MCC-OPS-1

SPECIALTY HAULAGE SOLUTIONS FOR CONSTRUCTION AND MINING

Operators Manual

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MANUAL USAGE

This technical manual only contains information required to safely operate the MEGA Container Carrier (MCC) system when installed on the CAT 735. See the CAT 735 Operators Safety and Maintenance Manual for chassis specific system information and operating procedures.

Only current production systems are covered in this manual. If your system is not covered in this manual please contact MEGA Corp. Product Support at: 1-800-345-8889 or visit our web site at www.megacorpinc.com for more detailed information.

WARNING, CAUTIONS AND NOTES

The following definitions are found throughout the manual and apply as follows:

⚠ WARNING

Operating procedures and techniques, which could result in personal injury and/or loss of life if not carefully followed.

CAUTION

Operating procedures and techniques, which could result in damage to equipment if not carefully followed.

NOTE

Operating procedures and techniques that are considered essential to emphasis.

USE OF SHALL, WILL AND MAY

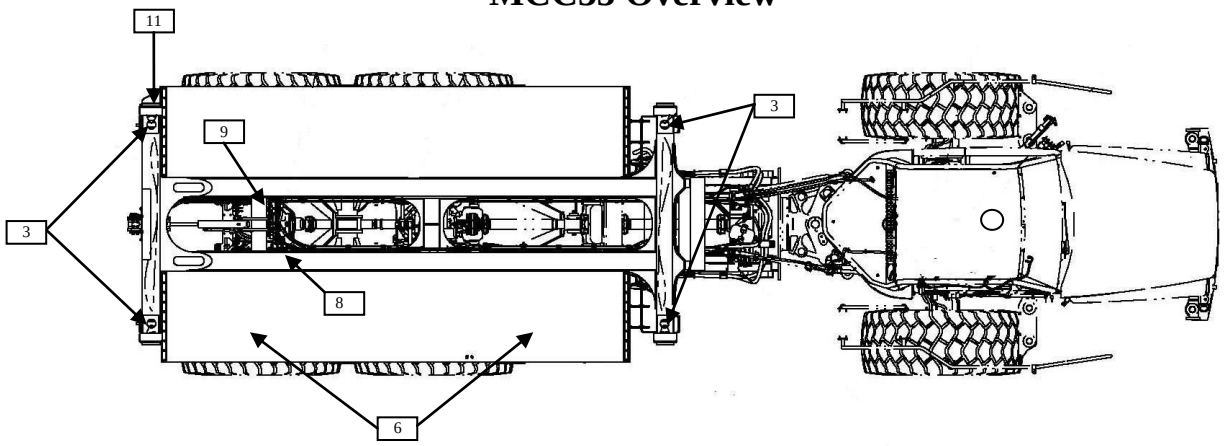
Shall and Will – Used when application of a procedure is mandatory.

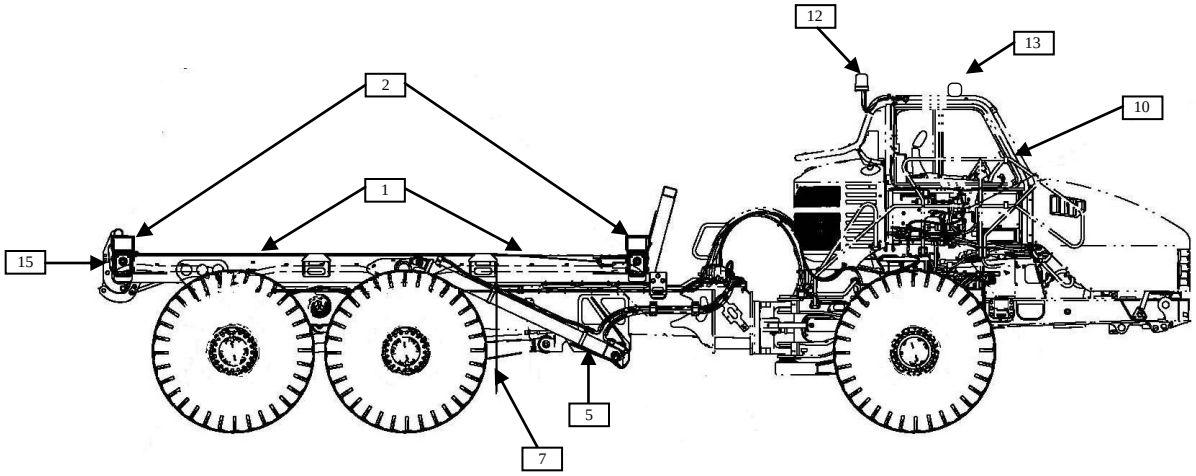
Should – Used when application of a procedure is recommended.

May - Used to indicate an acceptable or suggested means of accomplishment.

SECTION 1
Definitions and Abbreviations

MCC35 Overview





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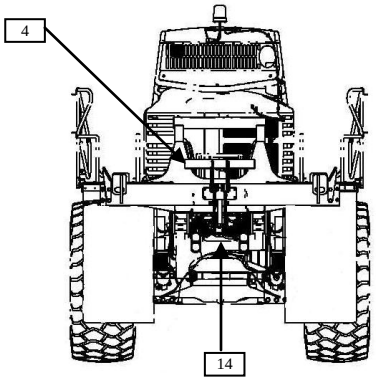

SECTION 1
Definitions and Abbreviations

ABBREVIATIONS

CW – Clockwise
ECM – Electronic Control Module
ft - feet
fpm – feet per minute
IN/SQ FT – Inches per Square Feet
ISO – International Organization of Standardization
KM-H – Kilometers Hour
Kg – kilograms
LT – Left
LWB – Long Wheel Base
M – meters
MCC – Mega Container Carrier
MPH – Miles Per Hour
OEM – Original Equipment Manufacture
PPE – Personal Protective Equipment
psi - pounds square inch
RT – Right
VDC – Volts Direct Current

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Definitions and Abbreviations

SECTION 2
System Description

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MCC35 DESCRIPTION AND USAGE

The MCC35 is designed to be attached to a long wheel base (LWB) chassis after required chassis reinforcements are completed. Once total integration is completed, the assembly can be used to mount, retain, transport, and dump a 20' ISO container.

The MCC35 consists of a body assembly, hydraulics and electrical systems as well as a control system. The MCC35 is fully intergraded with the chassis hydraulics, electrics and control systems while adding additional in-cab controls, lighting, and indicating/warning systems.

BODY ASSEMBLY

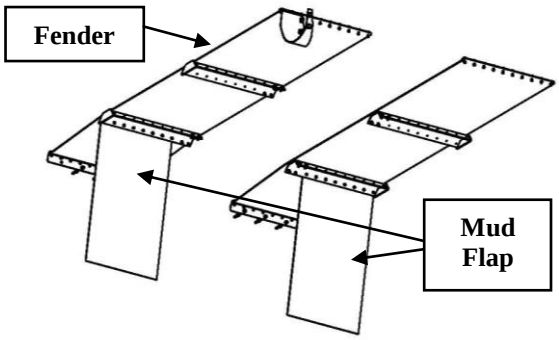
The assembly consists of a tubular frame, fenders and mud flaps, tailgate assembly and twistlock assemblies. The body also contains mounting plates for hydraulic components, sensors and accessories.

Tubular Frame

Constructed of tubular steel, cross tubes and plating to form a frame used to carry the weight of a loaded ISO container. The frame is secured to the chassis by pins installed in the chassis pivot bores and lift cylinders. The frame incorporates container guides on each corner of the frame to center the container over the frame and the twistlock mechanisms. The frame also provides for mounting of the tailgate restraint assembly (stinger), twistlock assemblies, body lift cylinders, body pads, body guides, fenders and mud flap assemblies.

Fenders & Mud Flaps

The assembly is designed to protect the container and body assembly from mud and debris created by the drive tires. The fenders and mud flaps assemblies are constructed of rubber belting material and attached to triangular metal stanchions. The stanchions are mounted to the body assembly's main longitudinal beams and contain fender tensioning devices to keep the belting just below a loaded container.



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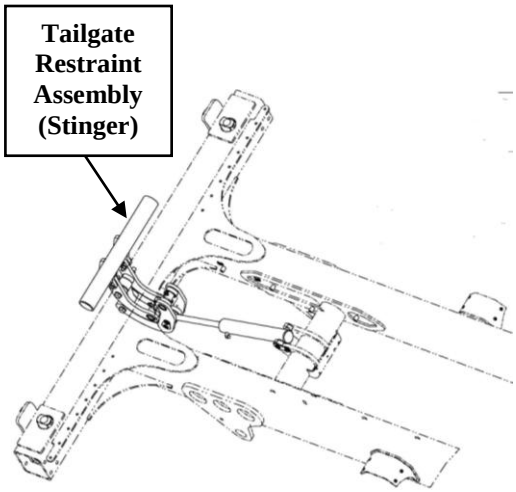
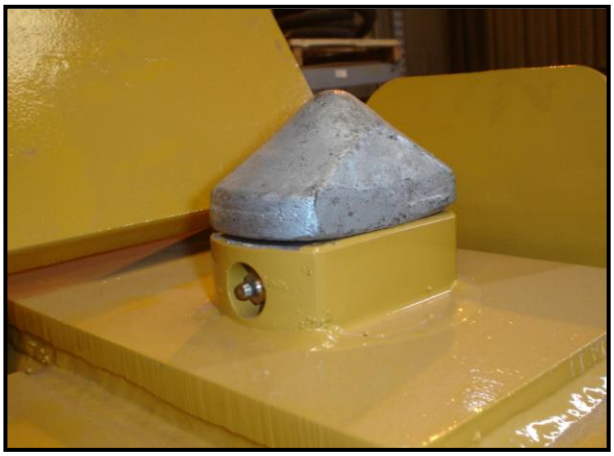
System Description

Tailgate Restraint Assembly (Stinger)



A steel tube and plate assembly that mounts and pivots on the rear of the tubular frame. The tailgate restraint assembly (stinger) is designed to raise and restrain container doors in a closed position when the body assembly is down. A hydraulic cylinder is mounted between the tailgate and tubular frame to raise and lower the assembly as commanded by the hoist control lever when the vehicle is in motion. The assembly can also be operated from the tailgate remote body operation switches when the vehicle is stationary.

Twistlocks Assemblies



The body assembly contains 4 twistlock mechanisms located at each corners of the body assembly. Each twistlock mechanism consists of the 90° rotating block, hydraulic actuator cylinder and a position sensor. The twistlocks are designed to slide into the ISO container floor receptacles as the container is lowered onto the body assembly. Once the container is resting on body assembly the twistlocks can then be commanded to rotate 90° by using the in-cab twistlock switch. The twisting action will allow the lock to engage the container and secure the container to the body assembly.

HYDRAULICS

The MCC35 hydraulic system uses chassis hoist pressure for body and tailgate operation while twistlock operation is accomplished by using hoist pilot pressure. The MCC35 hydraulic components consist of body lift cylinders, tailgate control valve assembly, tailgate cylinder counterbalance valve, tailgate cylinder, chassis mounted accumulator, twistlock solenoid manifold, twistlock actuators and associated hosing.

Body Lift Cylinders

The body lift cylinders are MCC specific and are mounted to the bed and chassis like a dump body. Cylinders hydraulic pressure and return is routed through the chassis hoist valve as controlled by the in-cab hoist lever. The supplemental ECM controls the body lifting angle and places a mid-point stop at an application specific angle. The mid-point stop is set to keep the tailgate from contacting the ejected load or ground and damaging the tailgate door. A hoist mid-point override switch is used to reactivate the hoist valve for raising the body to the full load ejecting position.

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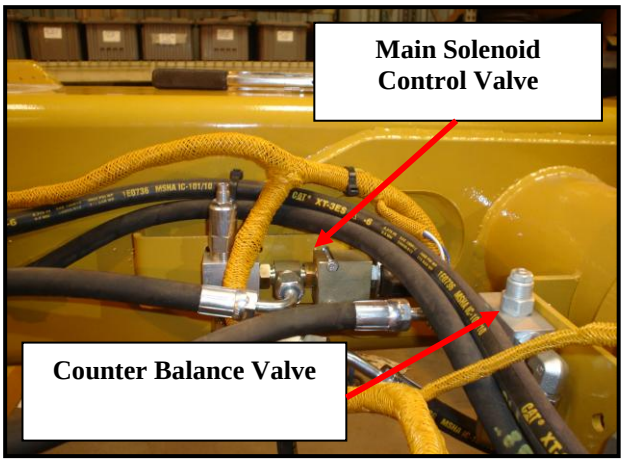
System Description

Tailgate Restraint (Stinger) Valve Assembly



The valve assembly consists of a main solenoid control valve and a counter balance valve. These manifolds hosed together and mounted to the body RT main beam and cross tube respectively. The two valve assemblies combine to route and control hoist valve pressure and return for the tailgate cylinder function.

Main Solenoid Control Valve

The main solenoid control valve contains a pressure relief and solenoid valve. The pressure relief valve controls the clamping pressure for the stinger to keep the tailgate door closed. Pressure relief settings are field adjustable for each specific type of container or load being transported.

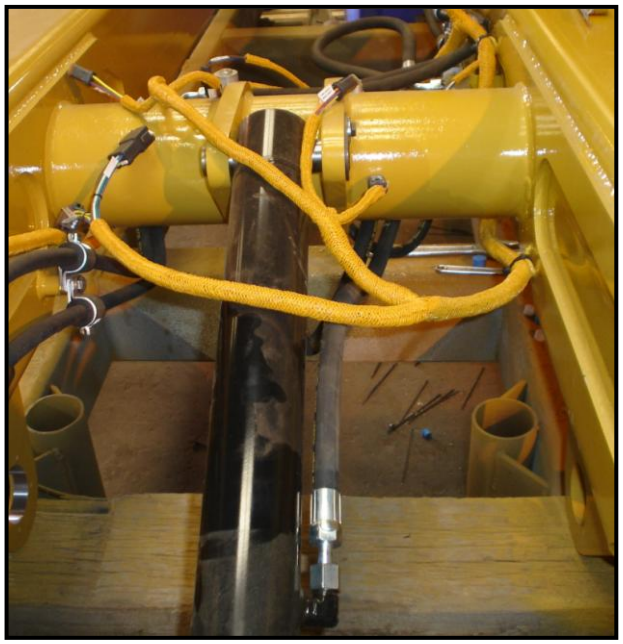
Counter Balance Valve

Mounted to a plate and hosed to the main solenoid control solenoid. The valve assists in maintaining the holding pressure for the stinger. Pressure relief settings are field adjustable for each specific type of container or load being transported.

Theory of Operation

The tailgate restraint valve assembly functions as commanded by the remote activation switches while the vehicle is stationary or the hoist lever while the vehicle is in motion.

Tailgate Restraint (Stinger) Cylinder



The cylinder is connected to the body assembly cross tube at one end and the tailgate assembly at the other end. The cylinder receives hydraulic pressure from the tailgate restraint valve assembly.

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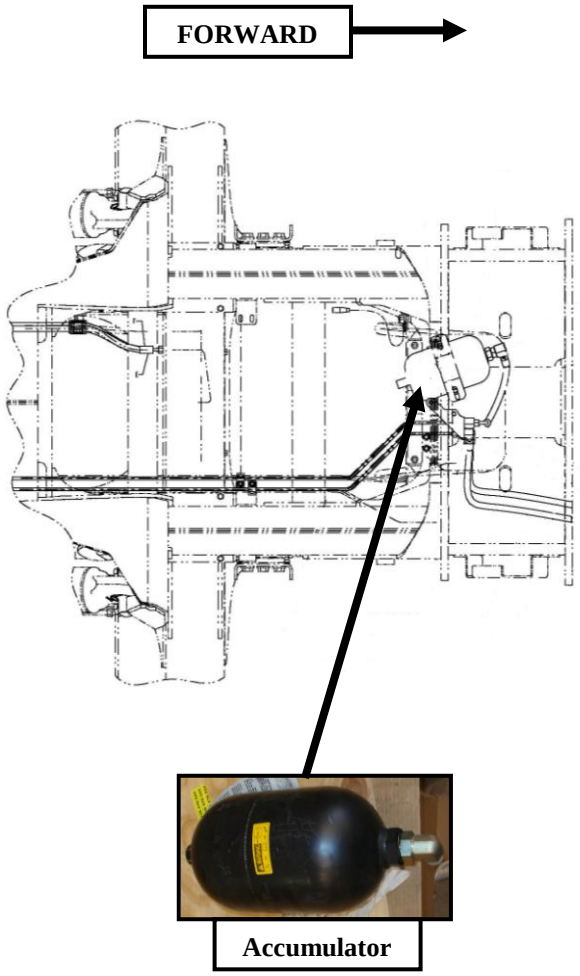
Twistlock Hydraulic Accumulator

Mounted just to the rear of the chassis articulation joint and is connected directly to the hoist valve pilot pressure circuit. The accumulator provides additional pressurized hydraulic volume on demand for the body twistlock manifold assembly for twistlock operation.



WARNING

The hydraulic accumulator is a high pressure charged vessel. Follow the CAT 735 Maintenance and Service Manuals for proper charging procedures. Failure to charge this vessel properly may result in serious personal injury or death.

Twistlock Solenoid Manifold

The manifold assembly is mounted to the body assembly cross tube. The manifold receives pressure from the accumulator assembly while routing return pressure to the chassis hydraulic tank. The manifold contains a solenoid valve to route hydraulic pressure and return to and from the twistlock actuators as commanded by the twistlock controls and a pressure reducing valve to prevent over pressurization of the twistlock actuators.

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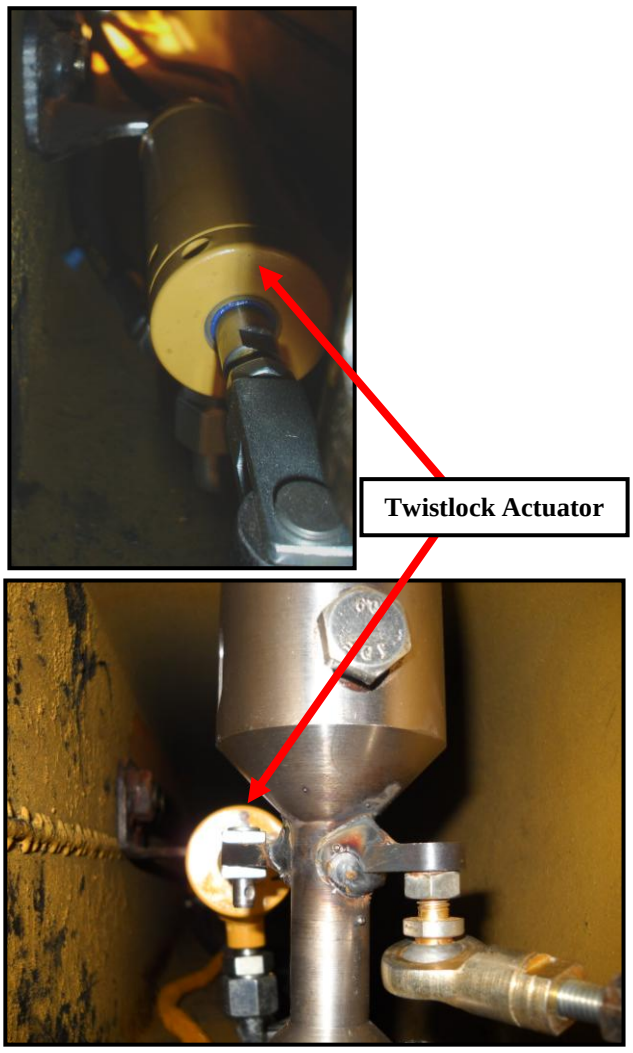
System Description

Twistlock Actuators

Four twistlock actuators are mounted inside the forward and rear lateral tubes of the bed assembly. Each actuator is connected to the center of the twistlock and receives hydraulic pressure from the twistlock manifold assembly as commanded by the twistlock controls. Each actuator is equipped with an adjustable clevis to allow for adjustment of the twistlock head angle.

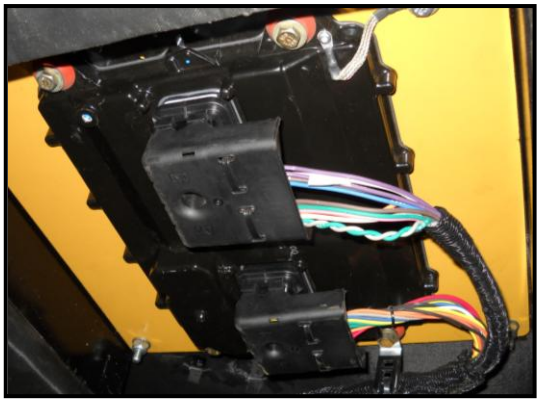


CONTROLS AND INDICATING SYSTEMS

The controls required to operate the body assembly and integrate with the existing chassis controls are located throughout the entire vehicle and bed assembly. The MCC35 adds several new control components and indicators to increase safety and reliability for the entire system.

The control components consist of an additional body assembly, ECM (Electronic Control Module), hoist lever mounted midpoint override switch, remote tailgate restraint operation switches, tailgate restraint control fault indicator lamp, in-cab twistlock control switch, twistlock position sensors, twistlock position status indicator lamp and a roof mounted twistlock status beacon.

Body Assembly ECM



The unit is located under the floor of the cab under the operator's seat. This additional ECM is integrated to existing chassis ECMs with cable harnesses and loaded with a MCC35 specific software flash file.

The ECM controls and monitors hoist lever position, hoist lever override switch, remote body operation switch panel, bed position sensor, in-cab twistlock switch, twistlock position sensors, twistlock status indicating beacon, transmission and hoist valve.

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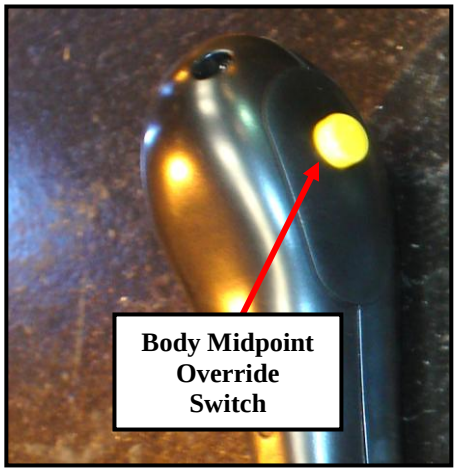
System Description

Hoist Control Lever Handle



A modified hoist lever handle replaced the existing handle to provide a midpoint override switch capable of disabling the ECM commanded hoist raise stop signal. The hoist lever still performs normal hoist functions of **RAISE**, **HOLD, FLOAT** and **LOWER** as described in the CAT Operators Safety Manual with the exception of hoist raise automatic midpoint stop feature as described below and in the Body Assembly ECM. The hoist lever will also allow tailgate functions to occur automatically at the beginning of a raise function (tailgate down to unrestrain container doors) and at the end of a body lower function (tailgate up to retain container doors) only when the vehicle is in forward motion above 7 mph.

Tailgate Remote Operation Switches

The panel is mounted on the left rear tube of the body assembly just below the amber marker light. The panel contains 2 switches normally used to lower the tailgate and relieve pressure on the container doors or to raise the stinger to secure the tailgate for transport. These switches will only function if the stinger fault indicator lamp is extinguished, the hoist lever is in FLOAT, twistlocks are in the full ENGAGED position and the vehicle is stationary.

The OPEN switches may also be used for limited body lift function. This function is limited by the additional ECM as programmed. This will prevent the body from raising above the preset angle when the stinger OPEN switch is depressed. If the body does RAISE the ECM will command the hoist valve to return to the FLOAT position and the body will lower.

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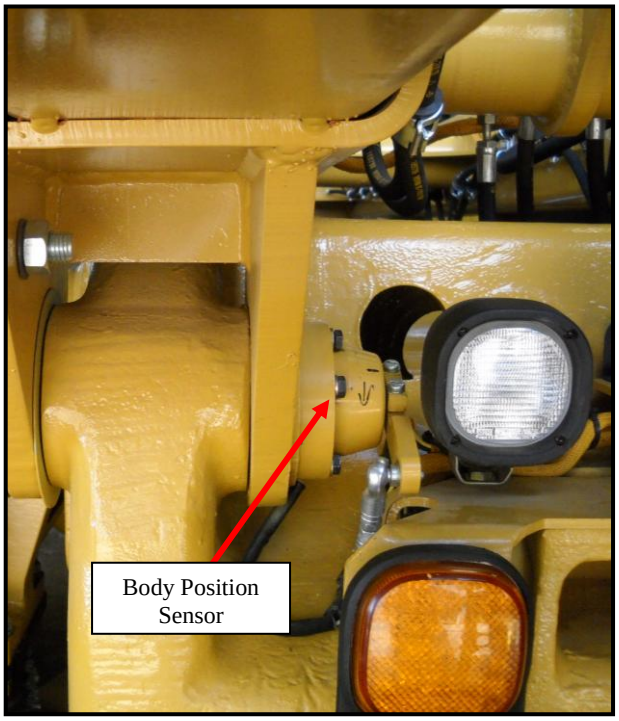
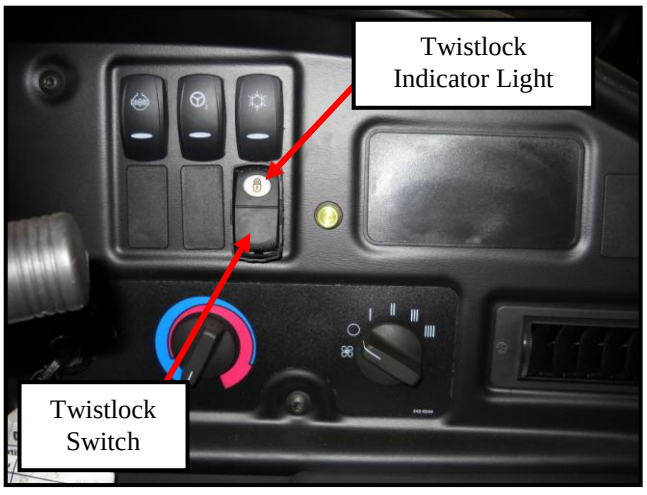
Body Position Sensor



The sensor is mounted to the body assembly left rear pivot mount. The position sensor is connected to the chassis by an adjustable link and provides the ECMs with angular body positioning for automatic body raise stop feature, in-cab body up indicator light and gear limit functions.

In-Cab Twistlock Switch and Indicator Light



The switch and indicator light are mounted in the existing instrument cluster. The switch commands the twistlock solenoid manifold to route pressure to the twistlock cylinders. The indicator light provides the operator with an in-cab status of the twistlocks as follows:

LIGHT	STATUS
OFF	All twistlocks are DISENGAGED
FLASHING	One or several twistlocks are transiting or a fault exists.
ON	All twistlocks are ENGAGED.

In-Cab Stinger Control Fault Light

The light is mounted in the dash just to the right of the twistlock switch. Indicates a fault exists in the tailgate system remote switches or circuitry.

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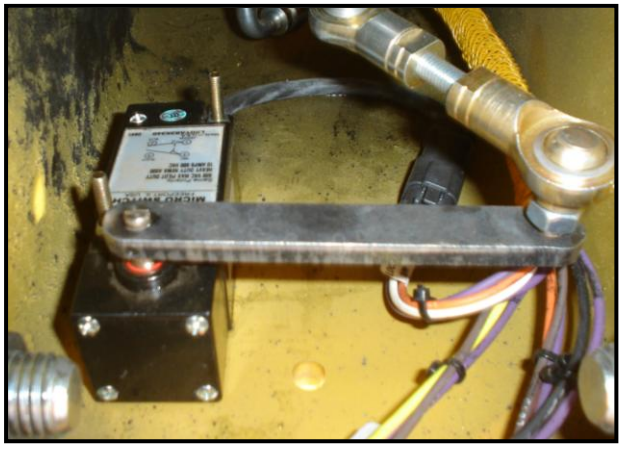
System Description

Twistlock Sensors



Each twistlock sensor is mounted inside the tubular frame and attached to its respective twistlock by a bellcrank and adjustable clevis. The sensor provides individual twistlock position information to the body assembly ECM. It is the body assembly ECM that commands the in-cab twistlock light indications after processing all sensor information.

External Twistlock Status Beacon

The blue twistlock status beacon assembly is mounted to the top of the chassis cab and is controlled by the additional ECM. The blue beacon will only flash when all twistlocks are DISENGAGED, indicating to the crane operator it is safe to remove the container from the bed assembly.

THEORY OF OPERATION

The bed assembly, controls systems, indicators and components operate as follows:

LOCKING THE CONTAINER TO THE BODY ASSEMBLY

Once a container is lowered to the body assembly the container must be secured to the body for transportation and dumping. Initially the external twistlock status beacon is ON and in-cab twistlock status lights are OFF. The operator then activates the in-cab twistlock switch that in turn sends a lock signal to the body assembly ECM. The ECM then commands the twistlock solenoid to provide hydraulic pilot pressure to all twistlock actuators. Hydraulic pressure will begin to rotate all twistlocks and twistlock sensors to a position that will require the ECM to turn OFF the twistlock external status light. Once all twistlocks are in an ENGAGED position, the ECM will illuminate the in-cab twistlock status light. If the twistlock light does not illuminate and a fault exists, the twistlock fault light will illuminate.

RAISING THE BED ASSEMBLY FOR DUMPING

The operator moves the hoist control lever from FLOAT to RAISE. The chassis ECM will command the hoist valve to route pressure to the tailgate operation valve assembly. The solenoid control valve will provide pressure to the tailgate hydraulic cylinder and lower (OPEN) the tailgate to unsecure the container doors. Once the tailgate restraint (stinger) is fully lowered, hydraulic pressure is routed to the lift cylinders and the bed begins to RAISE. The in-cab body position light will illuminate and the chassis is restricted to 1st gear.

When the bed reaches a predetermined dump angle, as sensed by the bed position sensor, the body assembly ECM will command the hoist valve to stop supplying pressure to the lift

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System Description

cylinders and the hoist valve will default to HOLD. The operator will position the hoist lever to HOLD. The midpoint stop value is set prevent the tailgate of the container from contacting the ejected load or the ground. This safety feature will prevent damage to the body assembly and the tailgate.

If the load is not fully ejected from the container the operator may raise the bed further. This is accomplished by positioning the hoist lever to the HOLD position, depress and hold the midpoint override switch and move the hoist lever to the RAISE position then release the override switch. The body will continue to raise to the upper limit angle value as programmed into the ECM software.

NOTE

The midpoint stop and the upper raise limit angles can be programmed as specified by the type of container and the end users requirements.

LOWERING THE BED ASSEMBY

The operator moves the hoist control lever to LOWER position. The chassis ECM commands the hoist valve to provide pressure to the lift cylinders and the bed begins to lower. Once the bed assembly is down operators should position the hoist lever to FLOAT. Once the container doors are closed manually, the operator should depress the stinger CLOSE button from the remote switches to command the stinger to raise and restrain the tailgate. The stinger can also be operated by the hoist control lever when the vehicle is moving forward at 7 mph or greater and the hoist lever is placed in the LOWER position. This action will allow hoist valve LOWER oil pressure through the stinger activation control valve and CLOSE the stinger. When the stinger is in the full CLOSE position the operator can move the hoist lever to the FLOAT position.

RAISING (CLOSING) OR LOWERING (OPENING) THE TAILGATE RESTRAINT WITH THE REMOTE BED OPERATION SWITCHES

The remote switches control the hoist valve control to operate the stinger from the ground at the rear of the machine. The hoist lever must be in the FLOAT position, twistlocks ENGAGED, all fault indicators OFF for this control to operate.

LIGHTS & ACCESSORIES

The MCC35 is equipped with several different lighting systems and accessories. They consist of relocated chassis tail lights and accessories, an amber flashing beacon and body assembly clearance lights.

Tail Light & Accessory Assembly

The tail lights and other accessories are removed from the rear of the chassis and relocated on the MCC35 rear mounting plate. These lights and accessories consist of tail light modules, backup alarm and work/reverse lights. The relocation of all lights and accessories provides and unobstructed view of all light systems with the MCC35 installed and loaded with a container. The light and accessories operate as defined in the CAT 735 Operators Safety and Maintenance Manual.

SECTION 2
System Description

Amber Flashing Beacon

Mounted to the top of the MCC35 cab and is activated when the vehicle key switched power is ON. This beacon serves as an anti-collision device indication the vehicle is under power and in service.

Clearance Lights

An amber colored light mounted on each end of the body assembly tube cap. The lights operate on 24 VDC and are on when the chassis running lights or parking lights are on.

SECTION 3
Normal Operations

Contents

DESCRIPTION

This section provides normal bed operation procedures for the MCC 35 on the CAT 735 LWB chassis only. These procedures are in addition to and do not replace existing CAT 735 requirements. Refer to the CAT 735 Operations and Maintenance manual for other specific CAT 735 operation instructions, warnings and hazards. The MCC35 specific operating procedures are also found in checklist form located in the appendix and designed to be used in the cab.

BEFORE OPERATIONS

These procedures are used to perform a walk-around inspection of the MCC35 system before use or the beginning of a shift. This inspection requirement is in addition to and does not replace the vehicle manufacture's inspections.

⚠ WARNING

Ensure all safety information, warnings and instructions are read and understood before any operation or maintenance procedures are performed. Ensure proper safety procedures are used when operations the MCC35. Failure to use proper safety procedures and equipment may cause serious personnel injury or death.

Power OFF

1. Chocks – Set As Required
2. Vehicle Parking Brake – ON
3. Gear Selector Lever – N (Neutral)
4. In Cab Controls – Set As Required
5. Cab Mounted Indicator Beacons – Security and Damage
6. MCC35 Accumulator – Security Damage and Leaks
7. LT Body Lift Cylinder – Security, Damage, Leaks and Lubrication
8. LT Side Body Assembly, Centering Guides, Twistlocks, Lights, Fender and Mud Flap – Security, Damage and Lubrication.
9. LT Pivot Pin – Security, Damage and Lubrication
10. Body Position Sensor – Security and Damage
11. Remote Bed Operation Switches – Condition, Security and Damage.
12. Tailgate Assembly – Security, Damage, Leaks and Lubrication.
13. Twistlock Mechanisms – Security, Damage, Operation and Lubrication.
14. Tail Light and Accessories – Security and Damage
15. Hydraulic Sequencing and Twistlock Manifolds – Security, Damage and Leaks.
16. RT Pivot Pins – Security, Damage and Lubrication
17. RT Side Body Assembly, Centering Guides, Twistlocks, Lights, Fender and Mud Flap – Security, Damage and Lubrication.

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18. RT Pivot Pin – Security, Damage and Lubrication.

19. RT Body Lift Cylinder – Security, Damage and Leaks

20. Hydraulic Tank – Serviced as Required

Power ON Engine ON

1. Vehicle – Start

2. Twistlock Switch – DISENGAGE

3. Twistlock In-Cab Light – OFF

4. Twistlock External Beacon – ON

5. Amber Beacon – ON

6. Twistlock Switch – ENGAGE

7. Twistlock In-Cab Light – ON

8. Twistlock External Beacon - OFF

9. MCC35 Bed Raise/Lower Operations – CHECKED FOR PROPER OPERATION. Ensure all bed and tailgate functions operate properly using the hoist lever. Check bed-up position light, raise auto stop and raise override function properly.

10. Remote Bed Operation Switches – CHECKED FOR PROPER OPERATION. Ensure both remote switches and tailgate function properly.

OPERATIONS

The procedures to follow are used to safely operate the body system for container loading, dumping, and container unloading.

CAUTION

Under certain operating conditions, the combination of hydraulic oil for the brake system in conjunction with the hoist system may create a slight pressure differential across the piston heads in the hoist cylinders. If the hoist lever is left in the **FLOAT** position with this pressure differential present, the bed will gradually return the body over the center of balance of the pivots and the body will lower onto the chassis. Proper use of the **RAISE, HOLD**, **LOWER** and **FLOAT** positions of the hoist control is important for the correct operation of the machine or damage to the machine may result.

CONTAINER LOADING

1. Body Assembly – DOWN. Ensure bed position light is OFF.

2. Tailgate – DOWN. Use hoist lever or remote switches to position the tailgate.

3. Hoist Lever – FLOAT

4. Twistlock Switch – DISENGAGE

5. Twistlock In-Cab Light – OFF

6. Twistlock External Beacon - ON

7. Position Vehicle – As Required for Loading

8. Gear Selector Lever – N (Neutral)

9. Parking Brake - As Required

SECTION 3
Normal Operations

10. Container - LOADED

11. Hoist Lever – FLOAT

NOTE

The body must be in the **FLOAT** position when driving the machine. If the hoist control lever is in any position except **FLOAT**, the transmission will remain in **FIRST** gear. Normal gear shifting will not take place until the hoist control lever is moved to the **FLOAT** position.

12. Twistlock Switch – ENGAGE

13. Twistlock In-Cab Light – ON

NOTE

If the twistlock indicator lamp is flashing, move the twistlock activation switch to the **DISENGAGE** position and wait for the indicator lamp to remain OFF. Then move the switch to the **ENGAGE** position and wait for the lamp to be illuminated. If after cycling the activation switch does not illuminate the light discontinue use of the MCC35.

14. Twistlock External Beacon – OFF

15. Tailgate – CLOSE. Use remote switches to position the tailgate.

NOTE

Any restraining devices (e.g. chains, straps) used on container doors for transport must be removed after tailgate is positioned against container door prior to dumping operations.

16. Parking Brake – OFF

17. Gear Selector Lever – As Required

18. Move away from loading area.

CONTAINER DUMPING

1. Vehicle - Position for container dumping.

2. Gear Selector Lever – As Required

3. Parking Brake – As Required

4. Tailgate – DOWN. Use hoist lever or remote switches to position the tailgate.

NOTE

Any restraining devices (e.g. chains, straps) used on container doors for transport must be removed after tailgate is positioned against container door prior to dumping operations.

5. Hoist Lever – RAISE. Hold in the raise position until the bed stops automatically.

6. Hoist Lever & Override Switch – As Required. Use the override system as required to dump the entire load.

7. Hoist Lever – LOWER. Ensure the bed assembly is fully lowered and the bed position light extinguishes.

NOTE

If required, install restraining devices (e.g. chains, straps) to keep container doors closed for transport before the tailgate is raised.

8. Tailgate – UP. Use remote switches to position the tailgate.

SECTION 3
Normal Operations

9. Hoist Lever – FLOAT

NOTE

The body must be in the **FLOAT** position when driving the machine. If the hoist control lever is in any position except **FLOAT**, the transmission will remain in **FIRST** gear. Normal gear shifting will not take place until the hoist control lever is moved to the **FLOAT** position.

10. Parking Brake – As Required

11. Gear Selector Lever – As Required

12. Vehicle – Exit dumping area

CONTAINER UNLOADING

1. Body Assembly – DOWN. Ensure bed position light is off.

2. Tailgate – DOWN. Use hoist lever or remote switches to position the tailgate.

3. Hoist Lever – FLOAT

4. Position Vehicle – As Required for Unloading

5. Gear Selector Lever – N (Neutral)

6. Parking Brake - As Required

7. Twistlock Switch – DISENGAGE

8. Twistlock In-Cab Light – OFF

9. Twistlock external status beacon (Blue) - ON

10. Container - UNLOAD

11. Twistlock Switch – As Required

12. Depart unloading area.

AFTER OPERTIONS

Perform this inspection at the end of the day or end of a shift.

1. Paring Brake – ON

2. Gear Selector Lever – As Required

3. Vehicle – Shutdown

4. Hoist Lever As Required

5. Twistlock Switch – As Required

6. LT Side Bed Assembly and Components – Security, Damage and Leaks

7. Rear Bed Assembly and Accessories – Security, Damage and Leaks

8. RT Side Bed Assembly and Components – Security, Damage and Leaks

9. Hydraulic Tank - Serviced

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MCC35 OPERATORS CHECKLIST

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BEFORE OPERATIONS

These procedures are used to perform a walk-around inspection of the MCC35 system before use or the beginning of a shift. This inspection requirement is in addition to and does not replace the vehicle manufacture's inspections.

⚠ WARNING

Ensure all safety information, warnings and instructions are read and understood before any operation or maintenance procedures are performed. Ensure proper safety procedures are used when operations the MCC35. Failure to use proper safety procedures and equipment may cause serious personnel injury or death.

Power OFF

1. Chocks – Set As Required
2. Vehicle Parking Brake – ON
3. Gear Selector Lever – N (Neutral)
4. In Cab Controls – Set As Required

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5. Cab Mounted Indicator Beacons –Security and Damage

6. MCC35 Accumulator – Security Damage and Leaks

7. LT Body Lift Cylinder – Security, Damage, Leaks and Lubrication

8. LT Side Body Assembly, Centering Guides, Twistlocks, Lights, Fender and Mud Flap – Security, Damage and Lubrication.

9. LT Pivot Pin – Security, Damage and Lubrication

10. Body Position Sensor – Security and Damage

11. Remote Bed Operation Switches – Condition, Security and Damage.

12. Tailgate Assembly – Security, Damage, Leaks and Lubrication

13. Twistlock Mechanisms – Security, Damage, Function and Lubrication

14. Tail Light and Accessories – Security and Damage

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15. Hydraulic Sequencing and Twistlock Manifolds – Security, Damage and Leaks.

16. RT Pivot Pins – Security, Damage and Lubrication

17. RT Side Body Assembly, Centering Guides, Twistlocks, Lights, Fender and Mud Flap – Security, Damage and Lubrication.

18. RT Pivot Pin – Security, Damage and Lubrication.

19. RT Body Lift Cylinder – Security, Damage and Leaks

20. Hydraulic Tank – Serviced as Required

Power ON Engine ON

1. Vehicle – Start

2. Twistlock Switch – DISENGAGE

3. Twistlock In-Cab Light – OFF

4. Twistlock External Status Beacon – ON

5. Amber Beacon – ON

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6. Twistlock Switch – ENGAGE

7. Twistlock In-Cab Light – ON

8. Twistlock External Status Beacon - OFF

9. MCC35 Bed Raise/Lower Operations – CHECKED FOR PROPER OPERATION. Ensure all bed and tailgate functions operate properly using the hoist lever. Check bed-up position light, raise auto stop and raise override function properly.

10. Remote Bed Operation Switches – CHECKED FOR PROPER OPERATION. Ensure both remote switches and tailgate function properly.

OPERATIONS

The procedures to follow are used to safely operate the body system for container loading, dumping, and container unloading.

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CAUTION

Under certain operating conditions, the combination of hydraulic oil for the brake system in conjunction with the hoist system may create a slight pressure differential across the piston heads in the hoist cylinders. If the hoist lever is left in the **FLOAT** position with this pressure differential present, the bed will gradually return the body over the center of balance of the pivots and the body will lower onto the chassis. Proper use of the **RAISE, HOLD**, **LOWER** and **FLOAT** positions of the hoist control is important for the correct operation of the machine or damage to the machine may result.

CONTAINER LOADING

1. Body Assembly – DOWN. Ensure bed position light is OFF.
2. Tailgate – DOWN. Use hoist lever or remote switches to position the tailgate.
3. Hoist Lever – FLOAT
4. Twistlock Switch – DISENGAGE

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5. Twistlock In-Cab Light – OFF

6. Twistlock External Status Beacon - ON

7. Position Vehicle – As Required for Loading

8. Gear Selector Lever – N (Neutral)

9. Parking Brake - As Required

10. Container - LOADED

11. Twistlock Switch – ENGAGE

12. Twistlock In-Cab Light – ON

13. Twistlock External Status Beacon - OFF

NOTE

If the twistlock indicator lamp remains illuminated or is flashing, move the twistlock activation switch to the **DISENGAGE** position and wait for the indicator lamp to remain constant. Then move the switch to the **ENGAGE** position and wait for the lamp to be extinguished. If after cycling the activation switch does not extinguish the light discontinue use of the MCC35.

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14. Tailgate – UP. Use hoist lever or remote switches to position the tailgate.

NOTE

Any restraining devices (e.g. chains, straps) used on container doors for transport must be removed after tailgate is positioned against container door prior to dumping operations.

15. Hoist Lever – FLOAT

NOTE

The body must be in the **FLOAT** position when driving the machine. If the hoist control lever is in any position except **FLOAT**, the transmission will remain in **FIRST** gear. Normal gear shifting will not take place until the hoist control lever is moved to the **FLOAT** position.

16. Parking Brake – OFF

17. Gear Selector Lever – As Required

18. Move away from loading area.

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CONTAINER DUMPING

1. Vehicle - Position for container dumping.

2. Gear Selector Lever – As Required

3. Parking Brake – As Required

4. Tailgate – DOWN. Use hoist lever or remote switches to position the tailgate.

NOTE

Any restraining devices (e.g. chains, straps) used on container doors for transport must be removed after tailgate is positioned against container door prior to dumping operations.

5. Hoist Lever – RAISE. Hold in the raise position until the bed stops automatically.

6. Hoist Lever & Override Switch – As Required. Use the override system as required to dump the entire load.

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7. Hoist Lever – LOWER. Ensure the bed assembly is fully lowered and the bed position light extinguishes.

NOTE

If required, install restraining devices (e.g. chains, straps) to keep container doors closed for transport before the tailgate is raised.

8. Tailgate – UP. Use hoist lever or remote switches to position the tailgate.

9. Hoist Lever – FLOAT

NOTE

The body must be in the **FLOAT** position when driving the machine. If the hoist control lever is in any position except **FLOAT**, the transmission will remain in **FIRST** gear. Normal gear shifting will not take place until the hoist control lever is moved to the **FLOAT** position.

10. Parking Brake – As Required

11. Gear Selector Lever – As Required

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12. Vehicle – Exit dumping area

CONTAINER UNLOADING

1. Body Assembly – DOWN. Ensure bed position light is off.
2. Tailgate – DOWN. Use hoist lever or remote switches to position the tailgate.
3. Hoist Lever – FLOAT
4. Position Vehicle – As Required for Unloading
5. Gear Selector Lever – N (Neutral)
6. Parking Brake - As Required
7. Twistlock Switch – DISENGAGE
8. Twistlock In-Cab Light – OFF
9. Twistlock Status Beacon - ON
10. Container - UNLOAD
11. Twistlock Switch – As Required
12. Twistlock In-Cab Light – As Required

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13. Depart unloading area.

AFTER OPERTIONS

Perform this inspection at the end of the day or end of a shift.

1. Paring Brake – ON
2. Gear Selector Lever – As Required
3. Vehicle – Shutdown
4. Hoist Lever As Required
5. Twistlock Switch – As Required
6. LT Side Bed Assembly and Components – Security, Damage and Leaks
7. Rear Bed Assembly and Accessories – Security, Damage and Leaks
8. RT Side Bed Assembly and Components – Security, Damage and Leaks
9. Hydraulic Tank - Serviced

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