

MotoCrane Orientation

Topics of Discussion

- MotoCrane System
- Camera Car (Louise)
- Shooting with MotoCrane

MotoCrane System

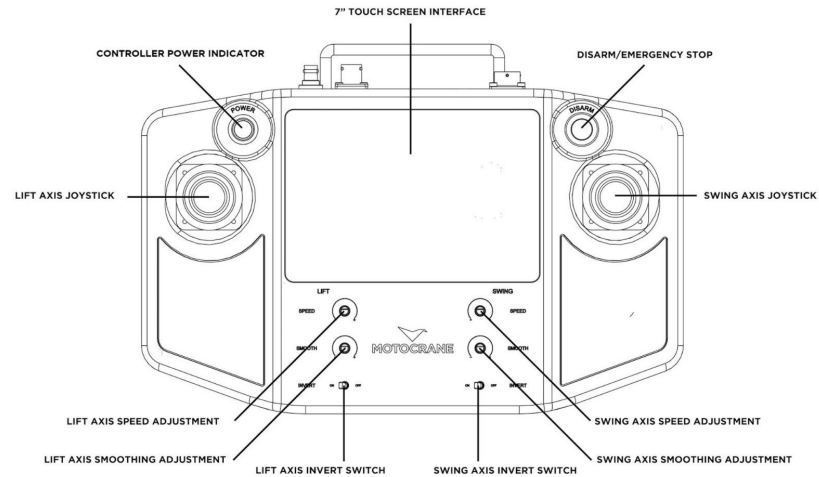
COMPONENTS

MotoCrane System

CONTROLLER

Components

Controller (front view)



MotoCrane System

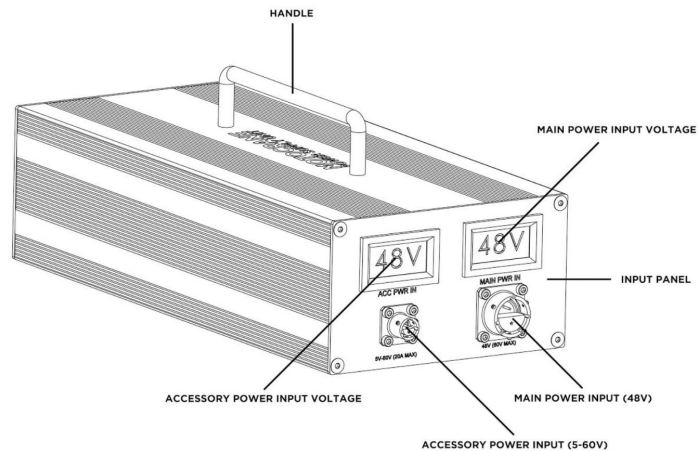
12 to 48 VOLTAGE ADAPTER & ULTRACAP POWER CORE (UPC)



MotoCrane System

POWER SUPPLY UNIT (PSU)

Power Supply Unit (PSU) Input Side



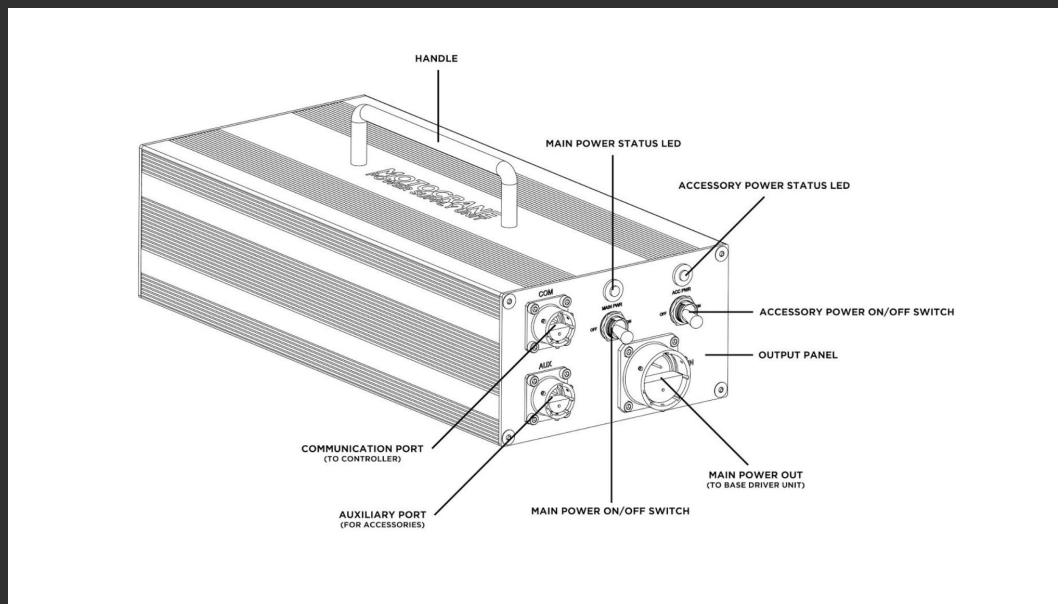
ВСПЕЩОВА БЪМБЕВ ИЪПЪТ (2-90А)

ВСПЕЩОВА БЪМБЕВ ИЪПЪТ АОРЪТОВЕ

МЪИЪН БЪМБЕВ ИЪПЪТ (48V)

MotoCrane System

POWER SUPPLY UNIT (PSU)

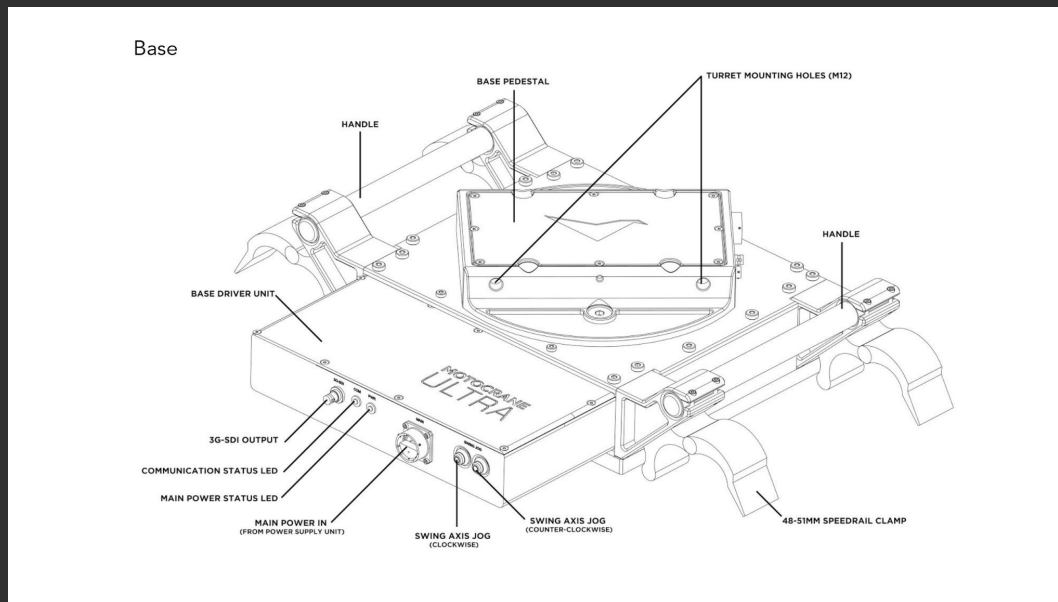


FOR ACCESSORIES)
АUXИЛИАРНА ПОРТА

MAIN POWER ON/OFF SWITCH

MotoCrane System

BASE



180MM POWER STRAP (2.19M)
MAIN POWER IN

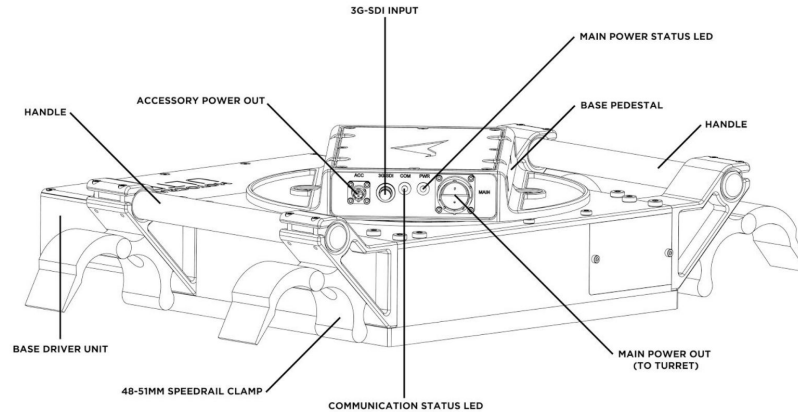
(CLOCKWISE)
SWING AXIS JOG

(COUNTER-CLOCKWISE)
SWING AXIS JOG

48-51MM SPEEDRAIL CLAMP

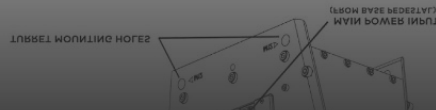
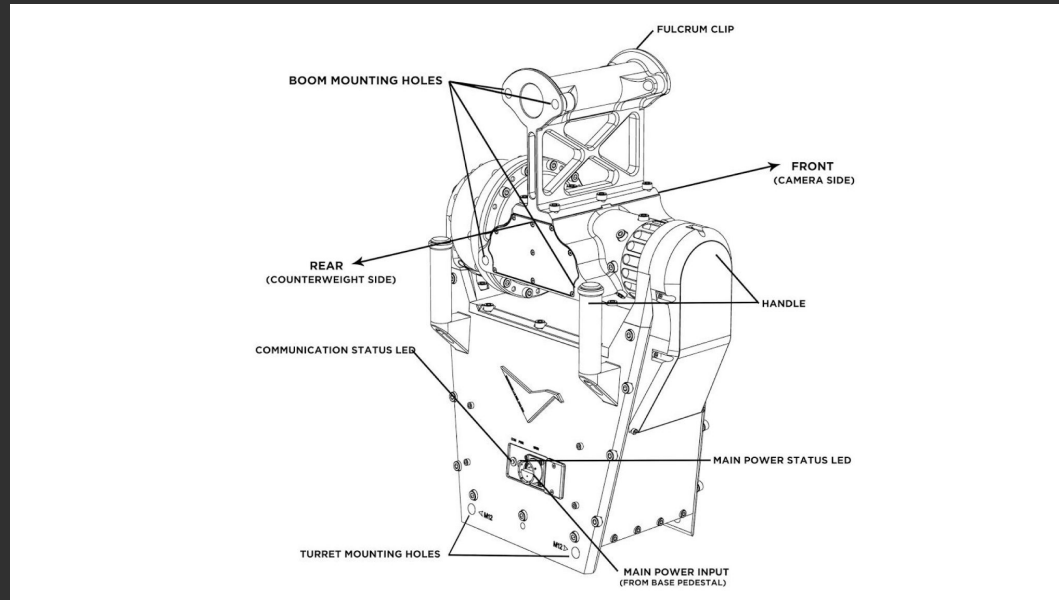
MotoCrane System

BASE



MotoCrane System

TURRET

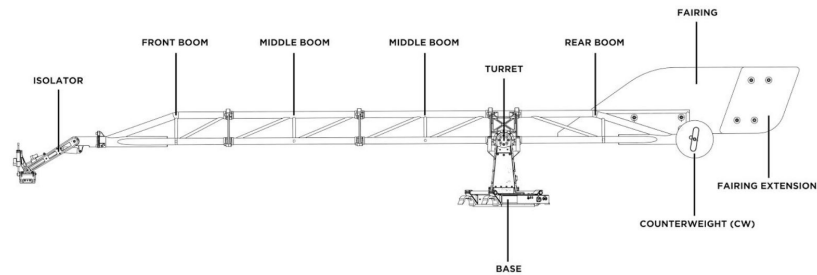


MotoCrane System

ARM

System Overview

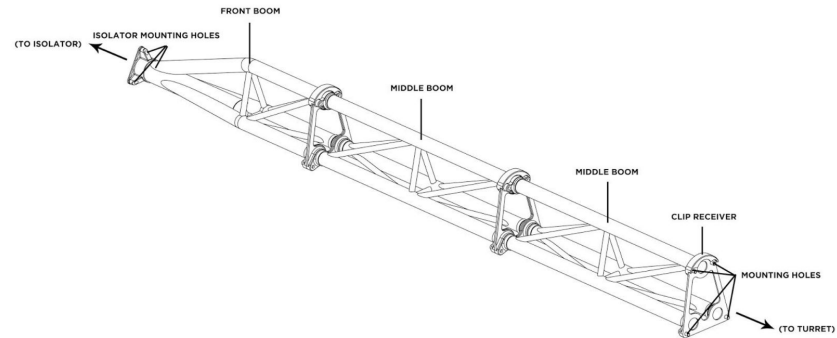
ULTRA



MotoCrane System

FRONT BOOM

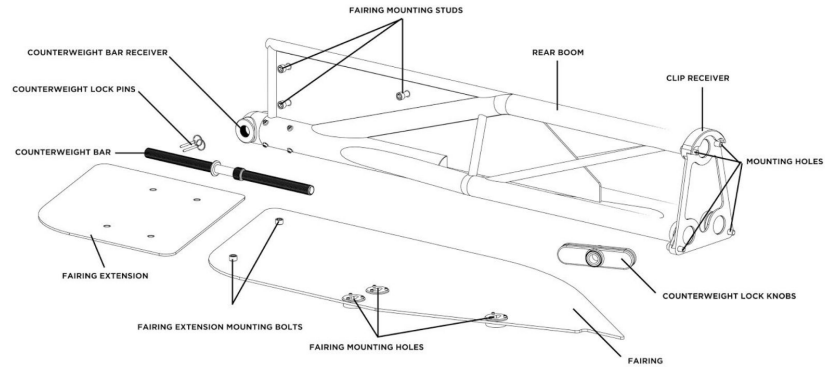
Front Boom



MotoCrane System

REAR BOOM (TAILPIECE)

Rear Boom + Fairing

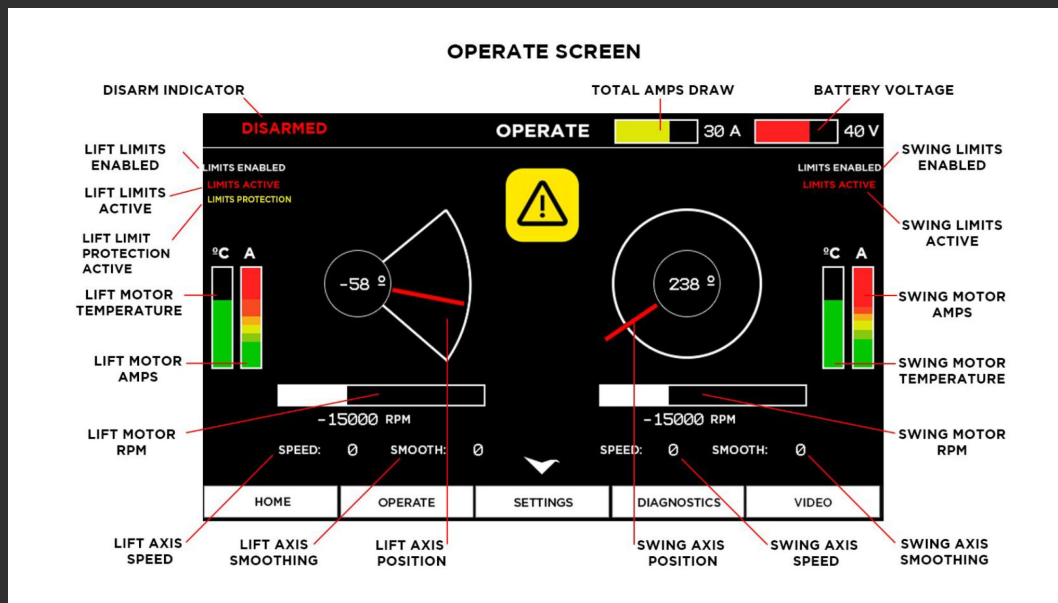


MotoCrane System

CONTROLLER INTERFACE & SCREEN

MotoCrane System

OPERATE

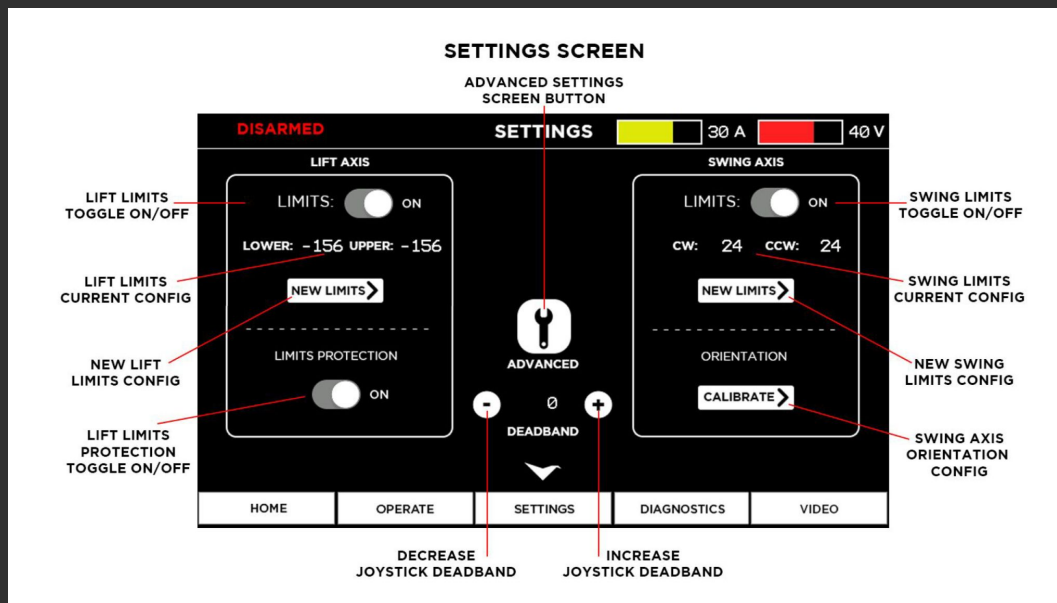


SPEED SMOOTHING POSITION POSITION SPEED SMOOTHING
LIFT AXIS SWING AXIS

HOME OPERATE SETTINGS DIAGNOSTICS VIDEO

MotoCrane System

SETTINGS



MotoCrane System

LIMITS



MotoCrane System

LIMITS



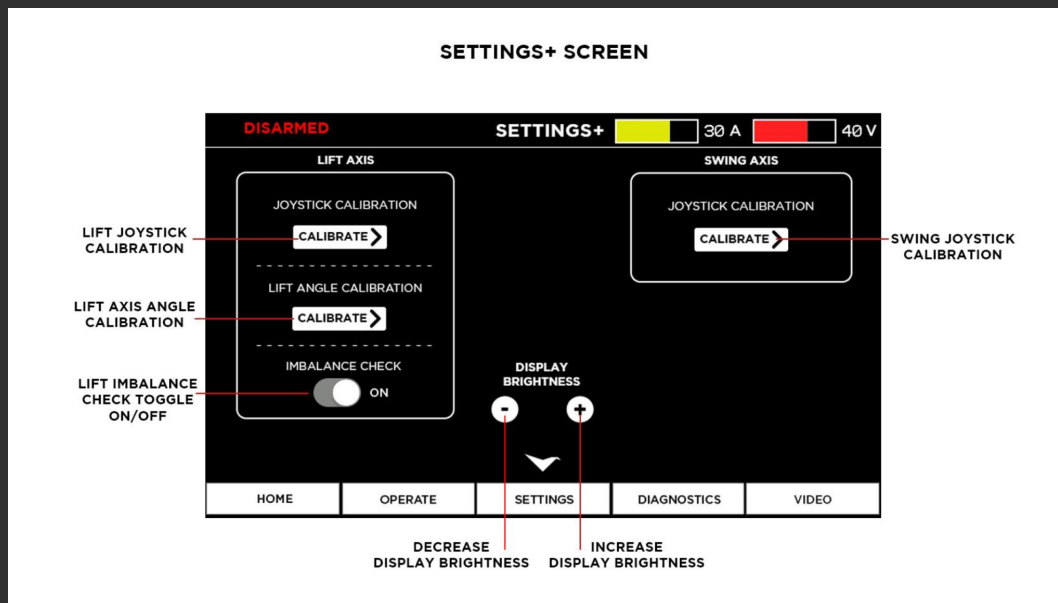
MotoCrane System

LIMITS



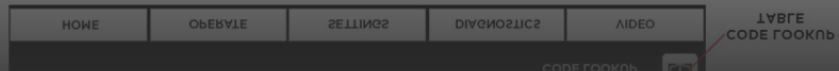
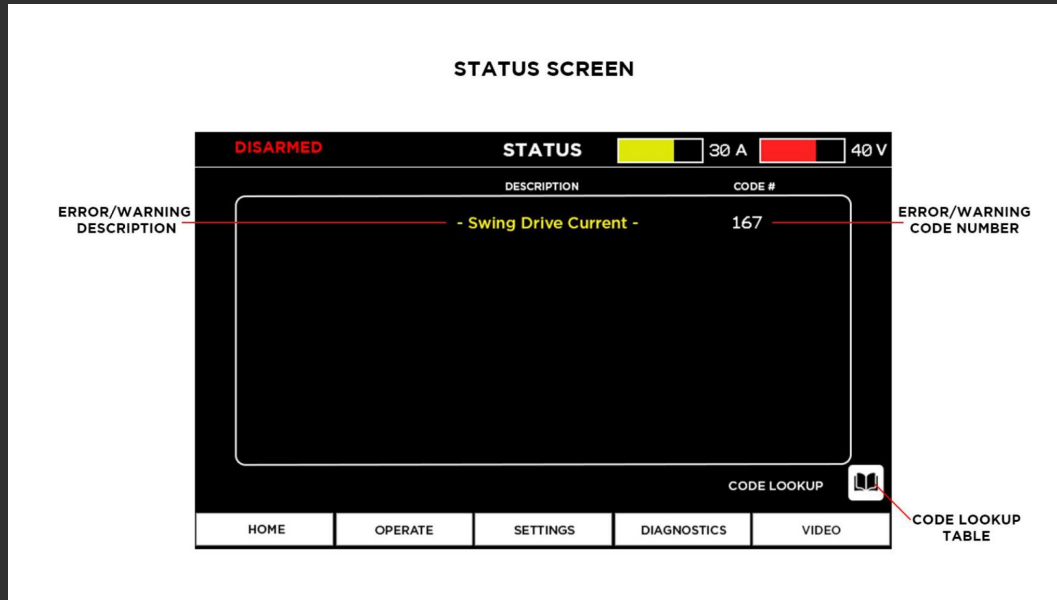
MotoCrane System

ADVANCED SETTINGS



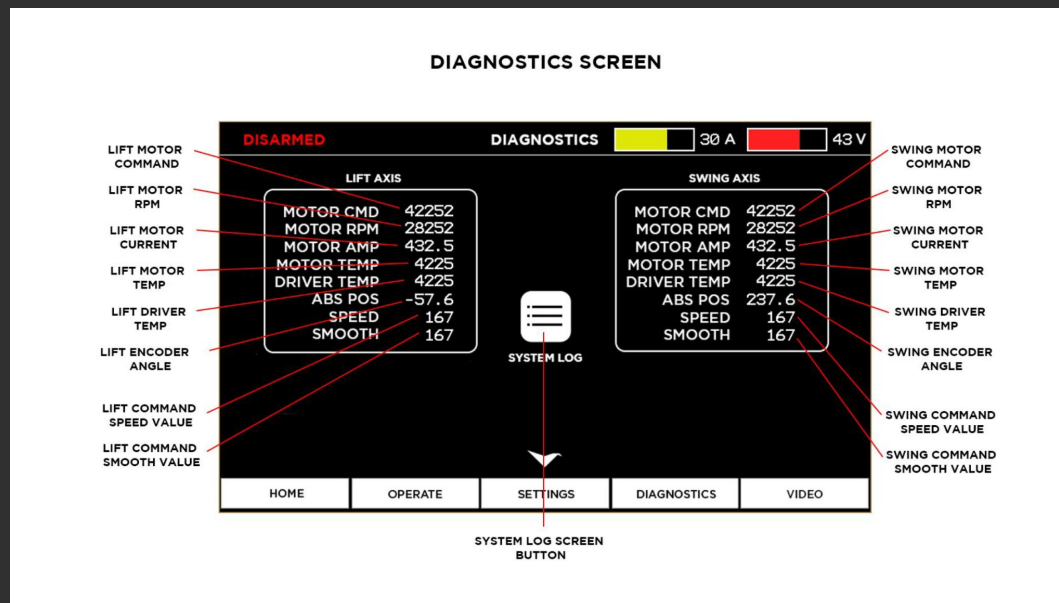
MotoCrane System

STATUS

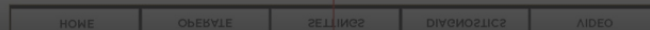


MotoCrane System

DIAGNOSTICS



SYSTEM LOG SCREEN BUTTON



MotoCrane System

SYSTEM LOG

SYSTEM LOG SCREEN

DISARMED **SYSTEM LOG** 30 A 40 V

H : MM	DESCRIPTION	CODE #
0 : 38	- Swing Drive Current -	167
3 : 00	- Swing Drive -	0

ERROR/WARNING DESCRIPTION **ERROR/WARNING CODE NUMBER**

TIME SINCE ERROR/WARNING

CODE LOOKUP TABLE **CODE LOOKUP** **CODE LOOKUP TABLE**

CLEAR LOG CODE LOOKUP

HOME OPERATE SETTINGS DIAGNOSTICS VIDEO

TABLE
CODE LOOKUP

HOME	OPERATE	SETTINGS	DIAGNOSTICS	VIDEO
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TABLE
CODE LOOKUP

MotoCrane System

CODE LOOKUP

CODE LOOKUP SCREEN

ERROR/WARNING DESCRIPTION RECOMMENDED SERVICE PROCEDURE

DISARMED **CODE LOOKUP** 30 A 40 V

CODE #	DESCRIPTION	SERVICE
002	Lift Motor Temp Warning	Use caution and watch motor temp
003	Lift Motor Temp Error	Discontinue use until temp is reduced
004	Lift Motor Temp Sensor Failure	Use caution - contact Customer Service
007	Lift Motor Driver Temp Warning	Use caution and watch driver temp
008	Lift Motor Driver Temp Error	Discontinue use until temp is reduced
009	Lift Motor Driver Temp Sensor Failure	Use caution - contact Customer Service
012	Lift Overcurrent Warning	Use caution and observe current and temps
013	Lift Overcurrent Error	Use caution and observe current and temps
014	Lift Current Sensor Failure	Use caution - contact Customer Service
018	Lift Motor Stall	Power cycle and check functionality
020	Lift IMU Warning	Do not subject the system to higher forces
021	Lift IMU Error	Reduce intensity of use to acceptable level
022	Lift IMU Sensor Failure	Contact Customer Service
029	Lift Motor Command Timeout	Power cycle the system to reset
030	Central Heartbeat Timeout	Power cycle the system to reset

For more information and troubleshooting resources, please consult the operation manual

GO TO LOG

HOME OPERATE SETTINGS DIAGNOSTICS VIDEO

CODE LOOKUP NUMBER

NEXT PAGE

RETURN TO LOG

HOME OPERATE SETTINGS DIAGNOSTICS VIDEO

RETURN TO LOG

MotoCrane System

PAYLOAD & COUNTERWEIGHTS

MotoCrane System

LOADING THE ARM

1. Measure the All-Up Weight (AUW) of the payload then use the AUW vs CW chart to determine how much counterweight (CW) should first be installed before mounting the payload, and if any is needed after.
2. “Payload” includes everything hanging from ULTRA including isolators, remote head, camera, and accessories.
3. Bionic “Payloads” include the following:
 - a. Tranquilizer
 - b. Passive Plates
 - c. Battery Hanger & Batteries
 - d. Ronin 2
 - e. Camera Body, Glass, & Accessories

MotoCrane System

ALL UP WEIGHT (AUW) vs COUNTERWEIGHT (CW)

Payload AUW	Counterweight Pre-load
Empty/No Payload	40lbs/18kg
20lbs/9kg	90lbs CW/41kg, mount Payload
25lbs/11kg	100lbs/45kg CW, mount Payload
30lbs/14kg	115lbs/52kg CW, mount Payload
35lbs/16kg	125lbs/57kg CW, mount Payload
40lbs/18kg	130lbs/59kg CW, mount Payload, Add 10lbs/4.5kg
45lbs/20kg	130lbs/59kg CW, mount Payload, Add 20lbs/9kg
50lbs/22kg	130lbs/59kg CW, mount Payload, Add 35lbs/16kg
55lbs/25kg	130lbs/59kg CW, mount Payload, Add 45lbs/20kg

NOTE: Subtract Counterweight Pre-load by 10lb if Fairing Extension is used.

NOTE: Subtract Counterweight Pre-load by 10lb if Fairing Extension is used.

22lbs/10kg	130lbs/59kg CW, mount Payload, Add 45lbs/20kg
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MotoCrane System

TRANSPORT

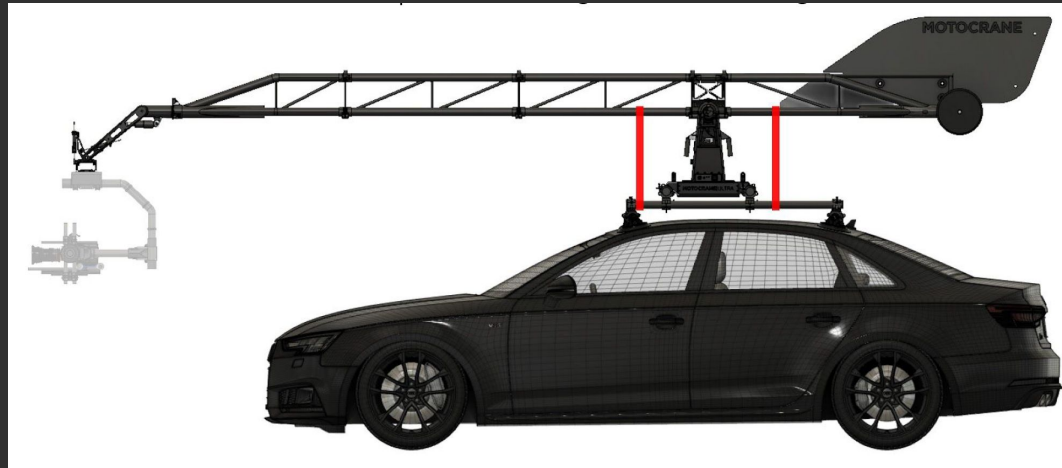
MotoCrane System

PROCEDURE

1. Make sure the DISARM/E-Stop button is engaged (pressed down), then remove payload and counterweight, opposite of installation, leaving empty arm and 40lbs/18kg counterweight.
2. Release the DISARM/E-Stop button (twist clockwise), then move ULTRA to the Home position (level, and aligned longitudinally with the car.)
3. With the DISARM/E-Stop button still released, adjust SPEED to “0” for both axes. This is so that any accidental joystick inputs will not cause ULTRA to move during rigging.
4. Secure the Middle and Rear Boom to rigging using two straps - 1 in front of, and 1 behind the fulcrum or Turret. The straps should be tight, but not overtightened.
5. Engage (pressed down) the DISARM/E-Stop button, which activates the Lift-Axis brake, and cuts power from the motor and motor drivers. You may also turn the PSU Main Power switch “OFF” to conserve battery life.

MotoCrane System

TIE-DOWN PROCEDURE



MotoCrane System

INCLEMENT WEATHER & MAINTENANCE

MotoCrane System

SHOOTING IN THE ELEMENTS

1. Rain, Mud, and Snow
 - a. Base, Turret, Booms, Isolator, and Fairing are IP-65 Rated
 - i. This includes all MotoCrane control and SDI cable connections
 - b. Remote Head, Camera, Lens, and all Electronic Accessories are NOT WEATHER RESISTANT
2. BAG IT
 - a. Plastic bags are best practice for protecting all susceptible gear
 - b. Rubber bands or ties should be used to tighten the wrap as much as possible to reduce wind drag without overheating the equipment
 - c. All cable inputs, motor housings, and display screens / buttons on the Ronin 2 should be protected
3. Wipe down entire system after use to prevent rust and keep the system clean

Camera Car

THE CAMERA CAR
(LOUISE)

Camera Car

ABOUT

2011 Porsche Cayenne Turbo

500 HP | 516 FT-LBS of Torque

Factory Air Suspension & Brakes

Hands Free Coms w/ 2-Way Radio

AC/DC Power | 4 Workstations

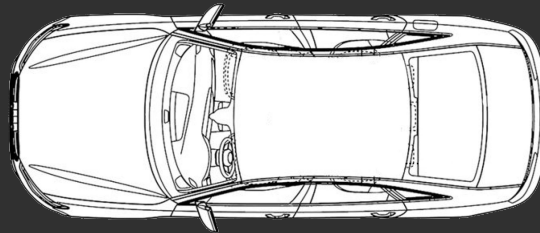
Video Playback

Camera Car

CREW POSITIONS

Boom Operator

- Coordinates All Car & Movement
- MotoCrane Safety Checks



Remote Head Operator

- Balance, Calibrate, Tune, & Troubleshoot the R2
- Calculate Payload & CW

Arm Driver (Camera Car)

- Final Call on Safety
- Car Safety & Troubleshoot Power / Video Feeds

1st AC

- Lens Swings, Media Swaps, & Camera Adjustments
- Charging Ronin Batteries

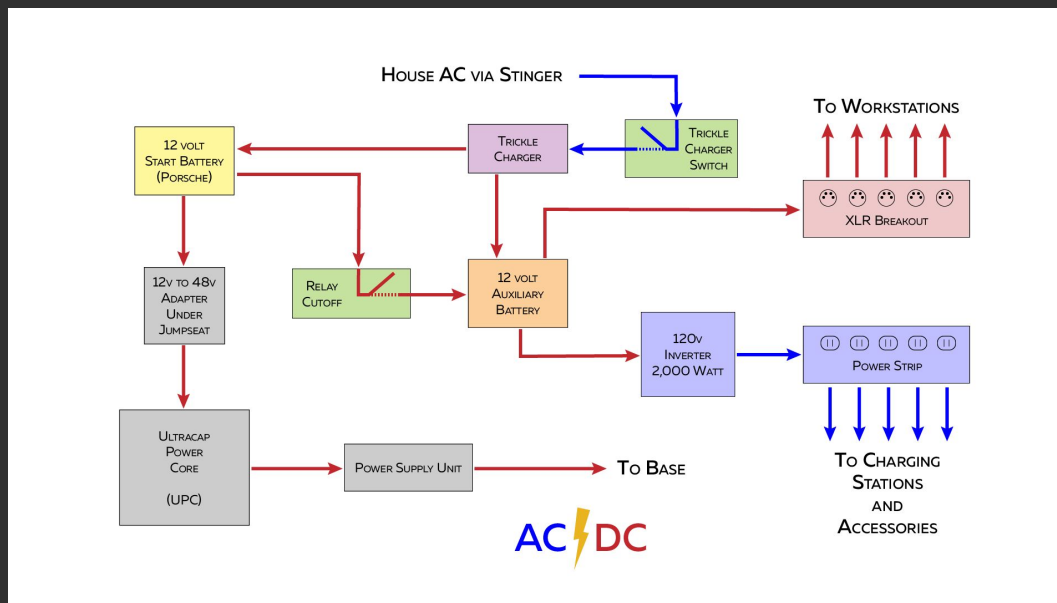
Camera Car

OTHER POSITIONS

- Precision Car Driver
 - Driver of the Picture Car
 - Responsible for scouting the route & safety checks
 - Road conditions
 - Vehicle and tire conditions
 - Environmental obstructions or concerns
 - Coordinate all movement with Arm Driver & Boom Op
 - Talk through the blocking
 - Pre-visualize with toy cars
- Jumpseat
 - Available for Boom Op to maintain line-of sight when operating of the rear of the vehicle for extended periods of time
 - Also available to Directors, DP's, or any other production that needs to ride along

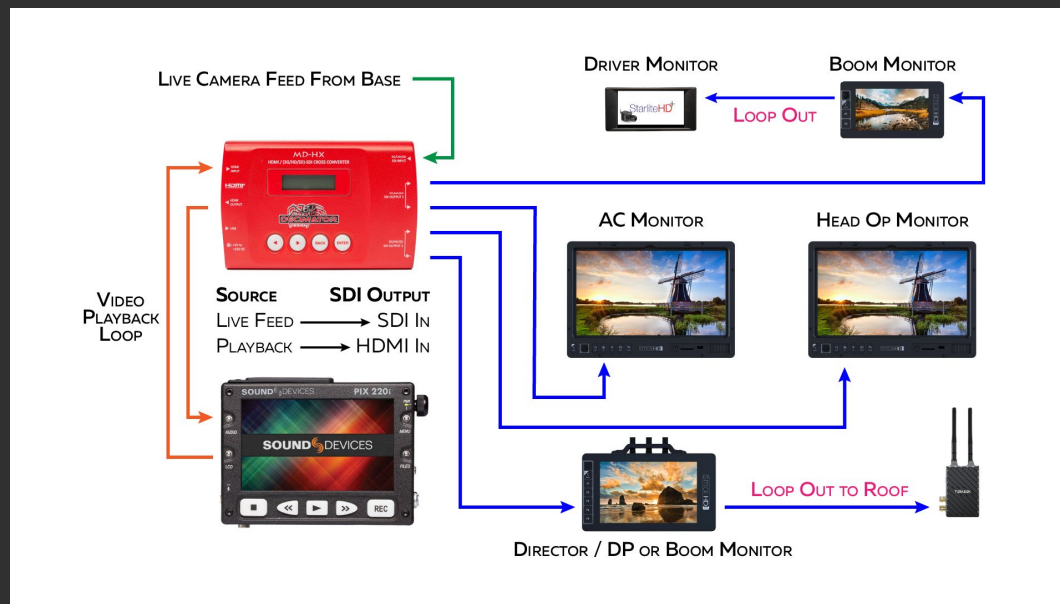
Camera Car

AC/DC POWER FLOW CHART

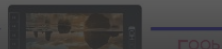
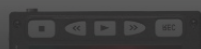


Camera Car

VIDEO FEEDS & PLAYBACK FLOWCHART



DIRECTOR / DP OR BOOM MONITOR



Shooting with MotoCrane

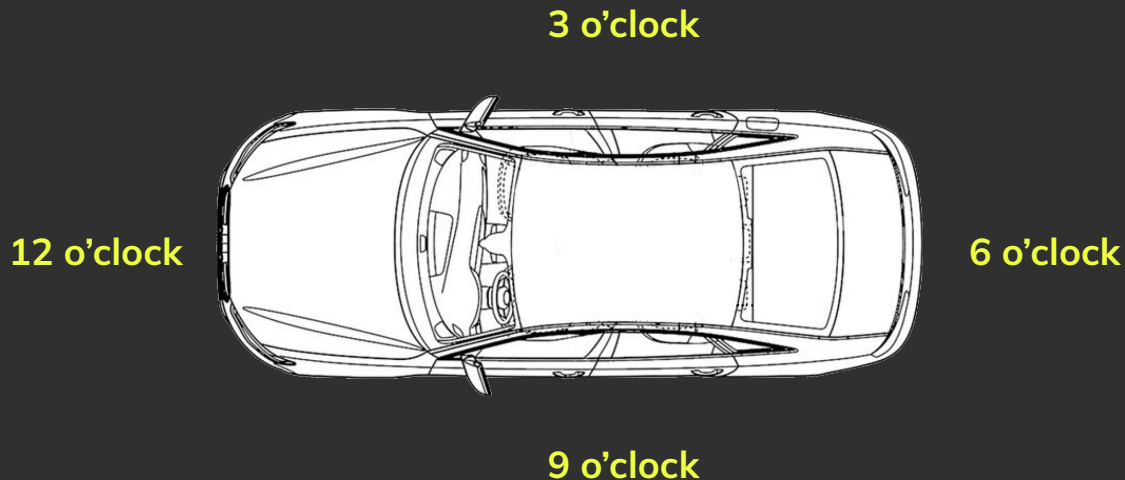
SHOOTING

Camera Car

POSITIONAL VOCABULARY

Boom Position

- Camera Height
 - Low
 - Mid
 - High
- Rotational Position
 - "X" o'clock
 - See illustration
- "Zero Position"
 - Safety height & orientation
 - 12 o'clock - Mid

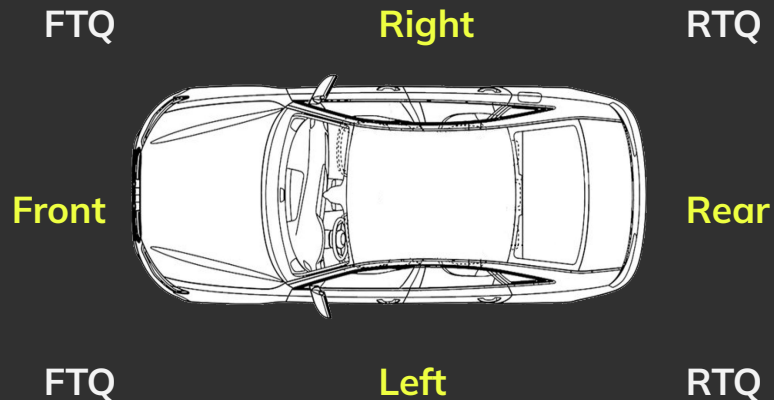


Camera Car

FRAME VOCABULARY

Picture Car - Point of Reference

- Front, Rear, Left, Right
- Front Three-Quarter, Rear Three-Quarter (**FTQ** & **RTQ**)
- **Overhead**
 - Close to or inside the footprint of the Picture Car
- **Blind**
 - Picture Car is out of frame
- **Dutch** vs **Level**



MOVEMENT VOCABULARY

Car to Car

- **Fly**
 - Arm Car & Picture Car travelling in opposite direction
 - **Arrival**
 - Cars approach one another
 - **Departure**
 - Cars retreat from one another

MOVEMENT VOCABULARY

Car to Car

- **Crash**
 - Cars close the distance between them
- **Fade**
 - Cars increase the distance between them
- **Hold**
 - Maintain distance between Arm Car & Picture Car
- **Pass**
 - Picture Car passes Arm Car or vice versa

Camera Car

MOVEMENT VOCABULARY

Car to Car

- **Tracking**
 - Arm Car & Picture Car travelling in same direction
 - **Pace**
 - Cars match speed
 - **Lead**
 - Arm Car leads the Picture Car
 - **Follow**
 - Arm Car follows the Picture Car

Camera Car

MOVEMENT VOCABULARY

Car to Car

- **Wipe**
 - Can be achieved with Boom movement or Car movement
 - **Bumper Wipe**
 - Left to Right or Right to Left
 - **Fender Wipe**
 - Front to Back or Back to Front
- **Strafe**
 - Arm Car & Picture Car are travelling perpendicular to one another
- **POV**
 - No Picture Car
 - Road
 - Environment

MOVEMENT VOCABULARY

Boom

- “Safe”
 - **Boom Up**
 - **Boom Down**
- “Dangerous”
 - **Boom Right**
 - **Boom Left**
- Limits
 - Limits can be set for maximum and minimum height as well as rotation
 - Limits **ARE NOT A FAIL SAFE** - always be aware of and adhere to the numerical positioning of the Arm



FIN