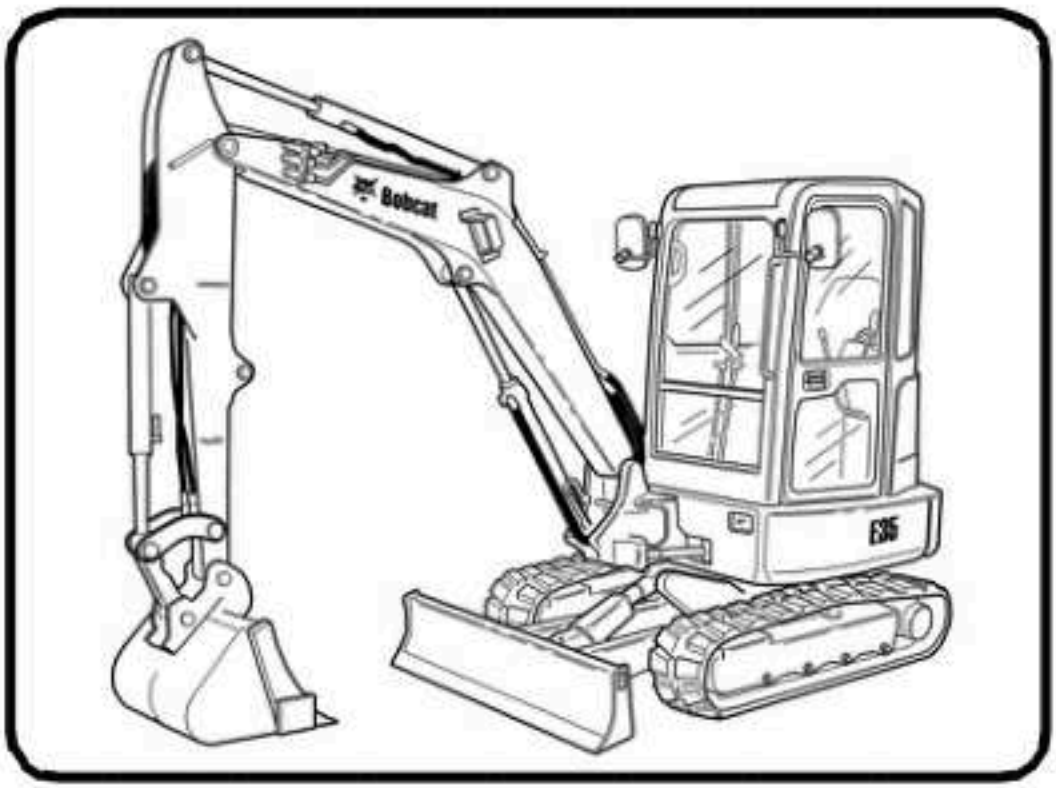
Bobcat®

Service Manual
E35 Compact Excavator

S/N A93K11001 & Above
S/N AC2P11001 & Above



6987276 (2-11)

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REMOTE START TOOL-MEL1563 (CONT'D)

Service Tool Harness Communicator - MEL1566

NOTE: To monitor, diagnose or load new software the Service PC must be connected to the Remote Start Tool.

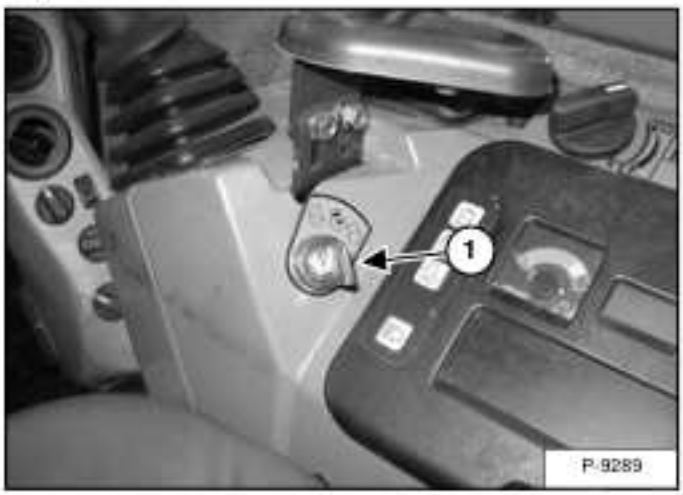
Figure 10-220-6



The service tool harness communicator (Item 1) **[Figure 10-220-6]** is required to connect the Service PC to the remote start tool.

Key Switch

Figure 10-220-7



Turn the key (Item 1) **[Figure 10-220-7]** to the RUN position on the excavator.

NOTE: DO NOT start the excavator.

Figure 10-220-8



Turn the key (Item 1) **[Figure 10-220-8]** to the RUN position on the remote start tool.

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ELECTRICAL SYSTEM INFORMATION

Troubleshooting Chart

The following troubleshooting chart is provided for assistance in locating and correcting problems which are most common. Many of the recommended procedures must be done by authorized Bobcat service personnel only.

⚠ WARNING

AVOID INJURY OR DEATH

Instructions are necessary before operating or servicing machine. Read and understand the Operation & Maintenance Manual, Operator's Handbook and signs (decals) on machine. Follow warnings and instructions in the manuals when making repairs, adjustments or servicing. Check for correct function after adjustments, repairs or service. Untrained operators and failure to follow instructions can cause injury or death.

W-2003-0807

PROBLEM	CAUSE
Battery will not take charge.	1, 2, 3, 4, 5
Alternator will not charge.	1, 2, 5
Starter will not turn engine.	2, 3, 4, 6, 7, 8, 9

KEY TO CORRECT THE CAUSE
1. Alternator belt is loose or damaged.
2. Battery connections are dirty or loose.
3. Battery is damaged.
4. The ground connection is not making a good contact.
5. The alternator is damaged.
6. The engine is locked.
7. The starter is damaged.
8. The wiring or the solenoid is damaged.
9. Check the fuses.

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Engine

Make / Model	Kubota V1803-M-DI-E3B-BC-3
Fuel / Cooling	Diesel / Liquid
Horsepower (SAE Net) @ 2400 rpm	23,1 Kw (31.0 hp)
Torque @ 1400 rpm (SAE Net)	
Number Of Cylinders	3
Displacement	1,862 L (111.4 in^3)
Bore / Stroke	87 x 102,4 mm (3.43 x 4.03 in)
Lubrication	Pressure System with Filter
Crankcase Ventilation	Closed Breathing
Air Cleaner	Dry replaceable paper dual cartridge
Ignition	Diesel - Compression
Low Idle Speed S/N A93K11001 - A93K11274 S/N AC2P11001 - AC2P11124	1125 ± 75 rpm
Low Idle Speed S/N A93K11275 & Above S/N AC2P11125 & Above	975 ± 75 rpm
High Idle Speed	2650 rpm
Engine Coolant	Propylene Glycol / water mixture (53% PG / 47% water)

Hydraulic System

Pump Type	Engine driven, single outlet, variable displacement, load sensing, torque limited, piston pump
Pump Capacity Piston Pump Gear Pump - Pilot	 100,8 L/min (26.6 U.S. gpm) 9,6 L/min (2.5 U.S. gpm)
Auxiliary Flow (Aux3)	63,9 L/min (16.9 U.S. gpm)
Auxiliary Flow - 2nd Aux (Female coupler) (Male Coupler)	 20,3 L/min (5.4 U.S. gpm) 15,0 L/min (4.0 U.S. gpm)
Hydraulic Filter	Full flow replaceable, 3 micron synthetic media element
Control Valve	9 spool closed center individually compensated
System Relief Pressure Slew Circuit Boom, Boom Swing Bucket, Arm, Auxiliary Blade Joystick Control Pressure	 14700 kPa (216 bar) (2132 psi) 24476 kPa (245 bar) (3550 psi) 24476 kPa (245 bar) (3550 psi) 24476 kPa (245 bar) (3550 psi) 2999 kPa (30 bar) (435 psi)
Auxiliary Relief	20595 kPa (206 bar) (2987 psi)
Arm Port Relief Base And Rod End	27000 kPa (270 bar) (3916 psi)
Boom Port Relief Base End And Rod End	 28999 kPa (290 bar) (4206 psi)
Bucket Port Relief Base End And Rod End	 27000 kPa (270 bar) (3916 psi)
Blade Port Relief Base End	27000 kPa (270 bar) (3916 psi)
Angle Blade (If Equipped) Port Relief Base End And Rod End	 27000 kPa (270 bar) (3916 psi)
Main Hydraulic Filter Bypass	345 kPa (3,5 bar) (50 psi)
Case Drain	138 kPa (1,4 bar) (20 psi)

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E35 HYDRAULIC/HYDROSTATIC SCHEMATIC
S/N A93K11001 AND ABOVE

(PRINTED FEBRUARY 2011)
V-1346legend

LEGEND

1. HYDRAULIC RESERVOIR: Pressurized with Fill Strainer
   Reservoir Capacity (at Site Gauge) . . . . . 9,5 L (10.0 qt)
   System Capacity . . . . 22,7 L (24.0 qt)
2. PRESSURIZED BREATHER/FILL CAP with FILTER:
   41,4 kPa (0,41 bar) (6 psi) – Outlet
   4,1 kPa (0,04 bar) (0.6 psi) - Inlet
3. HYDRAULIC FILTER ELEMENT
   15 Micron
4. FILTER BY-PASS
   345 kPa (3.44 bar) (50 psi))
5. CASE DRAIN FILTER - with By-Pass
   Element - 40 Micron
   By-Pass – 124 – 159 kPa (1,2 – 1,6 bar) (18 - 23 psi)
6. PRESSURE SWITCH - Hydraulic
7. HYDRAULIC PISTON PUMP . . . . . .
   100,8 L/min (26.6 gpm) at High Engine RPM
8. ON STROKE PISTIONn
9. PUMP MARGIN SPOOL -
   1400 kPa (14 bar) (203 psi)
10. TORQUE LIMITER
11. DESTROKE PISTON
12. ORIFICE- Fine Control: 0,6 mm (0.102 in)
13. ORIFICE – PC: 0,6 mm (0.041 in)
14. HYDRAULIC GEAR PUMP
    9,5 L/min (2.5 gpm) at High Engine RPM
15. PRESSURE SWITCH – Motion Alarm (If Equipped)
16. SHUTTLE VALVE – Motion Alarm (If Equipped)
17. PRESSURE REDUCING VALVE
    2999 kPa (30 bar) (435 psi)
18. CHECK VALVE - Accumulator
19. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE – Boom Offset / Secondary Auxiliary Hydraulics – If Equipped)
20. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE – Boom Offset / Secondary Auxiliary Hydraulics – If Equipped)
21. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - Two Speed
22. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - Work group Lockout
23. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - Male Coupler
24. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - Female Coupler
25. ACCUMULATOR
26. MAIN RELIEF VALVE
    24497 kPa (245 bar) (3553 psi)
27. PRESSURE SENSOR – Auto Idle
28. FILTER – Control Valve
29. ORIFICE - 0,4 mm (0.016 in)
30. COMPENSATOR
31. PORT RELIEF VALVE (With Anti-Cavitation) - (BUCKET Cylinder) 27000 kPa (270 bar) (3916 psi)
32. PORT RELIEF VALVE (With Anti-Cavitation) - (BUCKET Cylinder) 27000 kPa (270 bar) (3916 psi)
33. PORT RELIEF VALVE (With Anti-Cavitation) - (ARM Cylinder) 27000 kPa (270 bar) (3916 psi)
34. PORT RELIEF VALVE (With Anti-Cavitation) - (ARM Cylinder) 27000 kPa (270 bar) (3916 psi)
35. PORT RELIEF VALVE - (With Anti-Cavitation Valve) - (Auxiliary Pressure Port: 20684 kPa (206 bar) (3000 psi)
36. PORT RELIEF VALVE (With Anti-Cavitation Valve) - (Auxiliary Return Port: 20684 kPa (206 bar) (3000 psi)
37. PORT RELIEF VALVE (With Anti-Cavitation) - (Boom Cylinder) 27000 kPa (270 bar) (3916 psi)
38. PORT RELIEF VALVE (With Anti-Cavitation) - (Boom Cylinder) 27000 kPa (270 bar) (3916 psi)
39. PORT RELIEF VALVE (With Anti-Cavitation) - (Bucket Cylinder) 27000 kPa (270 bar) (3916 psi)
40. SHUTTLE VALVE
41. FLUSHING VALVE: 2503 kPa (25 bar) (363 psi)
42. UNLOAD ORIFICE: 0,7mm (0.028 in)
43. ORIFICE – Load Sense - 1,5 mm (0.059 in)
44. CHECK VALVE: 310 kPa (3,1 bar) (45 psi)
45. CHECK VALVE: 414 kPa (4,2 bar) (60 psi)
46. DRIVE MOTOR SHUTTLE - With restrictors
47. VALVE - 2 -Speed / Auto Shift
48. PISTON – Two Speed (2)
49. CROSSPORT RELIEF VALVE (Ramp Pressure Increasing Type):
    Set @: 21594 kPa (216 Bar) (3132 psi)
    Crack Pressure: 18602 kPa (186 Bar) (2698 psi)
50. ANTI-CAVITATION VALVE (2)
51. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE - Sequence Valve
52. TIMER VALVE: 2503 kPa (25 Bar) (363 psi)
53. ORIFICE - 0,4 mm (0.016 in)
54. CHECK VALVE – Brake Release
55. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE - Second Auxiliary (Optional)
56. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - Second Auxiliary (2) (Optional)
57. PORT RELIEF VALVE (With Anti-Cavitation Valve) - (Secondary Auxiliary)
    17926 kPa (179 bar) (2600 psi)
58. PORT RELIEF VALVE (With Anti-Cavitation Valve) - (Secondary Auxiliary)
    17926 kPa (179 bar) (2600 psi)
59. TEST PORT - "JP3" PORT - Pressure Reducing Valve
60. FACTORY FILL PORT
61. ANTI-DRIFT VALVE
62. TEST PORT
63. ORIFICE – Straight Travel 0,8 mm (0.31 in)
64. FILTER – Hydraulic X-Change Valve
65. ORIFICE - 1,78 mm (0.070 in)
66. CHECK VALVE – Load Sense
67. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE (TWO COIL)
68. CHECK VALVE
69. PORT RELIEF VALVE (With Anti-Cavitation Valve) - (Angle Blade) 3916 PSI (270 bar)
70. PORT RELIEF VALVE (With Anti-Cavitation Valve) - (Angle Blade) 3916 PSI (270 bar)
71. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE – Angle Blade (Optional)
72. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE – Angle Blade (Optional)
73. CHECK VALVE
74. DIFFERENTIAL PRESSURE SWITCH:
    276 kPa (2,76 bar) (40 psi)
    Normally Closed

NOTE: Unless otherwise specified springs have NO significant pressure value.

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