

MET(DG)-CAT785(D)-INSP-RSP-5



GENUINE MEGA

SCHEDULED/SPECIAL INSPECTIONS & RECOMMENDED SUPPORT PARTS



MEGA WORLDWIDE
1-800-345-8889 • 505-345-2661 • www.megacorpinc.com
© MEGA Corp., Inc. All Rights Reserved

TABLE OF CONTENTS

| | | |
|-----------|---|-----|
| Section 1 | Definitions and Abbreviations | 1-1 |
| Section 2 | Scheduled Maintenance Inspections | 2-1 |
| Section 3 | Special Inspections | 3-1 |
| Section 4 | Recommended Support Parts | 4-1 |

TABLE OF CONTENTS

SECTION 1

Definitions and Abbreviations

Contents

| | |
|---|------------------------------------|
| Manual Usage1-1 | Safety Messages1-2 |
| Warning, Caution And Notes1-1 | Abbreviations1-3 |
| Use Of Shall, Will, Should And May1-1 | MET DG Overview (Typical)1-4 |

MANUAL USAGE

This technical manual contains information required to safely maintain a MET CAT785(D). If your system is not covered in this manual please contact MEGA Corp. Product Support Group at:

US toll free: 1-800-345-8889

Direct: 1-505-345-2661 or visit our website at www.megacorpinc.com for more detailed contact information.

See the CAT 785(D) Operators and Maintenance Safety Manuals for specific vehicle system information and operating procedures. The exact location of the hazards and description of the hazards are reviewed in this section. All personnel working on or operating the MET must become familiarized with all of the safety messages.

WARNING

Due to the nature of these processes, ensure that all safety information, warnings and instructions are read and understood before any operation or any maintenance procedures are performed. Some procedures take place at moderate heights, ensure proper safety procedures are maintained when performing these actions. Failure to use and maintain proper safety equipment and procedures will cause injury, death or damage to equipment.

WARNING, CAUTION 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 emphasize.

USE OF SHALL, WILL, SHOULD 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

SAFETY MESSAGES

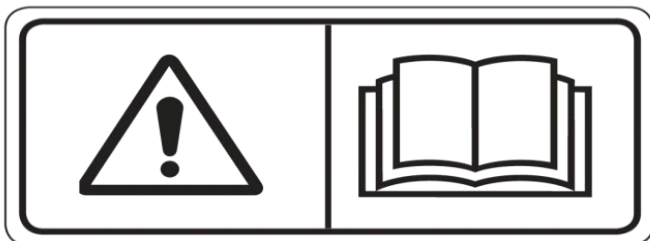
There are several specific safety messages on this machine. The exact location of the hazards and description of the hazards are reviewed in this section. All personnel working on or operating the machine must become familiarized with all the safety messages.

Make sure that all of the safety messages are legible. Clean the safety messages or replace the safety messages if you cannot read the words. Replace the illustrations if the illustrations are not legible. When you clean the safety messages, use a cloth, water and soap. Do not use solvent, gasoline or other harsh chemicals to clean the safety messages. Solvents, gasoline or harsh chemicals could loosen the adhesive that secures the safety messages. Loose adhesive will allow the safety messages to detach.

Replace any safety message that is damaged or missing. If a safety message is attached to a part that is replaced, install a new safety message on the replacement part.

DO NOT OPERATE

This safety label is located on control & junction boxes..

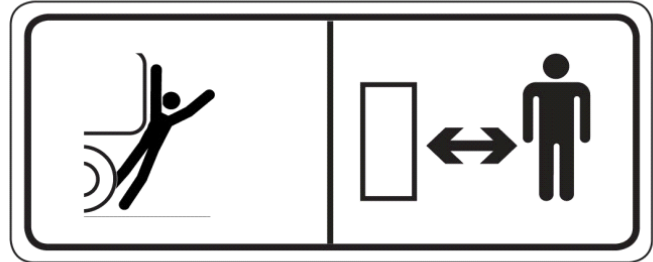


WARNING

Do not open this junction box unless you read and understand the instructions and warnings in the Operator and Maintenance Manual. Failure to follow instructions or heed the warnings could result in serious injury or death.

BACKING RUNOVER HAZARD

This safety label is located on the rear of the trailer.

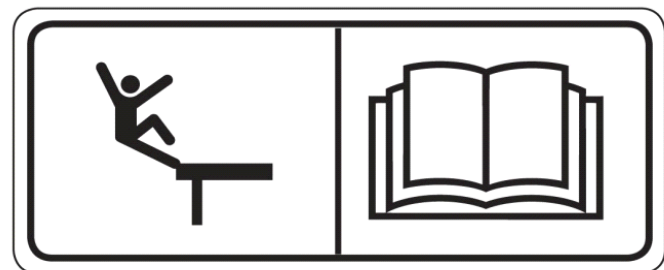


WARNING

The vehicle is equipped with a back-up alarm. Alarm must sound when operating this vehicle in reverse. Failure to maintain a clear view in the direction of travel could result in serious injury or death.

FALL HAZARD

This safety label is located on either side of the gooseneck.



WARNING

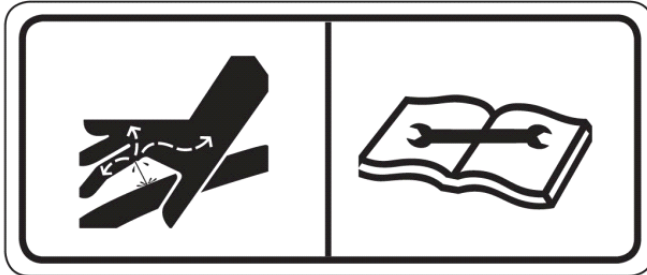
Do not walk on the top of decks without fall arrest PPE. Serious injury or death could occur from a fall.

SECTION 1

Definitions and Abbreviations

HIGH PRESSURE MOTOR (4)

This safety label is located in the brake system compartment



ABBREVIATIONS

CW - clockwise

DG- Drop Gooseneck

e.g. - example given

ft - feet

i.e. - included example

LT - Left (as viewed from the rear of the unit looking forward)

MET - MEGA Equipment Trailer

psi - pounds square inch

RT - Right (as viewed from the rear of the unit looking forward)

ROPS - Rollover Protection System

rpm - revolutions per minute

HPU- Hydraulic Power Unit

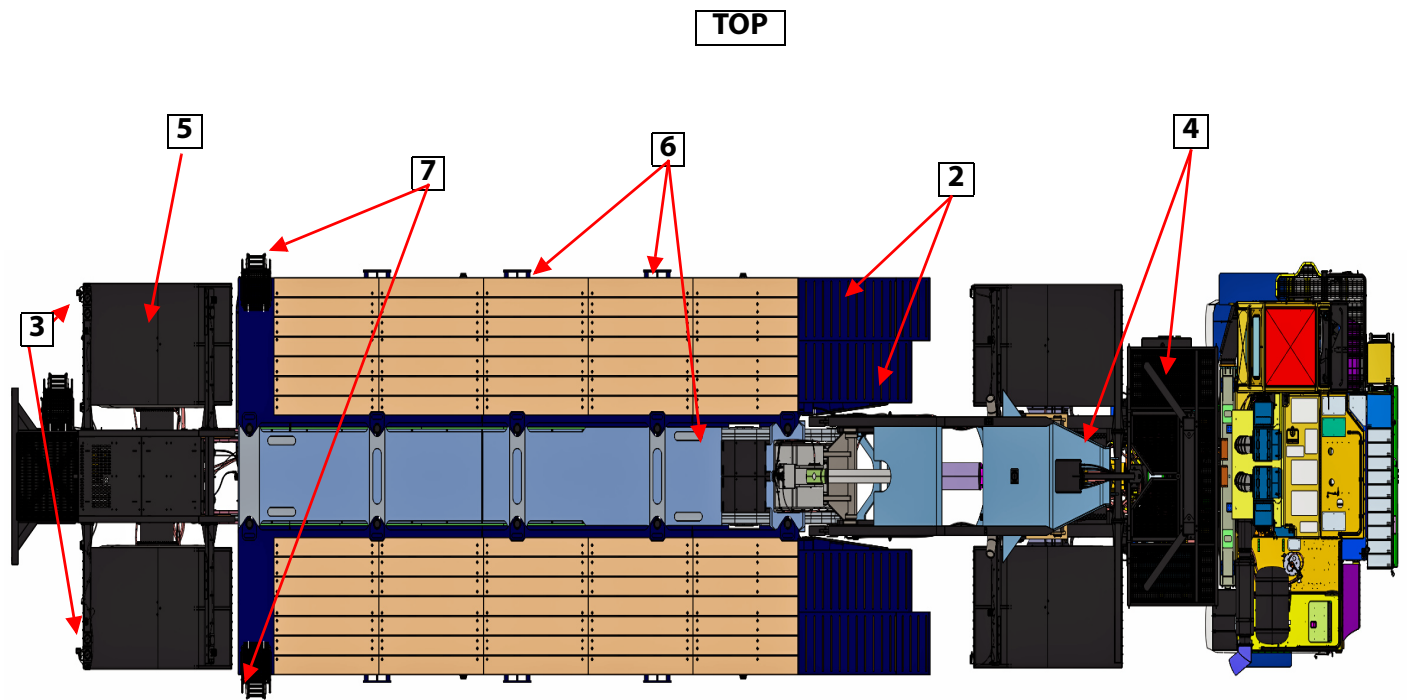
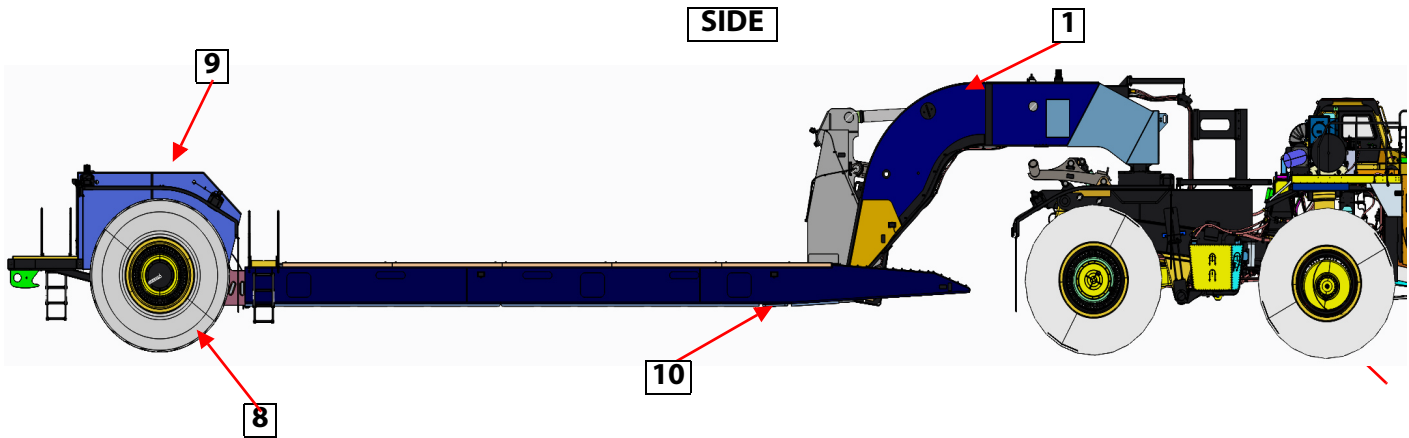
WARNING

Hydraulic motor and supply lines contain oil under high pressure. Improper removal and repair procedures could cause severe injury. To remove or repair, instructions in the Maintenance Manual must be followed.

SECTION 1

Definitions and Abbreviations

MET(DG) 180 OVERVIEW (TYPICAL)

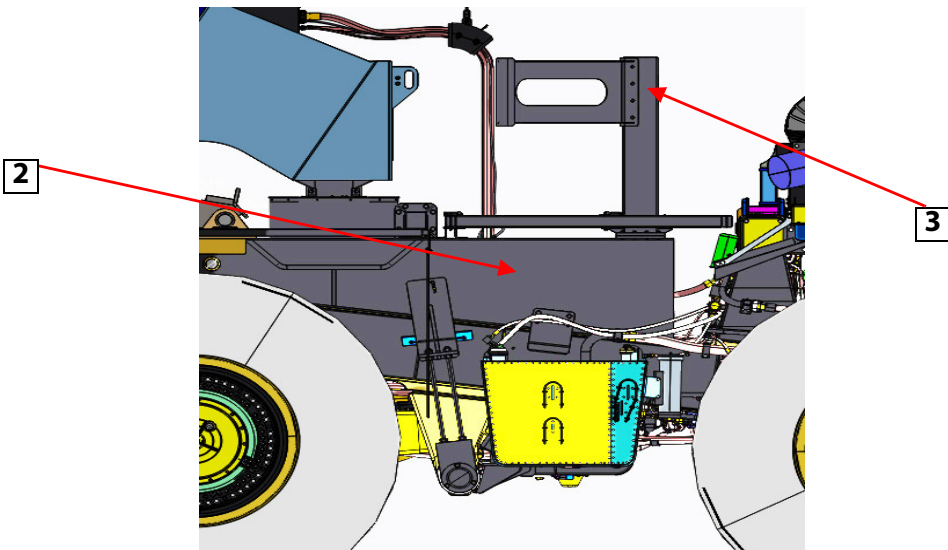
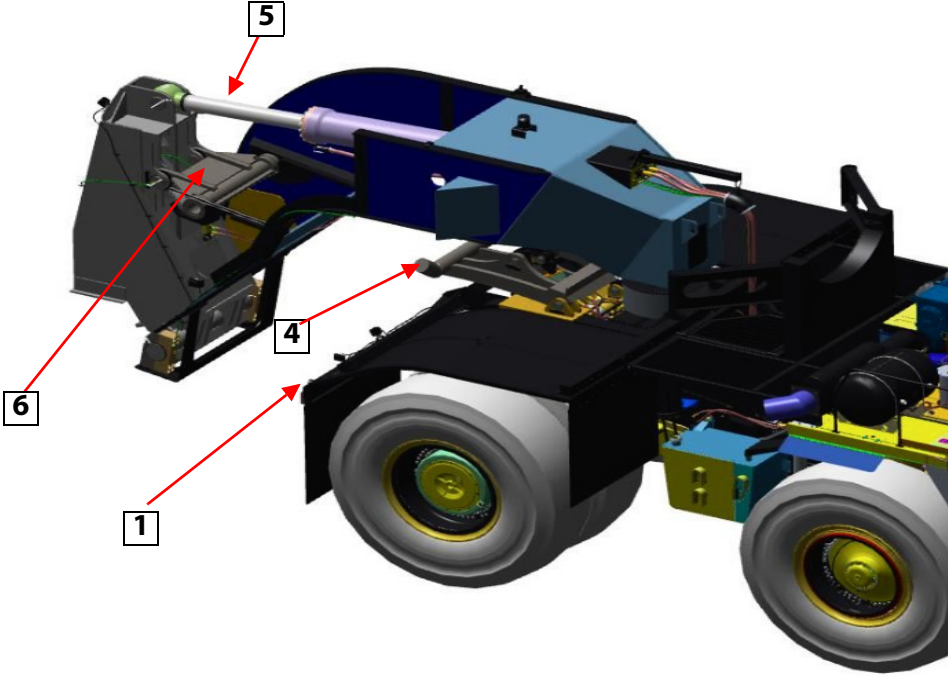


- 1** GOOSENECK
- 2** RAMPS
- 3** BRAKE & TURN LIGHTS
- 4** HITCH, SADDLE, & DECK
- 5** FENDERS (IF EQUIPPED)

- 6** TIE DOWN CLEETS
- 7** LADDERS
- 8** WHEEL GROUP
- 9** TRAILING AXLE ASSEMBLY
- 10** DECK RAISE FOOT

SECTION 1

Definitions and Abbreviations



- | | | | |
|----------|---------------------------------|----------|---------------------|
| 1 | HITCH FENDERS | 4 | KICKSTAND |
| 2 | HITCH SADDLE | 5 | DECK LIFT CYLINDERS |
| 3 | MECHANICAL TURN LIMIT INDICATOR | 6 | DECK LOCK |

SECTION 1
Definitions and Abbreviations

SECTION 2

Scheduled Maintenance Inspections

Contents

| | |
|-------------------------------|------------------------|
| Chassis Tow Systems.....2-1 | Gooseneck.....2-2 |
| Cab Controls & Remote.....2-1 | MET Structures.....2-3 |
| Hitch, Deck, & Fender.....2-2 | Trailing Axle.....2-3 |

DESCRIPTION

This section establishes scheduled maintenance inspections of the MET and associated systems at the designated frequencies. Performing these inspections will identify potential system discrepancies and allow preventative maintenance to be performed before a component or system is rendered totally inoperative. Once again, these inspections are in addition to and do not replace existing CAT scheduled inspection requirements.

| | | FREQUENCY | | | | |
|------|---|------------------------|----------------------|-------------------------|---------------------------|------------------------|
| | | BI-WEEKLY (250 HRS) | MONTHLY (500 HRS) | QUARTERLY (1000 HRS) | SEMI-ANNUAL (2500 HRS) | ANNUALLY (5000 HRS) |
| STEP | CHASSIS TOW SYSTEMS | | | | | |
| 1 | After initial installation or system component replacement, follow chassis required initial maintenance schedule for that component or system. Service as required. | | | | | |
| 2 | Hoist pump hydraulic supply connections for gooseneck, security leaks and damage. | X | | | | |
| 3 | Trailer electrical harness for damage and security | X | | | | |
| 4 | Inspect trailer lubrication supply lines for damage, security, and leaks. | | X | | | |
| STEP | CAB CONTROLS & REMOTE | BI-WEEKLY (250 HRS) | MONTHLY (500 HRS) | QUARTERLY (1000 HRS) | SEMI-ANNUAL (2500 HRS) | ANNUALLY (5000 HRS) |
| 1 | Trailer brake lever, valve and hoses for security and damage | | X | | | |
| 2 | Trailer control display and cabling for mounting, security and damage. | | X | | | |
| 3 | Trailer camera display and cabling for mounting security and damage. | | X | | | |
| 4 | Trailer remote control, cradle and cabling for security and damage. | | X | | | |

SECTION 2

Scheduled Maintenance Inspections

| | | FREQUENCY | | | | |
|------|---|------------------------|----------------------|-------------------------|---------------------------|------------------------|
| STEP | HITCH, DECK, & FENDER | BI-WEEKLY (250 HRS) | MONTHLY (500 HRS) | QUARTERLY (1000 HRS) | SEMI-ANNUAL (2500 HRS) | ANNUALLY (5000 HRS) |
| 1 | Check body position switch and cabling for damage and security | | | | X | |
| 2 | Check lights, backup alarms, alarm assembly, and beacon for damage, security and proper operation. | X | | | | |
| 3 | Check hitch receiver and saddle assembly mounts for damage and security. Inspect pivot pins and hitch clamp assemblies for security. | | | X | | |
| 4 | Check ball hitch skirt assembly for damage, security, cracks. | | | X | | |
| 5 | Check turn limit indicator for damage, security and cracks. Inspect chassis rail mount plates for cracks and all mounting hardware for security. | | | | X | |
| 6 | Remove ball skirt and inspect upper retention plate for broken bolts and evidence of spherical ball contact with the upper retention plate. Ensure upper spherical ball shows evidence of lubrication. Damage & security to electrical turn limit switch & cabling. | | | | X | |
| 7 | Check clearance between hitch spherical ball and upper brass bushing. If gap is more than 0.010" shim upper brass bushing as described in the MET180-CAT 785(D) Field Installation Manual. | | | | X | |
| 8 | Check tractor fender assemblies for damage, cracks and security. | | | | X | |
| STEP | GOOSENECK | BI-WEEKLY (250 HRS) | MONTHLY (500 HRS) | QUARTERLY (1000 HRS) | SEMI-ANNUAL (2500 HRS) | ANNUALLY (5000 HRS) |
| 1 | Check gooseneck electrical cabling for damage and security from gooseneck to the tractor integration point. | | X | | | |
| 2 | Check gooseneck assembly for damage and cracks. Inspect gooseneck turn limit cheeks for evidence of turn limit indicator contact. Repair as required. | | | | X | |
| 3 | Inspect lock & lift cylinder for leaks. Ensure grease is present at lock & lowerpin assemblies | | X | | | |
| 4 | Check transmitter, receiver, and antennas for damage and security | | | X | | |
| STEP | MET STRUCTURE | BI-WEEKLY (250 HRS) | MONTHLY (500 HRS) | QUARTERLY (1000 HRS) | SEMI-ANNUAL (2500 HRS) | ANNUALLY (5000 HRS) |
| 1 | Check deck for security, damage and cracks. All housing & wiring for damage & security. | | | X | | |
| 2 | Check deck raise cylinders & limit switch for security, damage, & leaks. | | | X | | |
| 3 | Check lights & ladders for damage, security and cracks. | | | X | | |
| 4 | Check all MET tail and clearance lights for damage, security, and proper operation | | X | | | |

SECTION 2

Scheduled Maintenance Inspections

| STEP | TRAILING AXLE ASSEMBLYS | FREQUENCY | | | | |
|------|---|------------------------|----------------------|-------------------------|---------------------------|------------------------|
| | | BI-WEEKLY (250 HRS) | MONTHLY (500 HRS) | QUARTERLY (1000 HRS) | SEMI-ANNUAL (2500 HRS) | ANNUALLY (5000 HRS) |
| 1 | Check wheel group components as defined in CAT 785D SIS. Service individual components as required. | | | | | |
| 2 | Inspect wheel group sump breathers for evidence of oil leakage. | | X | | | |
| 3 | Inspect wheel groups for proper fluid levels. If more than 3 Quarts (2.84 liters) are added at any inspection, See CAT SIS for troubleshooting. | | X | | | |
| 4 | Inspect brake cooling components and manifolds for leaks, damage, security and leaks. | | X | | | |
| 5 | Inspect rear brake accumulators, brake valves, and slack adjusters for damage, security, and leaks. | | X | | | |
| 6 | All brake system cooling and activation hoses for damage, security and leaks. | | X | | | |
| 7 | Check MET wheel groups and upper rear deck for damage and cracks. | | X | | | |
| 8 | HYDRAULIC POWER UNIT (HPU) | BI-WEEKLY (250 HRS) | MONTHLY (500 HRS) | QUARTERLY (1000 HRS) | SEMI-ANNUAL (2500 HRS) | ANNUALLY (5000 HRS) |
| | a. Engine Air Cleaner Element (Dual Element)-Clean/Replace | | X | | | |
| | b. Engine Oil and Filter-Change | | X | | | |
| | c. Alternator and Fan Belts- Replace | | | X | | |
| | d. Engine Crankcase Breather-Replace | | | | X | |
| | e. Cooling System Water Temperature Regulator-Replace | | | | X | |
| | f. Check fuel tank & hoses for leaks. | | X | | | |
| | g. HPU control display & cabling for security & damage. | | X | | | |
| | h. Hydraulic tank & housing for security damage & leaks. | | X | | | |
| | i. Hydraulic filters for bypass, damage & leaks | | X | | | |
| | j. Hydraulic valves. pumps & housing for security, damage, & leaks. | | X | | | |
| | k. Cooling fan for security, damage, & cleanliness. | | X | | | |

SECTION 3

Special Inspections

Contents

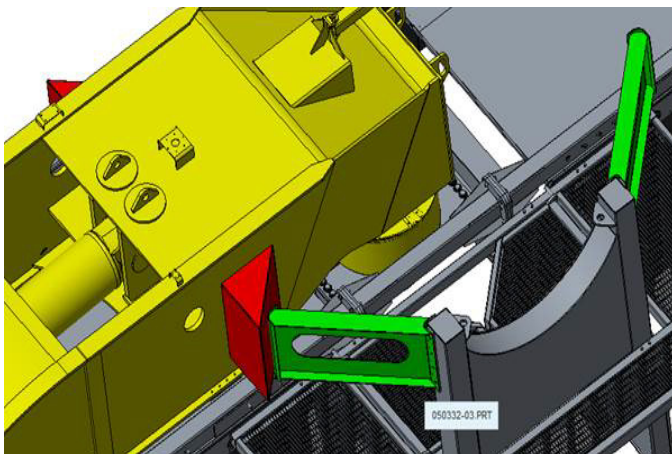
| | |
|------------------------------|-----|
| Description | 3-1 |
| Turn Limit Hard Contact..... | 3-1 |

DESCRIPTION

This section contains special inspection requirements for exceeding an establish system limit. The established inspections are designed to reveal any damage sustained and determine serviceability of the MET system.

TURN LIMIT INDICATOR HARD CONTACT

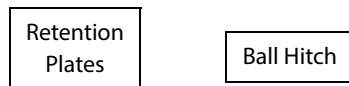
The metal turn limit indicator is designed to provide a visual indication to the operator they have reached the maximum rotation of the MET. This is noted by the gooseneck cheek contacting the turn limit indicator as shown below.



When the system experiences high impact loads damage may occur to both the gooseneck cheek plates and the turn limit indicator. The gooseneck cheek plates may buckle or begin to weaken and eventually cause further damage to adjoining gooseneck plate structure. The turn limit indicator may experience excessive bending moments and begin to tear or weaken lower mount plate and saddle welds.

INSPECTION

1. Check gooseneck cheek structure for damage. Inspect welds for evidence of cracking and metal plates for signs of buckling.
2. Check adjoining gooseneck interior and exterior structure for damage. Inspect gooseneck



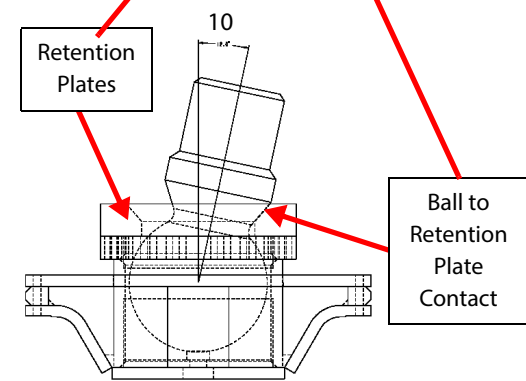
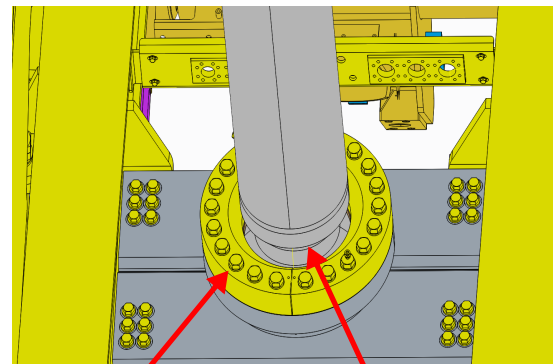
structure and plating for weld cracking and evidence of steel plate buckling.

3. Check turn limit indicator for damage. Inspect plates and welds for cracks and deformities.
4. Check turn limit indicator deck and saddle mounts for damage. Inspect rail mounting plates and angle brackets for cracks and loose hardware.

Contact MEGA Product Support at: 1-800- 345-8889 for any major structural repair issues.

HITCH BALL OVER OSCILLATION

The hitch ball assembly is designed to oscillate 10 degrees within the lower socket assembly as shown below. This allows the MET a large range of motion when operating in the pit, on haul road, on coal piles and when unloading the MET.



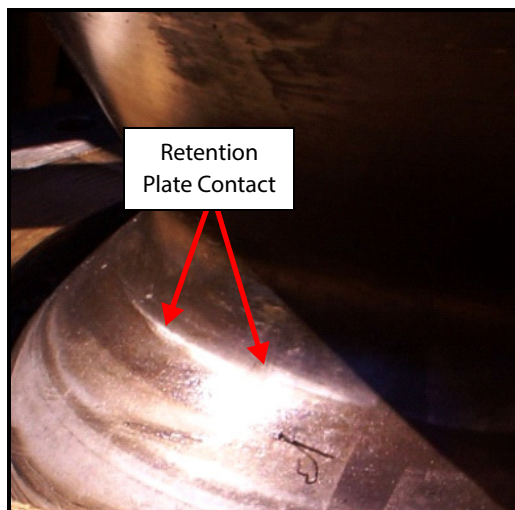
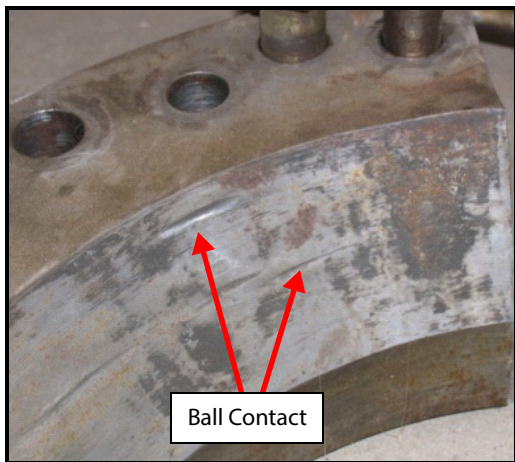
SECTION 3

Special Inspections

When operating the MET beyond the allowable 10 degree limit, the ball will contact the upper retention plate and potentially damage several components of the system. Repeated and hard contacts will damage upper retaining plates, upper brass bushings, mount bolts and in severe cases cause structural damage to the gooseneck, ball hitch tube, and hitch receiver upper mount plate.

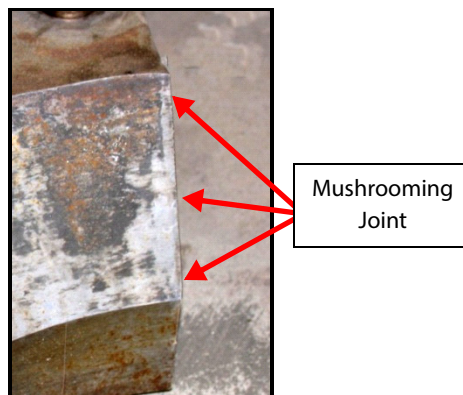
INSPECTION

1. Remove hitch ball skirt assembly.
2. Check for broken bolts on the upper retaining plate. If mount bolts are missing, have been sheared off or laying on the lower receiver, severe contact has occurred.
3. Check upper retaining plates and hitch ball for damage. Inspect retaining plates and hitch ball for evidence of hard contacts as shown below.

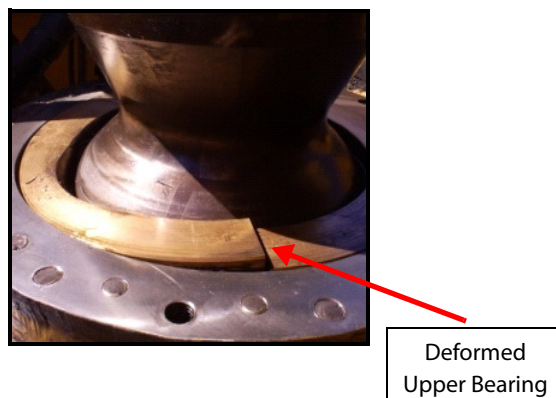


4. If hard contact is confirmed, remove upper retention plates and inspect the upper retention plates, brass bushings and lower receiver as follows:

- a. Inspect upper retention plates for mushrooming of flat mating ends. Lay the retention plate on a flat surface and check for warpage. If retention plate is mushroomed or warped the retention plate set must be replaced.



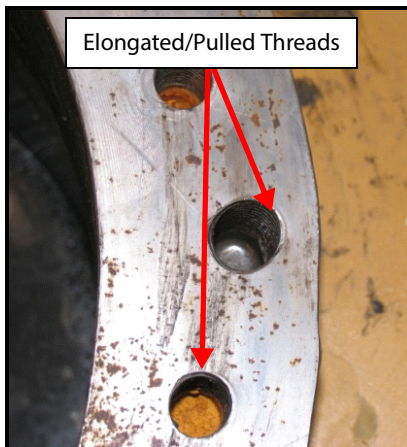
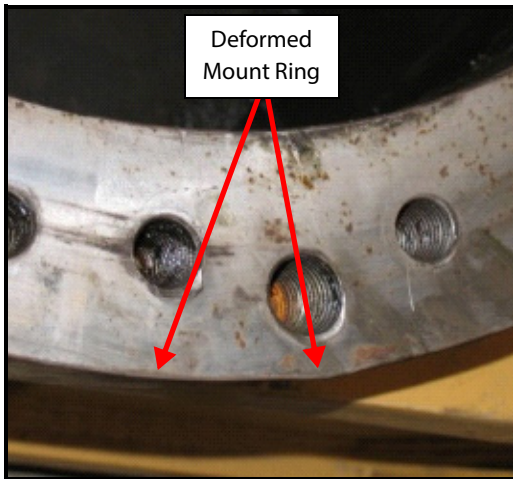
- b. Check upper brass bushings for over oscillation ball contact as shown below. If contacted and deformed replace upper bushing set.



SECTION 3

Special Inspections

- c. Inspect lower receiver assembly for elongated/pulled upper retention plate bolt holes and deformation of the lower receiver mount ring as shown below. If either condition is noted, contact Mega Product Support to determine if the receiver can be refurbished or if a replacement is required.



5. Check interior and exterior gooseneck structure and plating for damage. Inspect gooseneck structure and plating for weld cracking and evidence of steel plate buckling. If either condition is noted contact MEGA Product Support at: 1-800-345-8889.

SECTION 3
Special Inspections

SECTION 4

Recommended Support Parts

Contents

| | | | |
|--------------------------------|-----|---|-----|
| Description | 4-1 | Deck..... | 4-1 |
| HPU Parts Group | 4-1 | Hitch & Kickstand Assembly Parts Group..... | 4-1 |
| Miscellaneous Parts Group..... | 4-1 | Gooseneck Assembly..... | 4-2 |

DESCRIPTION

This section contains a listing of recommended support parts that should be available in the supply warehouse. The tables are categorized by specific sub system of the MET. **DO NOT FORGET** that METs are not all configured the same and there are several variations of hydraulic systems, gooseneck configurations and turn limit indicators. Ensure MET serial numbers and actual component part numbers are checked before ordering any parts. Once parts are issued from warehouse stock ensure depleted quantities are replenished to keep the recommended support parts package at 100%.

Hydraulic Power Unit (HPU)

| PART DESCRIPTION | PART NO. | QTY |
|--|----------|-----|
| 1. Air Filter (PERKINS 135326206) | 308084 | 2 |
| 2. Engine Oil Filter Kit (CAT 220-1523) | 308085 | 1 |
| 3. Engine Fuel Filter Kit (CAT 067-6987) | 308086 | 1 |
| 4. Crankcase Breather (CAT 153-5939) | 308087 | 2 |
| 5. Fan Belt (CAT 211-5172) | 308088 | 1 |
| 6. Engine Thermostat (CAT 249-5541) | 308089 | 1 |
| 7. Thermostat Gasket (CAT 439-0945) | 308090 | 1 |

Miscellaneous Part Group

| PART DESCRIPTION | PART NO. | QTY |
|------------------------------|----------|-----|
| 1. Light LED clearance Red | 355374 | 2 |
| 2. Light LED Clearance Amber | 355375 | 2 |
| 3. Beacon Strobe Light Amber | 307762 | 1 |
| 4. Light, Work | 307822 | 2 |
| 5. Camera Cover | 308099 | 2 |
| 6. Control Pad, Remote | 308100 | 1 |

Deck

| PART DESCRIPTION | PART NO. | QTY |
|--|-----------|-----|
| 1. Ladder, Assy (Deck&Trailing Axle) | 050352 | 1 |
| 2. Plate, Ladder, (Deck & Trailing Axle) | 050352-01 | 1 |
| 3. O-Ring Kit Rebuild Deck | 308079 | 2 |
| 4. Connection, Pneumatic, Service Blue | 301300 | 1 |
| 5. Connection, Pneumatic, Service, Red | 301301 | 1 |
| 6. Switch, Proximity (Raise Cylinders) | 306742 | 1 |

SECTION 4
Recommended Support Parts

| Hitch & Kickstand Assembly | | |
|---------------------------------------|----------|-----|
| PART DESCRIPTION | PART NO. | QTY |
| 1. Shim Pack Hitch | 040539 | 1 |
| 2. Screw, Cap 1 1/8" UNC | 350507 | 22 |
| 3. Washer, Flat | 354576 | 22 |
| 4. Limit Switch Assy | 043305 | 1 |
| 5. Arm, Turn Limit | 050332 | 1 |
| 6. O-Ring, Rebuild Kit | 308076 | 2 |
| 7. Coil, Valve, Kickstand and Lift | 308103 | 2 |
| 8. Coil, Valve Gooseneck Lock | 308104 | 3 |
| 9. Coil Valve Gooseneck Lift/Float | 308105 | 1 |
| 10. Coil Valve Gooseneck Lock/Float | 308106 | 1 |

| Gooseneck Assembly | | |
|---|----------|-----|
| PART DESCRIPTION | PART NO. | QTY |
| 1. Cylinder, Lock | 307647 | 1 |
| 2. O-Ring kit (lock cylinder) | 308077 | 1 |
| 3. O-Ring kit (Lift Cylinder) | 308078 | 1 |
| 4. Plate, Wear | 050048 | 2 |
| 5. Bolt, M12x1.75 X 40mm (wear Plate) | 355521 | 16 |
| 6. Washer M12 (Wear Plate) | 355265 | 16 |
| 7. Connection, Pneumatic, Service, Blue | 301300 | 1 |
| 8. Connection, Pneumatic, Service, Red | 301301 | 1 |
| 9. Switch, Proximity (Leveling Cylinders) | 306742 | 1 |

| Trailing Axle Assembly | | |
|-------------------------------|----------|-----|
| PART DESCRIPTION | PART NO. | QTY |
| 1. Valve, Pneumatic, RE-6 | 355973 | 1 |
| 2. Switch, Assembly, Brake | 050731 | 1 |
| 3. Cylinder, Master, Brake | 355974 | 2 |
| 4. Beacon, Strobe, Amber | 307762 | 1 |
| 5. Beacon, Strobe, Red | 307764 | 1 |
| 6. Switch, Assembly, Door | 307940 | 1 |