# 721F
# Tier 4
# Wheel Loader

# SERVICE MANUAL

**Part number 84487557**
1st edition English
April 2011

CASE CONSTRUCTION

MidWestTech | Case 721F Tier 4 Engine Service Manual | Publication 84487557

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# MAINTENANCE SCHEDULE

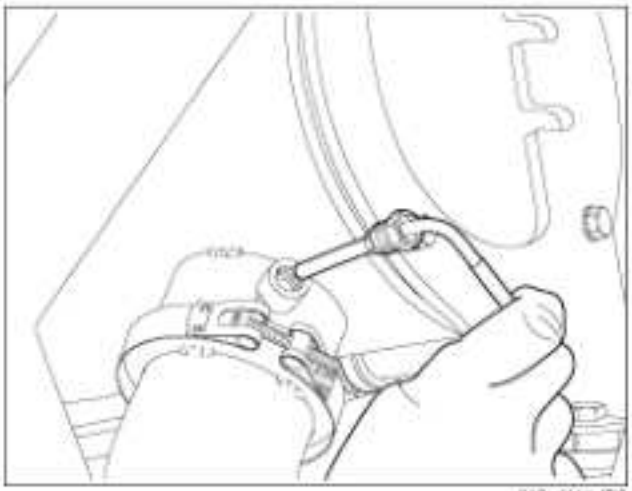
| SERVICE INTERVAL | ITEM NUMBER | SERVICE POINTS | Initial Service | FREQUENCY IN HOURS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | CHECK | CLEAN | CHANGE | DRAIN | LUBRICATE | REPLACE | ADJUST |
| Variable Periodic (•) | 2 | Radiator Coolant Level | | • | | | | | | |
| | 13 | Tires | | • | | | | | | |
| | 16 | Hydraulic Filter | | • | | | | | | |
| | 12 | Alternator, AC, Drive Belt | | • | | | | | | |
| | 31 | Air cleaner | | • | • | | | | | |
| | 19 | Bleed Fuel Filter of Condensation | | | | | • | | | |
| | 28 | Clean SCR system DEF tank filter | | | • | | | | | |
| | XX | Fire extinguisher | | • | | | | | | |
| Every 10 Hours | 1 | Check Engine Oil Level | | 10 | | | | | | |
| Every 50 Hours | 13 | Check Engine Coolant Level | | 50 | | | | | | |
| | 3 | Check Transmission Oil Level | | 50 | | | | | | |
| | 4 | Check Hydraulic Oil Level | | 50 | | | | | | |
| | 5 & 6 | Grease Bucket Mounting Fittings | | | | | | 50 | | |
| | 7 | Grease machine and attachments | | | | | | 50 | | |
| First 100 Hours | 16 | Change Engine Oil and Filters | 100 | | | | | | | |
| | 18 | Replace Fuel Filters | 100 | | | | | | | |
| | 20 | Change Hydraulic Filter | 100 | | | | | | | |
| | 25 | Change Oil in Axles | 100 | | | | | | | |
| | 13 | Check wheel torque | | 100 | | | | | | |
| | 28 | Clean in-line DEF supply filter | | | 100 | | | | | |
| Every 100 Hours | 8 | Lubricate The Steering Cylinder Pivots - Rod And Closed End (4 Fittings) | | | | | | 100 | | |
| | 9 | Grease Front Drive Shaft Support Bearing | | | | | | 100 | | |
| | 10 | Lubricate Loader Lift & Cylinder Pivots (10) Z-bar | | | | | | 100 | | |
| | 10 | Lubricate Loader Lift & Cylinder Pivots (18) XT | | | | | | 100 | | |
| Every 250 Hours | 11 | Check Cab Air Filter | | 250 | | | | | | |
| | 14 | Check Tire Pressure & Wheel Torque | 4 | 250 | | | | | | |
| | 12 | Check Drive Belt | | 250 | | | | | | |
| | XX | Trans Clutch Calibration (See Section 6002) | 250 | 1000 | | | | | | |
| Every 500 Hours | 14 | Check Axle Oil Level | | 500 | | | | | | |
| | 15 | Check Battery Electrolyte Level | | 500 | | | | | | |
| | 16 | Change Engine Oil and Filter | | | | 500 | | | | |
| | XX | Check ROPS | | 500 | | | | | | |
| | 18 | Drain Fuel Tank Condensation & Water Separator | | | | | 500 | | | |
| | 19 | Replace Fuel Filter | | | | | | | 500 | |


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| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Every 1000 Hours | 20 | Replace Hydraulic Oil filter | | | | | | | 1000 | |
| | 21 | Grease Articulation Fittings | | | | | | 1000 | | |
| | 24 | Change crankcase filter | | | | 1000 | | | 1000 | |
| | 23 | Replace Drive Belt | | | | | | | | |
| | 11 | Replace Cab Air Filter | | | | | | | 1000 | |
| | 26 | Change Transmission Oil and Filter | | | | 1000 | | | | |
| | XX | Check Injector Calibration | | 1000 | | | | | | |
| | XX | Check Valve Adjustment (Engine Manual) | | 1000 | | | | | | |
| | XX | Trans Clutch Calibration (See Section 6002) | | 1000 | | | | | | |
| Every 1500 Hours | 21 | Change Front & Rear Axle Oil | | | | 1500 | | | | |
| | 26 | Change Transmission Oil and Filter | | | | 1500 | | | | |
| | 28 | Clean in-line DEF filter | | | | | | | | |
| Every 2000 Hours | 29 | Change Hydraulic Oil | | | | 2000 | | | | |
| | 30 | Change Coolant | | | | 2000 | | | | |
| | 31 | Replace Engine Air Cleaner | | | | | | | 2000 | |
| | 32 | Lubricate cab and door | | | | | | 2000 | | |
| | XX | Valve Clearance (Engine Manual) | | | | | | | | 2000 |
| Every 3000 Hours | XX | Replace DEF supply module filter | | | | | | | 3000 | |
| Every 6000 Hours | XX | Engine Injectors (Engine Manual) | | | 6000 | | | | | |
| | XX | Fuel Pump (Engine Manual) | | | 6000 | | | | | 6000 |


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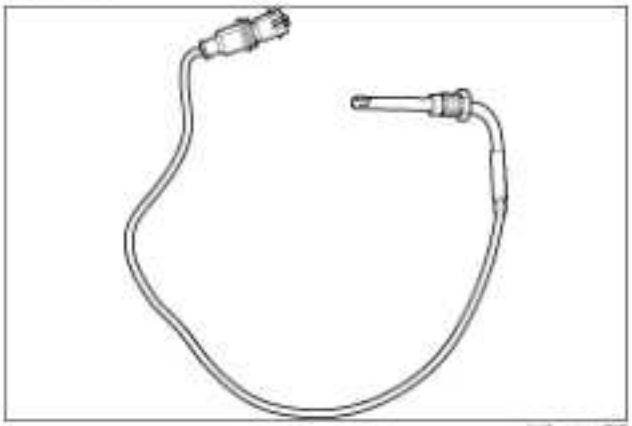
### STEP 5



IMG_1510.JPG

Remove temperature sensor from exhaust system.

### STEP 6



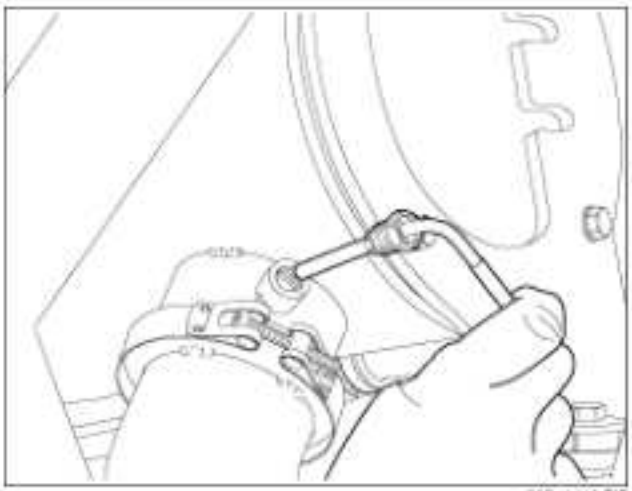
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Remove wire ties securing wire harness to support brackets. Unplug sensor from machine wiring harness and remove it.

## Upstream Exhaust Temperature Sensor Reinstall

**NOTE:** *Do not use impact wrenches on the exhaust system unless the sensors are removed."*

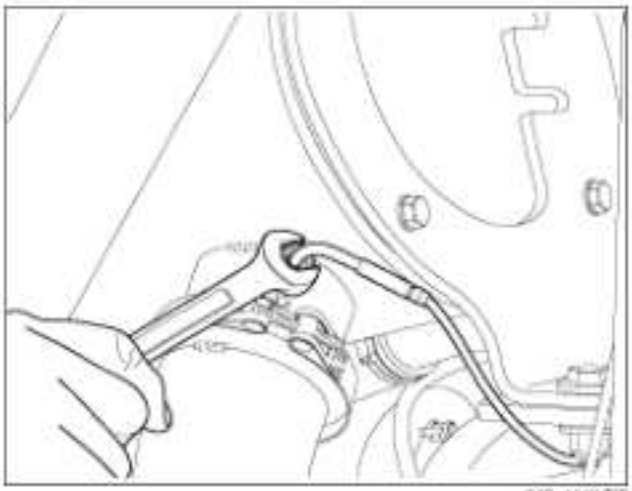
### STEP 1



IMG_1510.TIF

Install temperature sensor into exhaust pipe.

### STEP 2



IMG_1507.TIF

Secure sensor into exhaust pipe. Sensor torque 40 to 50 Nm (30 to 36 lb ft.). Reconnect sensor to wire harness and secure harness to support brackets using new wire ties.


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## 169 – DNOX Controller

| Check Points | Correct Reading | Possible Cause of Bad Reading |
|---|---|---|
| **NOTE:** *See SCR controller manual for details* | | |

## 170 – Rear View Camera / Monitor

| Check Points | Correct Reading | Possible Cause of Bad Reading |
|---|---|---|
| **NOTE:** *See Camera manual for details* | | |

## 171 – Differential Lock Switch (Manual)

| Check Points | Correct Reading | Possible Cause of Bad Reading |
|---|---|---|
| **NOTE:** *Remove connector SDM from switch* | | |
| Between terminals 2 and 3 | Normally open, Continuity when switch is closed | Bad Lock Switch. |

## 172 – Differential Lock Switch

| Check Points | Correct Reading | Possible Cause of Bad Reading |
|---|---|---|
| **NOTE:** *Remove connector from switch* | | |
| Between terminals 2 and 3 | Normally open, Continuity when switch is closed | Bad Lock Switch |

## 173 – Differential Lock Solenoid

| Check Points | Correct Reading | Possible Cause of Bad Reading |
|---|---|---|
| Terminal for wire 34C-A to ground | Continuity | Bad ground circuit. |
| **NOTE:** *Put the master disconnect switch and ignition switch in ON position.* | | |
| Terminal 1 for wire 34A-D to ground | 24 volts | Bad TECM module. Also check circuit 34C. |
| **NOTE:** *If the readings are good, replace the differenital lock solenoid.* | | |
| **NOTE:** *See transmission section for more details* | | |


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## Assembly

### STEP 1

Install new O-rings.

### STEP 2

Install and torque pressure relief valve (17) to 50 Nm (37 lb-ft).

### STEP 3

Install and torque accumulator drain screw (10) to 3.5 Nm (31 lb-in). Install the plug for accumulator drain screw and torque to 7 Nm (62 lb-in).

### STEP 4

Install and torque orifice (15) to 15 Nm (11 lb-ft), install poppet (14), install and torque orifice (13) to 15 Nm (11 lb-ft).

### STEP 5

Install and torque solenoid valve to 12 Nm (106 lb-in).

### STEP 6

Install springs (5 &6), spring carrier (4), bushing (3), cap screw (2) onto spool (7) and torque cap screw (2) to 5.5 Nm (48.5 lb-in).

### STEP 7

Install spool (7) into valve block (16).

### STEP 8

Install and torque plug (1) to 270 Nm (199 lb-ft).

### STEP 9

Install plug (8) and torque to 140 Nm (103 lb-ft), plug (9) and torque to 30 Nm (22 lb-ft), and plug (11) and torque to 90 Nm (66 lb-ft).

### STEP 10

Install the ride control valve in the machine, see section 8001.

### STEP 11

Test the ride control system, see section 8002.


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## INDEX OF FUNCTIONS


| FUNCTION | SHT |
|---|---|
| AIR SEAT | 12 |
| BACKUP ALARM | 6 |
| CAN COMMUNICATION | 12 |
| COLD START | 4 |
| ENGINE CONTROL | 5 |
| HOOD LIFT | 11 |
| HVAC | 12,14 |
| IGNITION SWITCH | 4 |
| INSTRUMENT CLUSTER | 9 |
| LIGHTING 1 (combos...) | 6 |
| LIGHTING 2 (work lights) | 7 |
| MACHINE CONTROLS | 10 |
| RADIO/POWER CONVERTER | 12 |
| POWER DISTRIBUTION | 4 |
| TRANSMISSION CONTROL | 8 |
| SCR EXHAUST TREATMENT | 5 |
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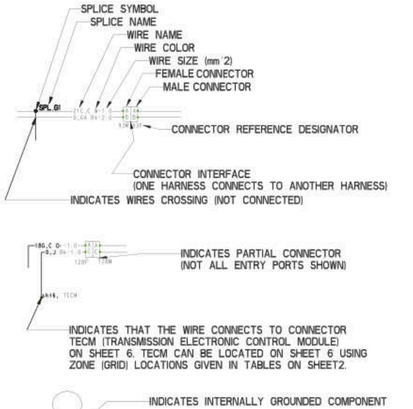

### COLOR ABBREVIATIONS

| ABBREVIATION | COLOR |
|---|---|
| Bk | BLACK |
| DU | DARK BLUE |
| G | GREEN |
| K | PINK |
| LG | LIGHT GREEN |
| LU | LIGHT BLUE |
| N | BROWN |
| Or | ORANGE |
| P | PURPLE OR VIOLET |
| R | RED |
| S | GREY |
| T | TAN |
| U | BLUE |
| W | WHITE |
| Y | YELLOW |

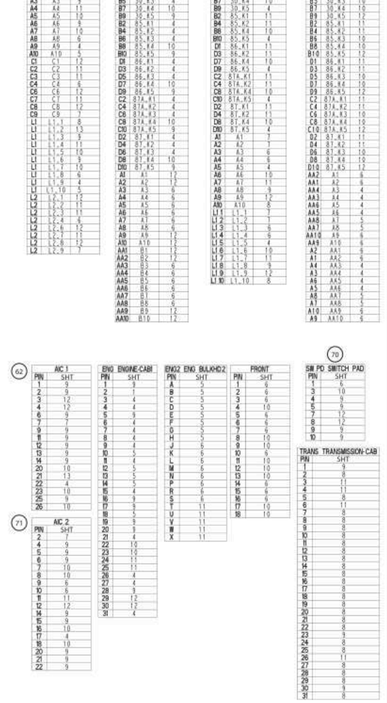
### LARGE CONNECTOR LIST

| NAME | DESCRIPTION | SHEET |
|---|---|---|
| A1C_1 | ADV INSTR CLUSTER 1 | 4, 7, 9, 10 |
| A1C_2 | ADV INSTR CLUSTER 2 | 4, 6, 7, 9, 10 |
| CAB_E | CAB-ENGINE | 4, 5, 9, 10, 11, 12 |
| CAB_F | CAB-FRNT_CHAS | 6, 10 |
| CAN_MOD_2 | JSS CAN MOD | 13 |
| ECA | ELECT CNTR A | 4, 5, 6, 7, 8, 9, 10, 11 |
| ECB | ELECT CNTR B | 4, 6, 9, 10, 12 |
| ECC | ELECT CNTR C | 4, 6, 7, 8, 9, 10, 11 |
| ECD | ELEC CNTR D | 4, 5, 6, 10, 11, 12 |
| ENG | ENGINE-CAB1 | 4, 5, 9, 10, 11, 12 |
| FRONT | FRNT_CHAS-CAB | 6, 10 |
| SW_PD | SWITCH PAD | 6, 9, 10, 12 |

### DIAGRAM SYMBOL DESCRIPTIONS




REF DES NAMING CONVENTION
S_ ROCKER SWITCHES
L_ LIGHTS
P_ PRESSURE SENSORS/SWITCHES
Y_ SOLENOIDS
R_ RESISTANCE MEASURE
ABOVE LETTER FOLLOWED BY THE FIRST LETTER
OF THE FIRST TWO WORDS OF THE SYMBOL LABEL
SPL_ SPLICE






### CONNECTOR LIST

| NAME | DESCRIPTION | SHEET |
|---|---|---|
| 115 | GRID_HTR_PWR | 4 |
| 193 | STARTER_RELAY | 4 |
| 194 | STARTER_SIGNAL | 4 |
| 195 | STR_REL_PWR | 4 |
| 108T | DIAGNOSTIC_CONNECTOR | 8 |
| 140M | DIODE_MODULE | 11 |
| 197T | MAIN_CAB_FNR | 8 |
| 197M | FNR-MAIN_CAB | 8 |
| 202M | ROLLBACK_JUMPER | 10 |
| 209T | BACK-UP_ALRM_DISA_JMP | 6 |
| 209M | BACK-UP_ALRM_DISA_JMP | 6 |
| 20M | TRANS_KICK-DOWN | 8 |
| 213T | ALTERNATOR_RESISTOR | 4 |
| 216T | ALTERNATOR_RESISTOR | 4 |
| 21M | TRANS_KICK-DOWN | 13 |
| 242T | CHAS_GRD-SEC_STRG_WTR | 11 |
| 244T | STARTER-SEC_STRG_WTR | 11 |
| 245T | SEC_STR_FLYBACK | 11 |
| 64T | FLASHER_CONNECTOR | 6 |
| 64M | FLASHER_CONNECTOR | 6 |
| AB+ | ALTERNATOR_B+ | 4 |
| AB_S | ALTERNATOR_B+ | 4 |
| ACT | AC_COMP_CLUTCH | 12 |
| AD | ALTERNATOR_D+ | 4 |
| ALT_S | ALTERNATOR_D+ | 4 |
| ARM_FNR | FNR-MAIN_CAB | 13 |
| ARM_POS | ARM POSITION | 13 |
| B1 | STARTER PWR STUD | 4 |
| B2 | STARTER-BATTERY | 4 |
| B3 | STARTER-BATTERY | 4 |
| B4 | STARTER_POWER | 4 |
| B5 | STARTER_PWR STUD | 4 |
| B6 | STARTER_POWER | 4 |
| B7 | STARTER-BATTERY | 4 |
| B8 | STARTER_POWER | 4 |
| BPP | PEDAL POSITION | 8 |
| BT1 | BATTERY_STARTER | 4 |
| BT2 | DISCONECT-BATTERY | 4 |
| BT3 | STARTER-BATTERY | 4 |
| BT4 | DISCON-BLCK_GRND | 4 |
| BTM_C | CAB_BOTTOM BULKHD | 6 |
| BTM_E | CAB BTTOM | 5 |
| BU1 | BACKUP_ALARM_GRND | 6 |
| BU2 | BACKUP_ALARM | 6 |
| BUZ | AIC_BUZZER | 9 |
| CABE2 | CAB TO ENG2 BULKHD | 5 |
| CAB_ARM | CAB TO ARMREST | 13 |
| CAB_ARM_FRM | CAB TO ARM TO FRM | 13 |
| CAB_B | CAB BTM BULKHEAD | 6 |
| CAB_FNR | MAIN_CAB_FNR | 13 |
| CAB_FRM | CAB TO JSS FRAME | 13 |
| CAB_FW | CAB POWER | 4 |
| CAB_RF | CAB TO ROOF CONNECTION | 7 |
| CAB_T | CAB-TRANSMISSION | 8 |
| CBPW | CAB POWER | 4 |
| CL | CIGAR_LIGHTER | 12 |
| CNV | 24V TO 12V PWR CONVERTER | 12 |
| DC1 | DISCONECT-BATTERY | 4 |
| DC2 | DISCON-BLCK_GRND | 4 |
| DC3 | FUEL_SOL_DISCONNECT | 4 |
| DC4 | FUEL_SOL_DISCONNECT | 4 |
| DC2_A | DISCONECT-BATTERY | 4 |
| DEFDM | DOSER METERING VLV | 5 |
| DIA | DIAGNOSTIC | 12 |
| DIA_2 | DIAGNOSTIC | 5 |

### CONNECTOR LIST

| NAME | DESCRIPTION | SHEET |
|---|---|---|
| DISC | DISCONNECT-ENGINE | 4 |
| DM | DIODE_OR | 11 |
| DNOX2 | NOX CONTROLLER | 5 |
| DS | DOOR SWITCH | 7 |
| DTLTS | DEF_TANK-LEVEL_TEMP_SENSOR | 5 |
| DTS | DOWNSTREAM TEMP SENS | 5 |
| DOR | DIODE-OR | 7 |
| ECA_L1 | B+ POWER | 4 |
| EDC7 | ENGINE CONTROLLER | 5 |
| EM | RTD_HEIGHT_CONT_RTT | 10 |
| ENG2 | ENG BULKHD_2 | 5, 6, 11 |
| ENG_B | CAB_BTTOM | 5, 9, 12 |
| ENG_D | DISC_HARNESS | 4 |
| ENG_H | ENGINE TO HOOD | 6 |
| ENG_H_T_1 | ENGINE TO HOOD | 6 |
| ENG_H_T_2 | ENGINE TO HOOD | 6 |
| ESS | ENG_SPEED_SENS | 8 |
| EVGT_3 | EVGT_FUSE | 5 |
| EVGT_4 | EVGT | 5 |
| E_HD | TRANS-HOOD | 6 |
| FFH | FUEL_FLTR_HTR | 4 |
| FLSHR | FLASHER_MODULE | 6 |
| FM | FILT_MAINT_SW | 8 |
| FNR_RLY | RELAY K2 | 13 |
| FSS | FAN_SPEED_SENS | 9 |
| FWD_DIODE | DIODE ASSY | 13 |
| FWM | FRONT-WIPER_MOTOR | 11 |
| FWWG | WIPER GROUND | 11 |
| FWW | FRONT_WASHER | 11 |
| GH | GRID_HEATER | 4 |
| GHC | GRID_HEATER_REL | 4 |
| GHF1 | GRID HTR FUSE | 4 |
| GHF3 | GRID_HTR_FUSE | 4 |
| GHF4 | GRID_HTR | 4 |
| GH_1 | GRID_HTR | 4 |
| GND_CAB1 | GROUND_A | 7 |
| GND_CAB2 | GROUND_A | 11 |
| GND_CAB3 | GROUND_C | 12 |
| GND_CAB4 | GROUND_C | 12 |
| GND_CAB5 | GROUND_C | 12 |
| GND_CAB6 | STRT_ TFH, WAT_SEP_HTR | 4 |
| GND_CAB3D | GROUND_A | 8 |
| GND_CAB_SPL | CAB GRND SPLICE | 12 |
| GND_CAB_SPL2 | SPL BACK LGHT GD | 4, 6 |
| GND_ENG1 | STRT_ TFH, WAT_SEP_HTR | 4 |
| GND_ENG2 | WIF, EDC | 5 |
| GND_ENG3 | SPLC_PK, WSHR MTR | 11 |
| GND_ENG4 | REAR LIGHTING | 6 |
| GND_ENG6 | DEDICATED | 9 |
| GND_ENG7 | TRANNY, COOL TEMP | 9 |
| GND_FC | GROUND_A | 10 |
| GND_GH1 | STRT_ TFH, WAT_SEP_HTR | 4 |
| GND_JSS | GROUND_A | 13 |
| GND_PDST | GROUND_A | 9 |
| GND_PDST1 | GROUND_A | 9 |

### CONNECTOR LIST

| NAME | DESCRIPTION | SHEET |
|---|---|---|
| GND_PDST2 | GROUND_A | 9 |
| GND_S1 | GROUND_A | 10 |
| GND_S2 | GROUND_A | 10 |
| GND_SSCHAS | SSM_GROUND_CABLE | 11 |
| GND_SSMOD | SEC-STR CHASIS GND. | 11 |
| GND_TRANS | GROUND_TRANS | 9 |
| GND_WTF | GRND WIT RING TERM | 4 |
| HD | HOOD_SWITCH | 11 |
| HDM | HOOD_LIFT_MOTOR | 11 |
| HD_L | HOOD-TRANS | 6 |
| HD_N | HOOD TO ENG. | 6 |
| HD_N_T_1 | HOOD TO ENGINE | 6 |
| HD_N_T_2 | HOOD TO ENGINE | 6 |
| HH | HORN_PWR | 10 |
| HN2 | HORN_GRND | 10 |
| HOT | HYD_OIL_TEMP_SENS | 9 |
| HSS | HNDTY AND AMB TEMP | 5 |
| HVAC1 | HVAC1 | 12 |
| HVAC2 | HVAC2 | 12 |
| ISS | INT_SPEED_SENS | 8 |
| JSS_19TT | MAIN_CAB_FNR | 13 |
| JSS_19TM | FNR-MAIN_CAB | 13 |
| JSS_ARM | JSS ARMREST TO CAB | 13 |
| JSS_CAB | JSS CAB | 12, 13 |
| JSS_CNT | JSS_CONTROLLER | 13 |
| JSS_FRM | JSS FRAME TO CAB | 13 |
| JSS_LS | JSS LOAD SENSE | 13 |
| JSS_PIL_DUMP | JSS PILOT DUMP | 13 |
| JSS_PIL_PR | JSS PILOT PRESSURE | 13 |
| JSS_RLY | RELAY K2 | 13 |
| JSS_VALVE | JSS HYD VALVE | 13 |
| K5 | | |
| KD_DIODE | DIODE ASSY. | 13 |
| KWCO | WIPER CUTOUT | 11 |
| L1_ECC | ECC BATT PWR | 7 |
| LBEGRD | LIGHT BEACON GRND | 7 |
| LBEPWR | LIGHT BEACON PWR | 7 |
| LDM1 | DOME_LIGHT_0+ | 7 |
| LDM2 | DOME_LIGHT_AUTO | 7 |
| LDM3 | DOME_LIGHT_GND | 7 |
| LLF | LIGHTS_LH | 6 |
| LLFW | LH_FRONT_WK_LT | 7 |
| LLR | LH_REAR_COMB_LT | 6 |
| LLRW | LH_REAR_WK_LT | 7 |
| LLR_L | LH_REAR_COMB_LT | 6 |
| LPL | LIC_PLATE_LIGHT | 6 |
| LRF | LIGHTS_RH | 6 |
| LRFO | FRONT_WK_LT_OPT | 7 |
| LRFB | FRONT_WK_LT_OPT | 7 |
| LRFS | FRONT_WK_LT_OPT | 7 |
| LRFW | RH_FRONT_WK_LT | 7 |
| LRR | RH_REAR_COMB_LT | 6 |
| LRRW | RH_REAR_WK_LT | 7 |
| LRR_E | RH_REAR_COMB_LT | 6 |
| LSPK | LEFT_SPEAKER | 12 |
| MON | CAMERA/MONITOR | 7 |
| NOXS | NOX SENSOR | 5 |
| NTRL_DIODE | DIODE ASSY | 13 |
| OSS | OUT_SPEED_SENS | 8 |
| PAF | AIR_FILT_RES_SW | 9 |
| PBD | DEC_PRESS_SW | 8 |
| PBL | BRAKE_L_T_PRES_SW | 6 |
| PBR | BRA_WARN_PR_SW | 9 |
| PHF | HYD_OIL_FILT_RES_SW | 9 |
| PHF9 | HYD_FLTR_RES_SW | 9 |
| PO1 | POWER_OUTLET | 12 |
| PO2 | POWER_OUTLET | 12 |
| PRB1 | RED_BRAKE_SW | 9 |
| PRB2 | RED_BRAKE_SW | 9 |
| PRBT | ROLLBACK_PRES_SW | 10 |
| PRH | AC HIGH PRESS SW | 12 |

### CONNECTOR LIST

| NAME | DESCRIPTION | SHEET |
|---|---|---|
| PRL | AC LOW PRESS SW | 12 |
| PRMB_L1 | B+ POWER | 4 |
| PRMB_L2 | B+ POWER | 4 |
| PRM_A | PWR RLY MOD A | |
| PRM_A1 | PRM OUTPUT | 4 |
| PRM_A2 | PRM SIGNAL | 4 |
| PRM_B1 | PRM SIGNAL | 4 |
| PRM_C1 | PRM SIGNAL | 4 |
| PRM_D | PWR RLY MOD D | |
| PRM_D1 | PRM OUTPUT | 4 |
| PRM_D2 | PRM SIGNAL | 4 |
| PSS | SEC STR PRES SWITCH | 11 |
| PVRES | JSS JOYSTICK | 13 |
| PXT | RTD | 10 |
| PXH | HGT_CNTRL-RTT | 10 |
| PXM | RTD | 10 |
| PXT | RTD | 10 |
| P_A1 | B+ POWER | 4 |
| P_A3 | B+ POWER | 4 |
| P_C1 | B+ PWR FRM PRMD | 4 |
| P_C2 | B+ PWR FRM PRMD | 4 |
| P_C3 | B+ PWR FRM PRMD | 4 |
| P_C4 | B+ PWR FRM PRMD | 4 |
| P_C6 | B+ PWR FRM PRMD | 4 |
| R1 | RESISTOR | 13 |
| RAD | RADIO_POWER | 12 |
| RAD_J1 | RADIO_POWER | 12 |
| RAD_J2 | SPEAKER | 12 |
| RAD_J3 | RADIO_JUMPER | 12 |
| RECT | ENG_COOL_TEMP | 9 |
| RFL | FUEL_SENDER | 9 |
| RFLG | FUEL_SEND_GRND | 9 |
| RFL_23 | FUEL_LEVEL_SEND | 9 |
| ROOF | ROOF TO CAB CONNECTION | 7, 11, 12 |
| RSPK | RIGHT_SPEAKER | 12 |
| RTHP | THROTTLE_PEDAL | 5 |
| RVS_DIODE | DIODE ASSY | 13 |
| RWM | REAR_WIPER_MTR | 11 |
| RWMG | REAR_WIPER_MTR_GD | 11 |
| RWW | REAR_WASHER | 11 |
| SAJ | FNR_SWITCH | 13 |
| SBE | BEACON_SW | 7 |
| SBU | BACK-UP_ALRM_DIS_SW | 6 |
| SC | SEAT_COMP_MOTOR | 12 |
| SDA | DIFF_LOCK_SWITCH | 8 |
| SDC | DECLUTCH_SWITCH | 8 |
| SDM | DIFF_LOCK SWITCH | 8 |
| SDR | DRIVING_LIGHTS_SW | 6 |
| SFC | FAN_CONTROL_SW | 10 |
| SFL | RETURN_TO_TRAVEL_SW | 10 |
| SFNR | FNR_SWITCH | 8 |
| SFWW | FRONT WIPER/WASHER | 11 |
| SHC | HEIGHT CONTROL SW | 10 |
| SHZ | HAZARD_SWITCH | 6 |
| SJ3 | JOYSTICK_CONTROL_SW | 13 |
| SPB | PARKING_BRAKE_SWITCH | 9 |
| SPC | PILOT_CONTROL_SWITCH | 10 |
| SPE | PIN_ENGAGE_SW | 10 |
| SPK | SPEAKER | 12 |
| SPL_2 | ULTRASONIC | 11 |
| SPL_3 | ULTRASONIC | 11 |
| SPL_12V | ULTRASONIC | 12 |
| SPL_19S | ULTRASONIC | 11 |
| SPL_35A | ULTRASONIC | 6 |
| SPL_42C | ULTRASONIC | 1 |
| SPL_A1 | ULTRASONIC | 10 |
| SPL_A2 | ULTRASONIC | 10 |
| SPL_A3 | ULTRASONIC | 10 |
| SPL_A4 | ULTRASONIC | 9 |
| SPL_A1A | ULTRASONIC | 6 |
| SPL_AC | ULTRASONIC | 12 |



### CONNECTOR LIST

| NAME | DESCRIPTION | SHEET |
|---|---|---|
| SPL_ACC | ULTRASONIC | 4 |
| SPL_ACP | ULTRASONIC | 12 |
| SPL_ACS | ULTRASONIC | 12 |
| SPL_AJ | ULTRASONIC | 13 |
| SPL_ALT | ULTRASONIC | 4 |
| SPL_AP | ULTRASONIC | 9 |
| SPL_BB | ULTRASONIC | 6 |
| SPL_BCK_LGT | SPLICE_BACK LGHT PWR | 7 |
| SPL_BCK_LGT2 | SPL_BACK LGT PWR | 10 |
| SPL_BCK_LT_GD | SPL_BACK LGHT GD | 7 |
| SPL_BCK_LT_GD2 | SPL_BACK LGT GRND | 10 |
| SPL_BLWR | ULTRASONIC | 12 |
| SPL_BUZ | ULTRASONIC | 9 |
| SPL_C3 | ULTRASONIC | 11 |
| SPL_CAN | ULTRASONIC | 12 |
| SPL_CAN_DH | ULTRASONIC | 5 |
| SPL_CAN_DIAG | ULTRASONIC | 12 |
| SPL_CAN_DIAG_L | ULTRASONIC | 12 |
| SPL_CAN_DL | ULTRASONIC | 5 |
| SPL_CAN_GH | ULTRASONIC | 5 |
| SPL_CAN_GL | ULTRASONIC | 5 |
| SPL_CAN_HT | ULTRASONIC | 5 |
| SPL_CAN_HV | ULTRASONIC | 5 |
| SPL_CAN_JS_H1 | ULTRASONIC | 12 |
| SPL_CAN_JS_H2 | ULTRASONIC | 12 |
| SPL_CAN_JS_L1 | ULTRASONIC | 12 |
| SPL_CAN_JS_L2 | ULTRASONIC | 12 |
| SPL_CAN_L | ULTRASONIC | 12 |
| SPL_CAN_LT | ULTRASONIC | 5 |
| SPL_CAN_LV | ULTRASONIC | 5 |
| SPL_CAN_TEL | ULTRASONIC | 12 |
| SPL_CAN_TEL2 | ULTRASONIC | 12 |
| SPL_CAN_TRANS | ULTRASONIC | 12 |
| SPL_CAN_TRANS_L | ULTRASONIC | 12 |
| SPL_CNV | ULTRASONIC | 12 |
| SPL_CR | ULTRASONIC | 4 |
| SPL_CRK | ULTRASONIC | 4 |
| SPL_D1 | ULTRASONIC | 10 |
| SPL_D11 | ULTRASONIC | 8 |
| SPL_D12 | ULTRASONIC | 8 |
| SPL_D15 | ULTRASONIC | 8 |
| SPL_D16 | ULTRASONIC | 8 |
| SPL_D17 | ULTRASONIC | 8 |
| SPL_D19 | ULTRASONIC | 8 |
| SPL_DZ4 | ULTRASONIC | 10 |
| SPL_DZ5 | ULTRASONIC | 10 |
| SPL_DZ6 | ULTRASONIC | 10 |
| SPL_DB_C1 | ULTRASONIC | 6 |
| SPL_DC | ULTRASONIC | 8 |
| SPL_DCUG | ULTRASONIC | 5 |
| SPL_DLY3 | ULTRASONIC | 9 |
| SPL_DR | ULTRASOIC | 6 |
| SPL_EDC1 | ULTRASONIC | 5 |
| SPL_EDC2 | ULTRASONIC | 5 |
| SPL_EDC3 | ULTRASONIC | 5 |
| SPL_EDC4 | ULTRASONIC | 5 |
| SPL_ENG | ULTRASONIC | 11 |
| SPL_FAN | ULTRASONIC | 10 |
| SPL_FLSHR_PWR | ULTRASONIC | 6 |
| SPL_FNR | ULTRASONIC | 8 |
| SPL_FW | ULTRASONIC | 11 |
| SPL_H1 | ULTRASONIC | 8 |
| SPL_H2 | ULTRASONIC | 8 |
| SPL_HB | ULTRASONIC | 6 |
| SPL_HC | ULTRASONIC | 11 |
| SPL_HOOD | ULTRASONIC | 11 |
| SPL_HOOD_GRND | HOOD GRND 6PCK | 11 |
| SPL_HRN | ULTRASONIC | 10 |
| SPL_HTR | ULTRASONIC | 4 |
| SPL_J1 | ULTRASONIC | 6 |
| SPL_J2_N | ULTRASONIC | 6 |
| SPL_JSS_1 | ULTRASONIC | 13 |

### CONNECTOR LIST

| NAME | DESCRIPTION | SHEET |
|---|---|---|
| SPL_JSS_2 | ULTRASONIC | 13 |
| SPL_JSS_3 | ULTRASONIC | 13 |
| SPL_JSS_4 | ULTRASONIC | 13 |
| SPL_JSS_5 | ULTRASONIC | 13 |
| SPL_JSS_6 | ULTRASONIC | 13 |
| SPL_JSS_7 | ULTRASONIC | 13 |
| SPL_JSS_9 | ULTRASONIC | 13 |
| SPL_JSS_10 | ULTRASONIC | 13 |
| SPL_JSS_11 | ULTRASONIC | 13 |
| SPL_JSS_13 | ULTRASONIC | 13 |
| SPL_JSS_14 | ULTRASONIC | 13 |
| SPL_JSS_15 | ULTRASONIC | 13 |
| SPL_JSS_16 | ULTRASONIC | 13 |
| SPL_JSS_17 | ULTRASONIC | 13 |
| SPL_JSS_18 | ULTRASONIC | 13 |
| SPL_JSS_20 | ULTRASONIC | 13 |
| SPL_JSS_21 | ULTRASONIC | 13 |
| SPL_LB | ULTRASONIC | 6 |
| SPL_LT | ULTRASONIC | 7 |
| SPL_NEU | ULTRASONIC | 4 |
| SPL_PBS | ULTRASONIC | 9 |
| SPL_PED_BL | SPL BACK LGT PWR 6 PCK | 10 |
| SPL_PED_BL_GD | SPL BACK LGT GD 6PCK | 10 |
| SPL_PIN | SPL_BACK LGT PWR | 10 |
| SPL_PINE | ULTRASONIC | 10 |
| SPL_PK1 | SPLICE 3-4WAY | 7 |
| SPL_PK3 | SPLICE 3-4WAY | 6 |
| SPL_POS | ULTRASONIC | 6 |
| SPL_POS_L | ULTRASONIC | 6 |
| SPL_POS_NA | ULTRASONIC | 6 |
| SPL_POS_R | ULTRASONIC | 6 |
| SPL_PR | ULTRASONIC | 6 |
| SPL_PTM | ULTRASONIC | 9 |
| SPL_RAD | ULTRASONIC | 12 |
| SPL_RD | ULTRASONIC | 9 |
| SPL_ROOF | SPLICE ROOF GROUND | 7 |
| SPL_RTT | ULTRASONIC | 10 |
| SPL_RWW | ULTRASONIC | 11 |
| SPL_SD1 | ULTRASONIC | 4 |
| SPL_SD2 | ULTRASONIC | 4 |
| SPL_SD3 | ULTRASONIC | 4 |
| SPL_SEC | ULTRASONIC | 11 |
| SPL_SS | ULTRASONIC | 11 |
| SPL_SW_PD | ULTRASONIC | 9 |
| SPL_TRNS_PWR | TRANS_PWR | 8 |
| SPL_WHS | ULTRASONIC | 11 |
| SPL_WK | ULTRASONIC | 7 |
| SPL_WL | ULTRASONIC | 7 |
| SPL_WL1 | ULTRASONIC | 7 |
| SPL_WLS | ULTRASONIC | 11 |
| SPL_WR | ULTRASONIC | 7 |
| SPL_WRK1 | ULTRASONIC | 7 |
| SPL_WRK2 | ULTRASONIC | 7 |
| SPL_WRKF | ULTRASONIC | 7 |
| SPL_WRKR | ULTRASONIC | 7 |
| SRC | RIDE_CONTROL_SW | 10 |
| SRC_1 | RELAY | 4 |
| SRHSTLK | RH STALK SWITCH | 6 |
| SRP | WORK LIGHTS SW | 4 |
| SRTD | DETENT_SWITCH | 10 |
| SRWP | REAR_WIPER_SW | 11 |
| SSD | SEC_STR_DIODE | 11 |
| SSM | SEC STR MOD | 11 |
| SSS | SS MAG SWITCH | 11 |
| SS_TR | SS_MOD-TRANS | 11 |
| STA | TRANS_AUTO_SW | 8 |
| STE | TRANS_ENABLE_SW | 8 |
| STTR_GRN | GRID_HTR_FUSE | 4 |
| SWL | WORK LIGHTS SW | 7 |
| S_KEY | IGNITION_SWITCH | 4 |
| TCOT | TCO_SENDER | 8 |
| TECM | TRANS | 8 |

### CONNECTOR LIST

| NAME | DESCRIPTION | SHEET |
|---|---|---|
| TEL | TELEMATICS | 12 |
| TERM_CAN_2 | CAN BULK HEAD | 5 |
| THV | TANK HEATER CONTROL VALVE | 5 |
| TRANS | TRANSMISSION-CAB | 8,9,11 |
| TRC | TRANS_CONTROL | 8 |
| TR_SS | SEC_STR_MOD_OPT | 11 |
| TS1 | TRANSMISSION_SHIFTER | 8 |
| TS2 | TRANSMISSION_SHIFTER | 8 |
| TSS | TURB_SPEED_SENS | 8 |
| TURBO | ENG DASH_TURBO | 5 |
| UBJ | DEF LEVEL TEMP | 5 |
| UBJM | DEF LEVEL TEMP | 5 |
| UTS | UPSTREAM TEMP SENSE | 5 |
| WIF | WATER_IN_FUEL_SNSR | 5 |
| WSH | WATER_SEP_HTR | 4 |
| YDL | DIFF LOCK SOLENOID | 8 |
| YDL_1 | DIFF LOCK SOLENOID | 8 |
| YDL_2 | DIFF LOCK SOLENOID | 8 |
| YFN | FAN_PWM_SOL | 10 |
| YFR | FAN_REV_SOL_OPT | 10 |
| YLS | TC_LOCKUP_VALVE | 8 |
| YPB | PARK_BRK_SOL | 9 |
| YPE | PIN ENGAGE JUMPER | 10 |
| YPE1 | PIN ENGAGE JUMPER | 10 |
| YPE2 | PIN_ENGAGE_OPT | 10 |
| YPP | PILOT_PRES_SOL | 10 |
| YRC | RIDE_CONTROL_OPT | 10 |
| YRC_J | RIDE_CNTRL_JUMPER | 10 |
| YRC_J2 | RIDE_CONTROL_OPT | 10 |
| YSS | SEC_STRG_SOL | 11 |
| S4_S | | 14 |








ELECTRICAL SCHEMATIC — SIDE 1

721F, 821F, 921F TIER 4 WHEEL LOADER

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