(BU001)

RAIL OPERATIONS & EMERGENCY RECOVERY PROCEDURES

RAIL- ABILITY

BALLAST UNLOADER BODY

ISSUE 1 LAST UPDATED 13/12/2005

TABLE OF CONTENTS

MOUNTING/DEMOUNTING BALLAST UNLOADER BODY

MOUNTING

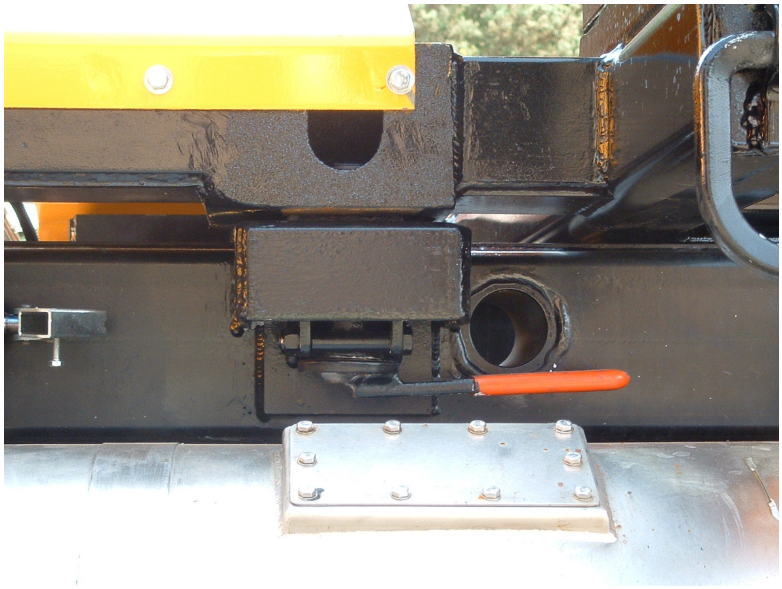
- ENSURE ALL TWIST LOCKS ON BALLAST UNLOADER BODY ARE IN UNLOCKED POSITION AND LOCATING PINS HAVE BEEN REMOVED.

- USE SHORTENERS ON THE LIFTING CHAINS TO ENSURE THE BODY IS KEPT LEVEL.

ENSURE CONVEYOR IS IN STOWED POSITION BEFORE ATTEMPTING TO LIFT THE BALLAST UNLOADER BODY. FAILURE TO COMPLY WITH THESE REQUIREMENTS MAY RESULT IN SEVERE DAMAGE TO THE MACHINE AND/OR MAJOR INJURY.

- LIFT THE BALLAST UNLOADER BODY USING THE LIFTING EYES AND LOWER IT ONTO THE JCB 714 CHASSIS, TAKING CARE TO ALIGN THE TWIST LOCK BASES ON THE BODY WITH THE TWIST LOCKS ON THE CHASSIS.

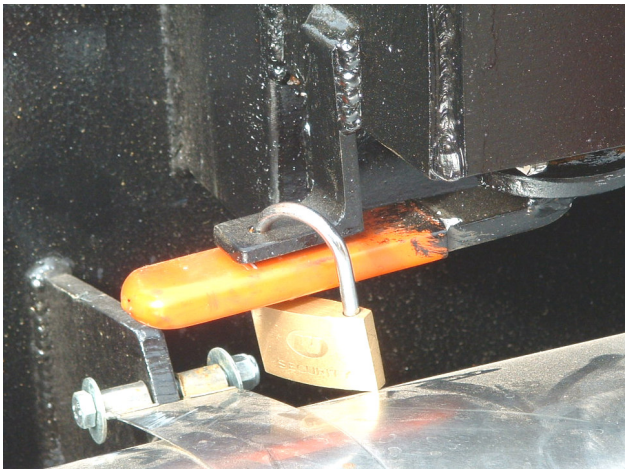
- ONCE THE BODY HAS BEEN LOWERED INTO PLACE INSERT THE LOCATING PINS AND ENGAGE THE TWISTLOCKS BY TURNING THE HANDLES THROUGH 90 DEGREES AND MAKING SURE THEY CLICK INTO PLACE.



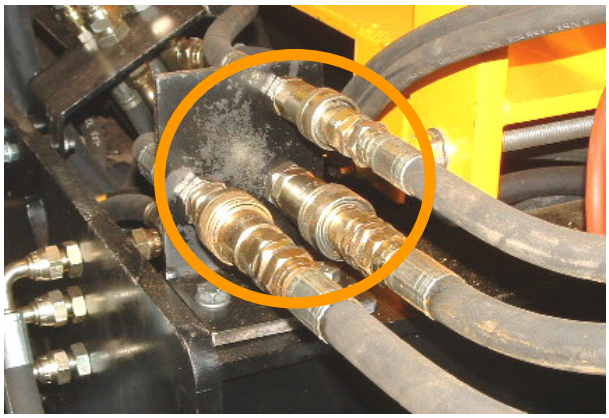
LOCATING PINS MUST BE INSTALLED AND BOLTED IN PLACE TO GUARD AGAINST NEGATIVE LOAD SCENARIOS. FAILURE TO COMPLY WITH THESE REQUIREMENTS MAY RESULT IN SEVERE DAMAGE TO THE MACHINE AND/OR MAJOR INJURY.

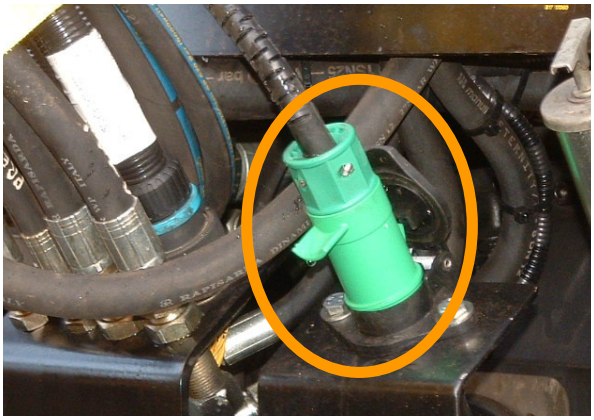
- TO ACCESS THE REAR TWIST LOCKS, TO ENGAGE THEM, REMOVE THE PIN ON THE WHEEL ARCH AND LIFT. ENGAGE STAY TO PREVENT THE ARCH DROPPING.

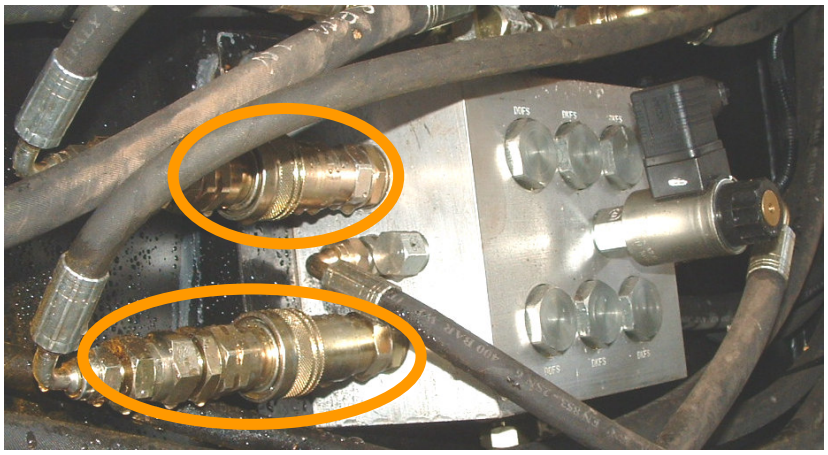
- ONCE THE TWIST LOCKS ARE ENGAGED THE PADLOCKS MUST BE USED TO SECURE THE TWIST LOCK HANDLES TO GUARD AGAINST ACCIDENTAL UNCOUPLING. THERE ARE 2 BRACKETS ON OPPOSITE CORNERS OF THE BALLAST UNLOADER BODY TO FACILITATE THIS.



- FINALLY LINK UP THE HYDRAULIC HOSES USING THE FASTER COUPLINGS AND CONNECT THE ELECTRICAL COUPLING TO THE SUPER-BOSS.







DEMOUNTING

TO DEMOUNT THE BODY SIMPLY REVERSE THE PROCESS DESCRIBED PREVIOUSLY. RELIEVE ANY OIL PRESSURE IN THE SYSTEM AND THEN TAKE CARE TO REMOVE ALL HYDRAULIC AND ELECTRICAL COUPLINGS, REMOVE BOTH LOCATING PINS, AND DISENGAGE ALL TWISTLOCKS BEFORE REMOVING THE BODY. THE BODY SHOULD ONLY BE LIFTED OFF USING THE LIFTING EYES ON THE HOPPER.

SET UP TRESTLES WHERE THE BALLAST UNLOADER BODY IS TO BE STORED. DROP BODY ONTO TRESTLES AND SECURE IN PLACE.

FAILURE TO COMPLY WITH THESE REQUIREMENTS MAY RESULT IN SEVERE DAMAGE TO THE MACHINE AND/OR MAJOR INJURY.

LOADING PRECAUTIONS

- DO NOT LOAD HOPPER WHEN MACHINE IS ON TRACK WHEN WORKING UNDER LIVE OLE.
- DO NOT FILL HOPPER OVER CAB HEIGHT.
- ENSURE BALLAST BODY IS PROPERLY CONNECTED TO JCB 714 SUPERBOSS BEFORE ATTEMPTING TO LOAD HOPPER.
- CARE MUST BE TAKEN TO AVOID STRIKING THE HOPPER OR CONVEYOR WITH THE LOADING MACHINE.
- DO NOT FILL WITH MATERIAL THAT MIGHT JAM HOPPER.
- DO NOT LOAD WITH BELT RUNNING.
- THE BALLAST UNLOADER BODY IS DESIGNED TO CONVEY AND DISTRIBUTE THE FOLLOWING:

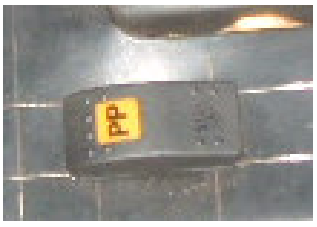
  - ✓ BALLAST
  - ✓ TYPE 1 AGGREGATE
  - ✓ SAND
  - ✓ GRIT

FAILURE TO COMPLY WITH THESE REQUIREMENTS MAY RESULT IN SEVERE DAMAGE TO THE MACHINE AND/OR THE RAIL INFRASTRUCTURE.

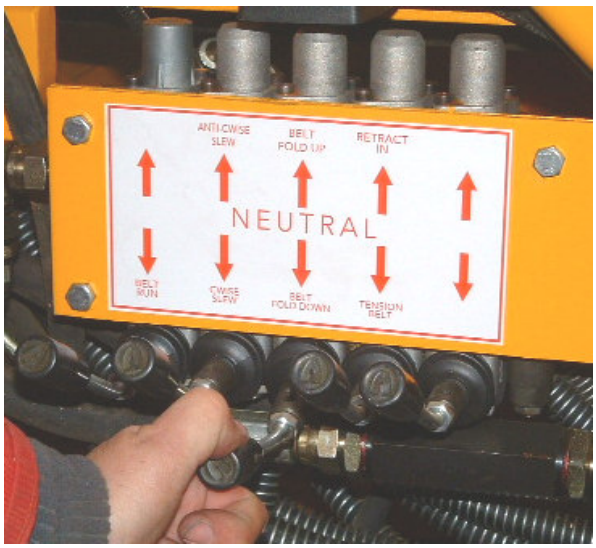
UNLOADING PROCEDURE

- REMOVE BOTH SLEW LOCKS AND THE CONVEYOR RETAINING BAR BEFORE ATTEMPTING TO EXTEND THE CONVEYOR BELT.

- WITH THE SUPERBOSS' ENGINE RUNNING SWITCH ON THE "PP" IN THE CAB. SWITCHING THIS TO ITS MIDDLE POSITION ACTIVATES THE BALLAST UNLOADER SYSTEMS. SWITCHING IT AGAIN OPERATES THE WORKING LIGHTS.

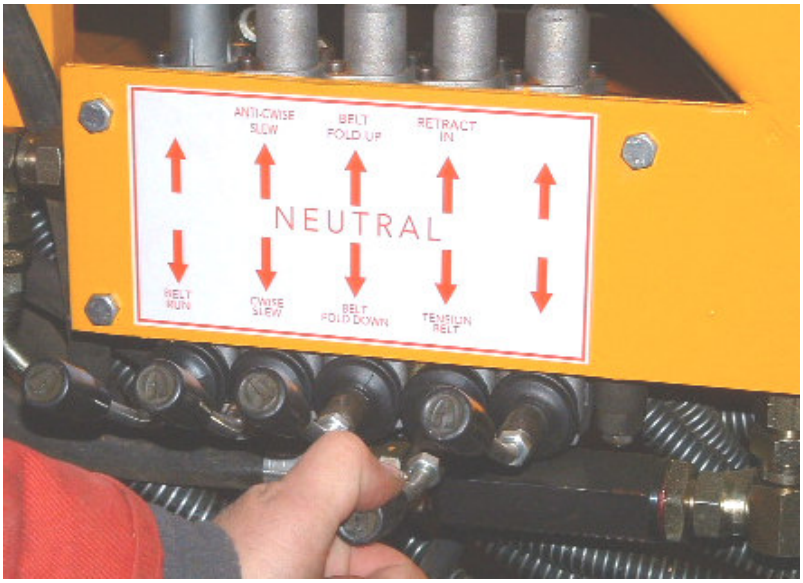


- TO DEPLOY THE CONVEYOR PULL DOWN ON THE LEVER LABELLED "BELT FOLD DOWN". DO NOT OPERATE THE CONTROLS AGGRESSIVELY.



- HOLD THIS LEVER DOWN UNTIL THE CONVEYOR RAMS ARE FULLY EXTENDED AND THE BELT IS HORIZONTAL.

- WITH THE CONVEYOR IN ITS FULLY DEPLOYED POSITION PULL DOWN ON THE "TENSION BELT" LEVER.



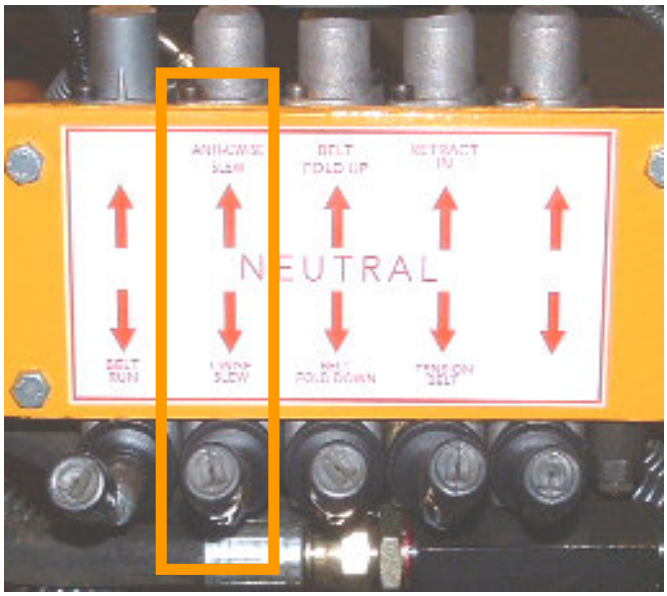
NOTE: IF CONVEYOR BELT GETS TRAPPED BETWEEN THE TWO STAGES FOLD BELT UP AND THEN FOLD DOWN AGAIN WHILST OPERATING BELT TENSION RAMS.

- HOLD THIS DOWN UNTIL BELT IS FULLY TENSIONED. THE CONVEYOR IS NOW READY FOR USE.

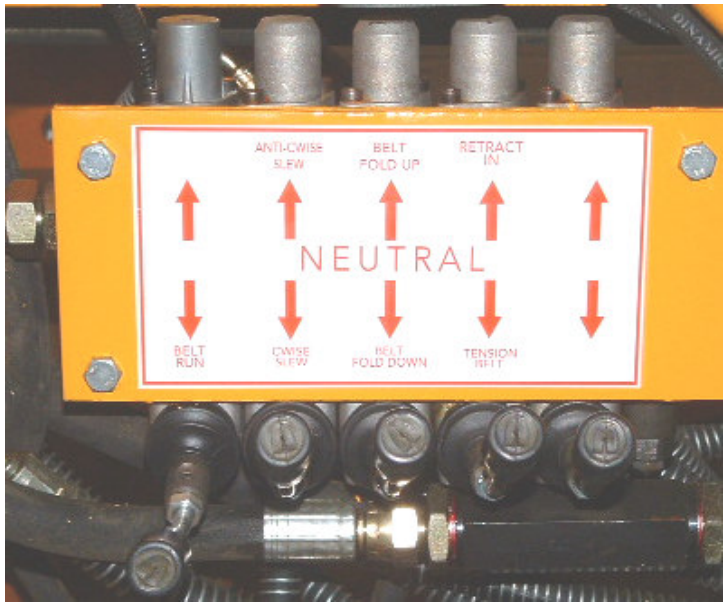
- THE CONVEYOR CAN NOW BE RUN FROM INSIDE OR OUTSIDE OF THE CAB.

OPERATING FROM OUTSIDE THE CAB

- POSITION CONVEYOR BY SETTING THE SLEW ANGLE. THIS IS DONE BY PUSHING UP OR PULLING DOWN ON THE SLEW LEVER. PUSHING UP ON THE LEVER SLEWS THE BELT ROUND IN AN ANTI-CLOCKWISE DIRECTION. PULLING DOWN ON THE LEVER SLEWS THE BELT ROUND IN A CLOCKWISE DIRECTION.



- WITH THE BELT IN POSITION AND OBSERVING ALL SAFETY PROTOCOLS THE CONVEYOR CAN BE STARTED. TO OPERATE THE BELTS DRIVE PULL DOWN ON THE "BELT RUN" LEVER. THIS LEVER WILL DETENT UNTIL THE LEVER IS PUSHED BACK UP INTO THE "NEUTRAL" POSITION.



- WITH THE CONVEYOR BELT RUNNING THE SPEED CAN BE ADJUSTED BY TURNING THE "HOPPER SPEED" VALVE. TURNING THE VALVE ANTI-CLOCKWISE WILL INCREASE THE SPEED OF THE HOPPER BELT. TURNING IT CLOCKWISE DECREASES THE SPEED OF THE HOPPER BELT.

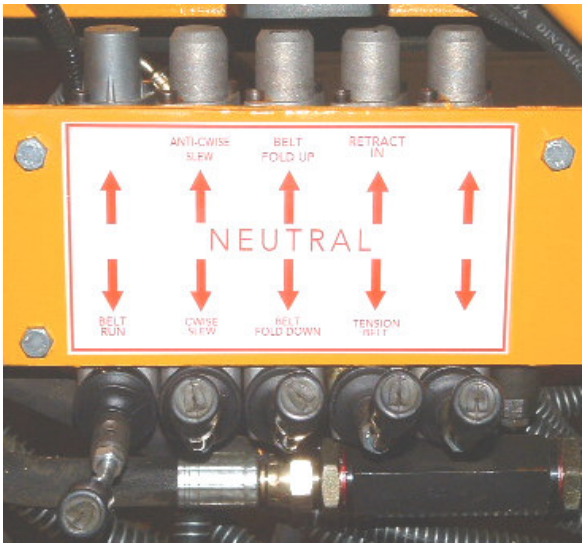
- THE SLEW ANGLE CAN ALSO BE ADJUSTED WHILE THE BELT IS IN MOTION USING THE SAME SLEW CONTROLS AS DESCRIBED PREVIOUSLY.

NEVER USE CONTROLS ON BALLAST UNLOADER BODY IF THE SUPER-BOSS IS IN MOTION. FAILURE TO COMPLY WITH THESE REQUIREMENTS MAY RESULT IN SEVERE DAMAGE TO THE MACHINE AND/OR MAJOR INJURY.

OPERATING FROM INSIDE THE CAB

- IN THE CAB THE TIPPING LEVER OPERATES THE CONVEYOR SLEW. PUSHING FORWARD ON THE LEVER SLEWS THE BELT ANTI-CLOCKWISE AND PULLING ON IT SLEWS THE BELT CLOCKWISE.

- WITH THE BELT IN POSITION TURN OFF THE "PP" SWITCH, EXIT THE CAB AND PULL THE "BELT RUN" LEVER INTO ITS DOWN POSITION. THE BELT WILL NOT START RUNNING OR SLEW UNTIL THE "PP" SWITCH IN THE CAB IS TURNED ON AGAIN.



- THE SPEED OF THE CONVEYOR CAN STILL ONLY BE ADJUSTED FROM OUTSIDE THE CAB AND SHOULD BE PRESET.

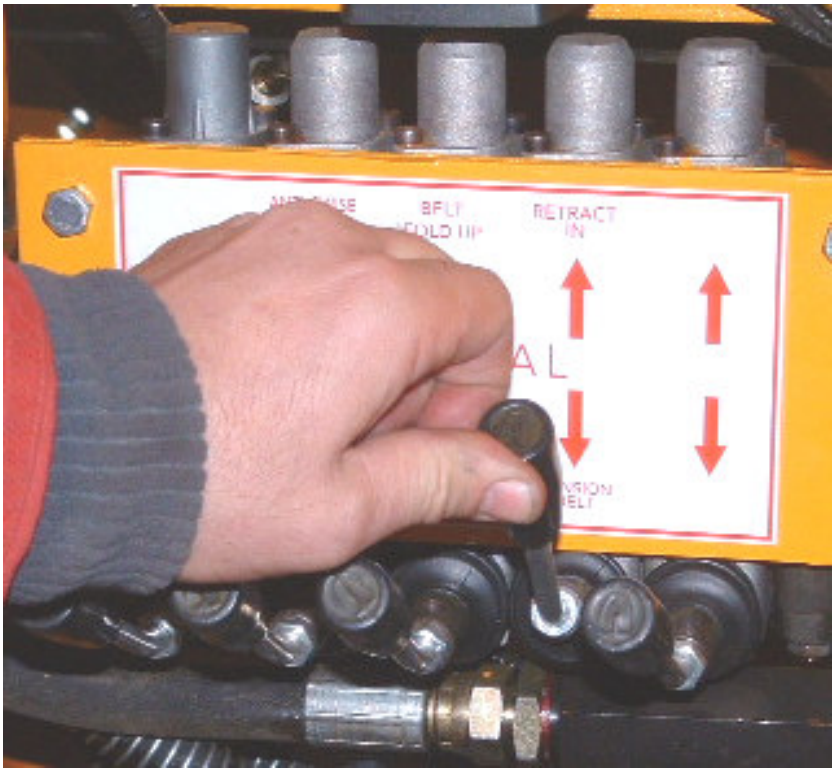
- THE SUPERBOSS CAN BE DRIVEN WITH THE BALLAST UNLOADER RUNNING ALLOWING LONG STRETCHES OF TRACK TO BE COVERED.

AFTER UNLOADING

- IF THE BELT HAS BEEN STOPPED BY TURNING OFF THE "PP" SWITCH IN THE CAB ENSURE THE "BELT RUN" LEVER IS MOVED BACK INTO THE NEUTRAL POSITION BEFORE STOWING THE CONVEYOR.

- WITH THE "PP" SWITCH ON HOLD UP THE "RETRACT IN" LEVER TO SLACKEN THE CONVEYOR BELT.

NEVER OMIT THIS STEP. DOING SO MAY RESULT IN SEVERE DAMAGE TO THE MACHINE.



- ONCE THE TENSIONING RAMS ARE FULLY RETRACTED PUSH UP ON THE "BELT FOLD UP" LEVER. HOLD THIS UP UNTIL THE CONVEYOR RAMS ARE FULLY EXTENDED.

DO NOT ATTEMPT THIS STEP WITHOUT FIRST RETRACTING THE TENSIONING RAMS.

- WITH THE CONVEYOR FULLY FOLDED INSTALL THE SLEW LOCKS AND CONVEYOR RETAINING BAR.

OPERATIONAL SAFETY PRECAUTIONS

- ALL WORK ON OR NEAR THE RAILWAY INFRASTRUCTURE MUST BE CARRIED OUT STRICTLY IN ACCORDANCE WITH RAILWAY REGULATIONS.
- ATTENTION MUST BE PAID TO RAILWAY GROUP STANDARDS AND ALL SAFETY PRECAUTIONS MUST BE FOLLOWED AT ALL TIMES.
- WHEN WORKING ON ELECTRICALLY OPERATED ROUTES, BE SURE TO OBSERVE OFFICIAL REGULATIONS. ALWAYS OBSERVE MINIMUM CLEARANCE FROM OVERHEAD WIRES.
- ALL STAFF MUST BE FULLY TRAINED AND ASSESSED AS COMPETENT TO USE THIS PIECE OF EQUIPMENT ON RAILWAY INFRASTRUCTURE.
- ONLY EVER LIFT BALLAST UNLOADER BODY BY THE LIFTING EYES SITUATED ON THE HOPPER.
- BALLAST UNLOADER BODY CONVEYOR BELT IS OUT OF W6 GAUGE WHEN SLEWED.
- LOCATING PINS AND TWIST LOCKS MUST BE ENGAGED AT ALL TIMES.

SEE THE NETWORK RAIL VAB ENGINEERING ACCEPTANCE CERTIFICATE FOR ADDITIONAL, SPECIFIC MACHINE LIMITATIONS OF USE.

TRAVELLING ON THE RAIL

MACHINE TRAVEL POSITION AS SHOWN ABOVE AND AS FOLLOWS:

- STEERING LOCK IS ENGAGED
- SLEW LOCKS ARE IN PLACE
- CONVEYOR RETAINING BARS ARE IN PLACE
- TWIST LOCKS ARE ENGAGED
- LOCATING PINS ARE INSTALLED
- WHEEL ARCHES ARE LOCKED DOWN

FAILURE TO COMPLY WITH THESE REQUIREMENTS MAY RESULT IN SEVERE DAMAGE TO THE MACHINE AND/OR THE RAIL INFRASTRUCTURE.

EMERGENCY OFF TRACKING

EMERGENCY OFF TRACKING MAY BE NECESSARY DURING THE WORKING LIFESPAN OF THE MACHINE. IT MUST BE STRESSED THAT THIS IS AN EMERGENCY PROCEDURE ONLY AND SHOULD NOT BE USED IN THE NORMAL CAUSE OF EVENTS. IF YOU ARE ASKED TO OFF TRACK USING THIS METHOD, AT AN UNPREPARED LOCATION, WITHOUT SUITABLE JUSTIFICATION YOU SHOULD REPORT TO YOUR ON CALL MANAGER AND ASK HIS ADVICE BEFORE ATTEMPTING THIS MANOEUVRE. IF THERE IS REAL CAUSE TO USE THIS METHOD THERE ARE CERTAIN PROCEDURES THAT SHOULD BE FOLLOWED:

- THE OFF TRACKING AREA MUST BE INSPECTED FOR ITS SUITABILITY AS NORMAL.
- AN AREA WHERE THERE ARE NO OBSTRUCTIONS SHOULD BE SELECTED. FOR EXAMPLE, THERE SHOULD BE NO CONDUCTOR RAIL PRESENT, NO HIGH BALLAST SHOULDERS AND NO OBVIOUS HAZARDS.
- EMERGENCY OFF TRACKING MUST NOT BE CARRIED OUT ON CANTS.

IN THE EVENT OF A REAL EMERGENCY THE PROCEDURE FOR OFF TRACKING IS AS FOLLOWS:

- APPROACH THE OFF TRACKING AT A SAFE SPEED.
- SOUND THE HORN TO ALERT PERSONNEL AT THE OFF TRACKING AREA AS YOU APPROACH.
- RAISE ALL OF THE RAIL WHEELS.
- DRIVE THE MACHINE CLEAR OF THE RUNNING RAIL.

WHEN CARRYING OUT THIS OPERATION ALWAYS FOLLOW ANY HAND SIGNALS AND CARRY OUT ALL MOVEMENTS SMOOTHLY AT A SAFE SPEED.

EMERGENCY RECOVERY

IF YOUR MACHINE BREAKS DOWN IN SUCH A POSITION THAT IT IS LIKELY TO OBSTRUCT AN ADJACENT LINE OR CAUSE AN ACCIDENT OR DAMAGE TO THE RAILWAY INFRASTRUCTURE OR ANY OTHER VEHICLE, IT IS IMPORTANT THAT THE MACHINE IS PLACED IN A SAFE POSITION AS SOON AS POSSIBLE. FOR THIS REASON THE JCB 714 HAS BEEN FITTED WITH A MANUAL RECOVERY PUMP AND TOW BAR BY WHICH ANOTHER MACHINE CAN TOW IT TO SAFETY.

INSTRUCTIONS ON HOW THE RECOVERY PUMP WORKS ARE DESCRIBED BELOW, YOU MUST MAKE A POINT OF READING AND UNDERSTANDING THE PROCEDURES SO THAT IN THE EVENT OF A MACHINE FAILURE YOU ARE ABLE TO PUT THE MACHINE IN A SAFE POSITION.

THE MAIN POINTS ARE:

CONNECT YOUR MACHINE AND RECOVERY VEHICLE TOGETHER WITH THE APPROVED TOW BAR.

THE RECOVERY PUMP ON THE BALLAST UNLOADER BODY ALLOWS OPERATION OF THE CONVEYOR VIA THE LEVER CONTROLS AS IN NORMAL OPERATION. THE CONVEYOR MUST BE PROPERLY STOWED, AS DESCRIBED ON PAGE 13, BEFORE ATTEMPTING RECOVERY.

SELECT THE REQUIRED RAIL GEAR WITH THE TAP ON THE HAND PUMP, MAKING SURE THAT THE SCREW TAP ON THE SIDE OF THE PUMP IS SCREWED IN. DOING THIS RAISE THE RAIL GEAR SO THERE IS APPROXIMATELY 10mm BETWEEN THE ROAD WHEEL AND THE DRIVE TRUMPET.

WHEN USING THE HAND PUMP THE RAIL GEAR WILL MOVE SLOWLY.

ONLY RAISE THE RAIL GEAR OF THE FAILED MACHINE ONCE THE TOW BAR HAS BEEN CONNECTED TO THE RECOVERY VEHICLE OTHERWISE THE MACHINE MIGHT RUN AWAY.

ENSURE THAT TOWING IS CARRIED OUT AT A SLOW SPEED, APPROXIMATELY 2 MPH, AS THE RECOVERY VEHICLE HAS TO BRAKE FOR BOTH VEHICLES. AT A HIGHER SPEED BRAKING DISTANCE WOULD BE GREATLY INCREASED.

RECOVERY PUMP

[WARNING] THE MACHINE SHOULD BE COUPLED TO THE TOWING VEHICLE BEFORE THIS PROCEDURE IS FOLLOWED. THE MACHINES BRAKES ARE DISABLED WHEN IT IS IN FREE–WHEEL MODE. FAILURE TO COUPLE THE MACHINE INITIALLY MAY RESULT IN IT ROLLING AWAY.

ON THE BALLAST UNLOADER BODY

TO PERFORM ANY OPERATION ON THE CONVEYOR PULL/PUSH THE APPROPRIATE LEVER AND OPERATE THE HAND PUMP, E.G. HOLDING DOWN THE SLEW LEVER AND OPERATING THE HAND PUMP WILL SLEW THE BELT ROUND CLOCKWISE.

ONCE THE BELT IS POSITIONED DIRECTLY BEHIND THE SUPERBOSS IT MUST BE FOLDED UP AND LOCKED IN POSITION WITH THE SLEW LOCKS AND THE CONVEYOR RETAINING BAR.

ON THE SUPERBOSS

THERE IS A TAP ON THE RECOVERY PUMP TO DIRECT THE FLOW TO THE FRONT OR REAR RAIL GEAR. ONCE THE CORRECT AXLE HAS BEEN SELECTED USE THE HAND PUMP TO LIFT THE RAIL GEAR. MAKE SURE SCREW TAP IS TIGHTENED.

RAISE THE RAIL GEAR UNTIL THE DRIVE TRUMPET IS NO LONGER IN CONTACT WITH THE ROAD WHEELS. THE WHEELS CAN NOW ROLL FREELY.