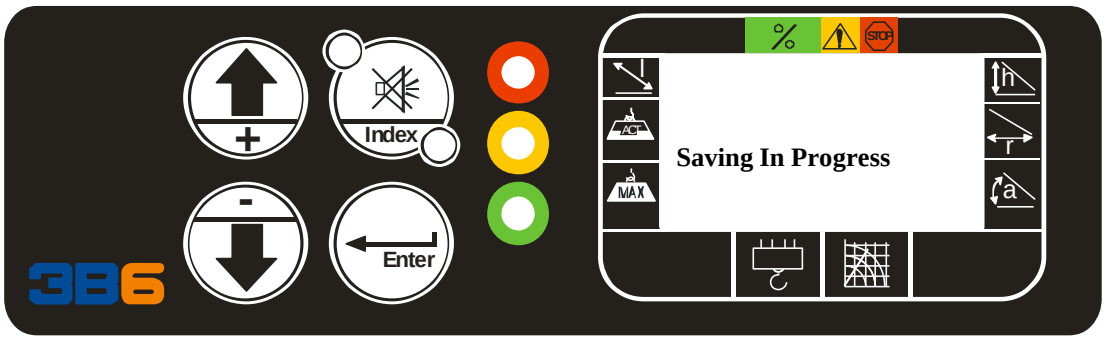
Now we must save the calibration for the min and max angle and length settings. Angle should indicate properly and length should indicate 0 percent when fully retracted and 100 percent when fully extended.

Calibration Save

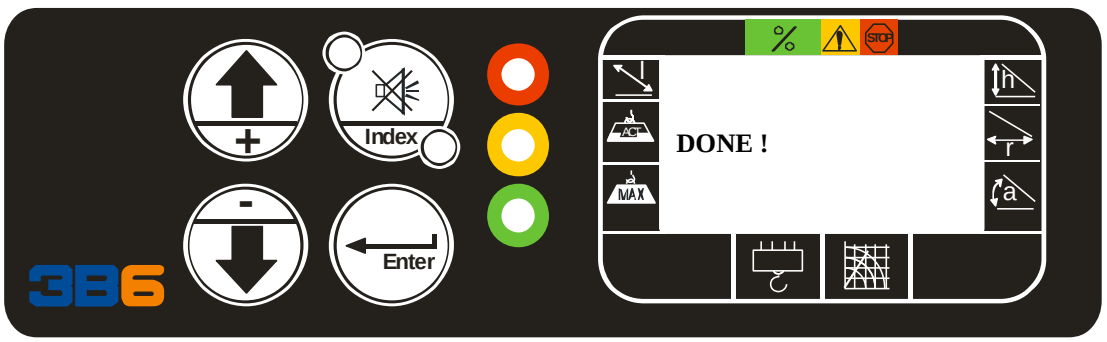
Press and release the UP arrow pushbutton until you see the 01 Save menu.



Press and release the ENTER push button and the display will indicate " Saving in Progress" Do not move the machine when saving data!



Once it is saved it will indicate DONE! The calibration is completed. Now we can set the rotation pot.



Press and hold the INDEX pushbutton to return to the main display screen.

Calibration Rotation Sensor

Swing the boom, centered directly over the rear of the Machine.

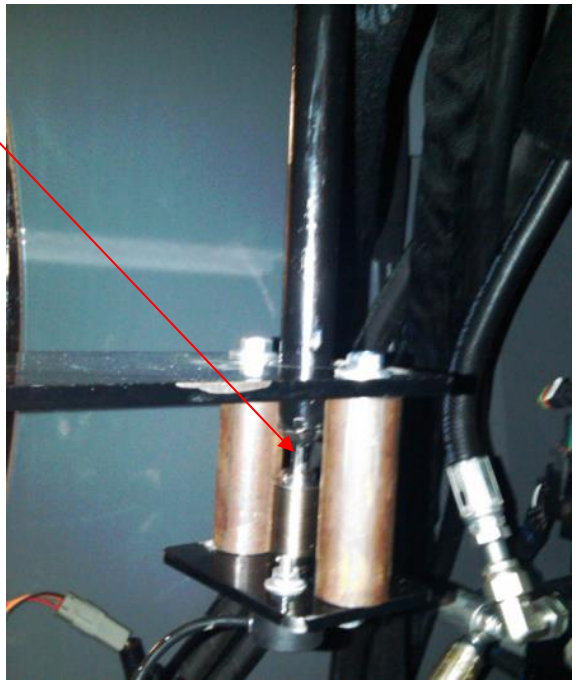
Location is inside turret

Drive Assembly

Collar

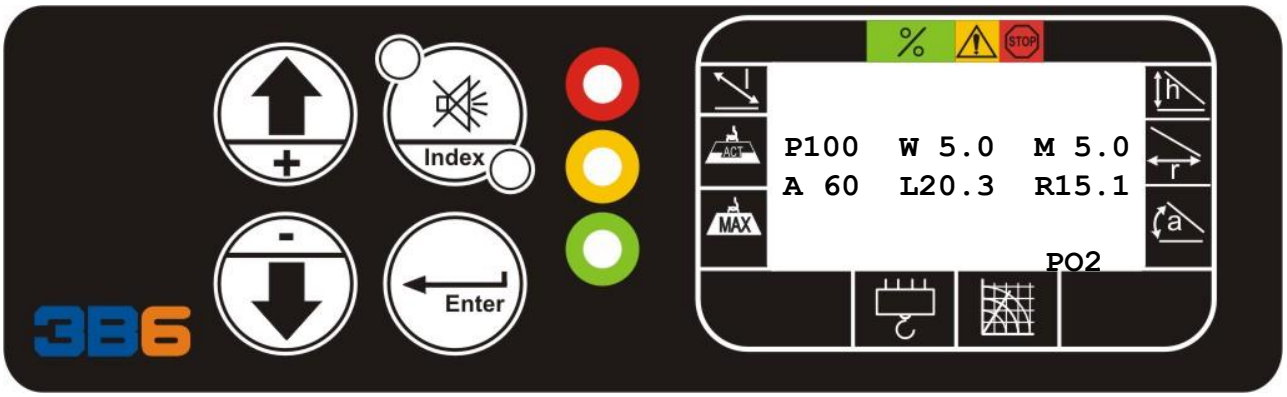
Rotation pot

Loosen the top side set screws on the collar
Use a 1.5mm allen wrench.

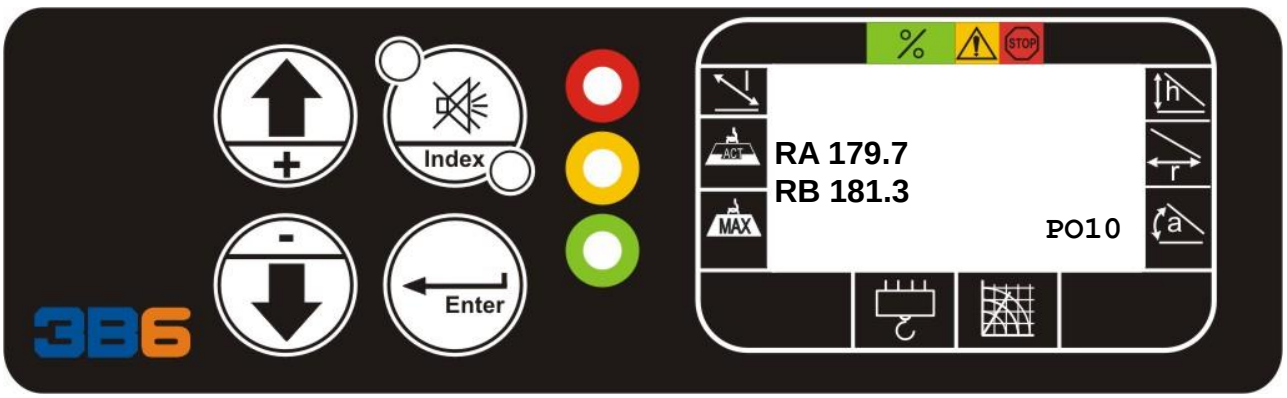


Calibration Rotation Sensor

*Starting from the LMI screen, press and release the **ENTER pushbutton**. The display will change to*

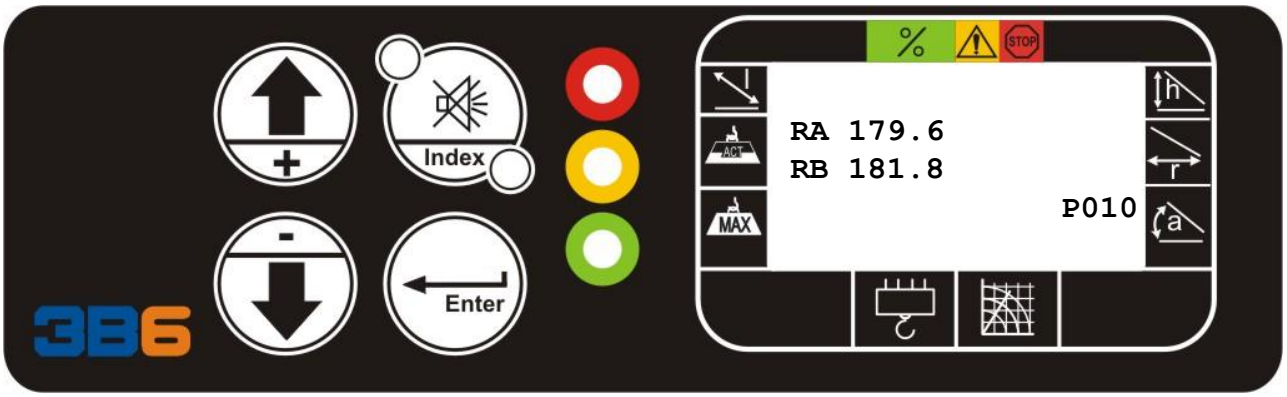


Boom must be fully retracted and centered over the rear of the machine. Press and release the UP arrow to scroll to the P10 page. This menu will stay on for about 30 seconds and you will have to start over to get back to the menu again by following the above procedure.



RA/RB is the channels we will adjust the pot to read 180 degrees (average between the two outputs of channel A and B when the boom is directly over the rear of the machine and tighten the set screws on the upper drive assembly and then tighten the drive assembly set screw. Example Channel A is 179.6 channel B is 181.8. Average is around 180 degrees.

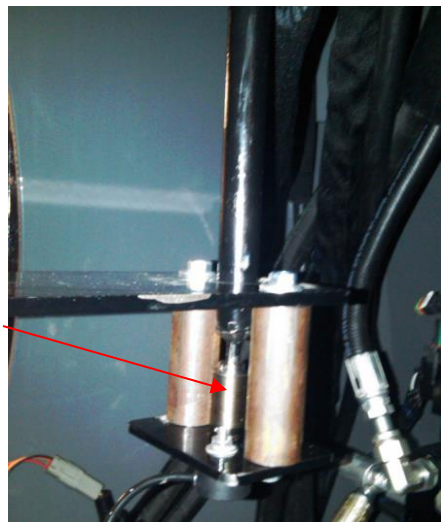
Now verify the rotation.



The displayed parameters are as follows:

- *RA : Channel A of rotation pot values between 0 to 360 degrees*
- *RB : Channel B of rotation pot values between 0 to 360 degrees*

Tighten the set screws on the upper drive Assembly with a 1.5mm allen wrench. Due to Allen set screw position, you may have to Tighten one screw then swing the machine to Tighten the second screw. Check the display For accuracy again and lock-tite the screws On top and bottom of the collar.



Wiring Diagram

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