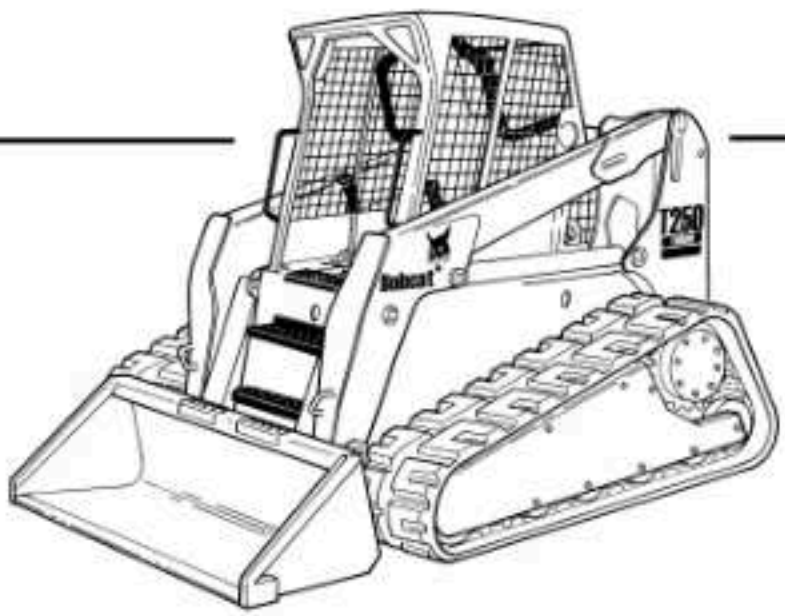
T250
TURBO

T250
TURBO
HIGH FLOW

Bobcat®

Service Manual

S/N 525611001 & Above
S/N 525711001 & Above



EQUIPPED WITH
BOBCAT INTERLOCK
CONTROL SYSTEM (BICS™)

6902724 (2-06)

Ingersoll Rand
Compact Vehicle Technologies
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HYDRAULIC/HYDROSTATIC SCHEMATIC
WITH HIGH FLOW OPTION
T250 (S/N 525613000 & Above)
(S/N 525712000 & Above)

(PRINTED MARCH 2005)
V-0673legend

LEGEND

1. RESERVOIR:
   Capacity . . . . . 21 qt. (19.9 L)
2. FILTER - CASE DRAIN (90 Micron)
3. FILTER - HYDRAULIC (CANISTER)
4. SPRING LOADED FILTER BYPASS VALVE: 45-55 PSI (3,1-3,8 bar)
5. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - BUCKET POSITION VALVE (ON/OFF)
6. DIFFERENTIAL PRESSURE SWITCH: 36-44 PSI (2,5-3,0 bar)
7. FLOW DIVIDER ADJUSTMENT VALVE
8. CHECK VALVE - BUCKET POSITION VALVE
9. FIXED CAPACITY DISPLACEMENT BIDIRECTIONAL HYDROSTATIC MOTOR
10. PILOTED ACTIVATED DIRECTIONAL CONTROL VALVE - FLOW CONTROL SPOOL
11. PILOTED ACTIVATED DIRECTIONAL CONTROL VALVE - UNLOADING SPOOL
12. PILOTED ACTIVATED DIRECTIONAL CONTROL VALVE - TILT CONTROL
13. PILOTED ACTIVATED DIRECTIONAL CONTROL VALVE - LIFT CONTROL
14. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - BICS CONTROL
15. PULL BUTTON ACTIVATED DIRECTIONAL CONTROL VALVE - LIFT ARM BY PASS
16. FILTER - BICS CONTROL VALVE (SCREEN)
17. FILTER - BOB-TACH VALVE
18. LOAD CHECK VALVE
19. RELIEF VALVE - MAIN:
    at Front Quick Couplers
    3250-3350 PSI (224-231 bar)
20. RELIEF/ANTICAVITATION VALVE - PORT (LIFT BASE END)
    4000 PSI (275 bar)
21. ANTICAVITATION VALVE
22. RELIEF/ANTICAVITATION VALVE - PORT (TILT BASE END)
    4000 PSI (275 bar)
23. RELIEF/ANTICAVITATION VALVE - PORT (TILT ROD END)
    4000 PSI (275 bar)
24. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - AUXILIARY
25. RELIEF/ANTICAVITATION VALVE - PORT - OPTIONAL:
    3100 PSI (214 bar)
26. RELIEF/REPLENISHING VALVE - HIGH PRESSURE: 5000 PSI (345 bar)
27. PRESSURE SWITCH
28. RELIEF VALVE - CHARGE:
    140 degrees F. (60 degrees C.)Fluid at High Engine Idle
    410 - 470 PSI (28,3 - 32,4 bar)
29. CHARGE PUMP:
    14.2 GPM (53,7 L/min) at High Engine Idle
30. HYDRAULIC PUMP . . . . . Gear Type
    21.2 GPM (80,2 L/min) at High Engine Idle
31. DRIVE MOTOR SHUTTLE VALVE
32. SHUTTLE RELIEF VALVE:
    200 PSI (13,8 bar)
33. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - Base
34. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - Rod
35. LOAD SHUTTLE VALVE - BLEED OFF
36. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE - (Two Coil)
37. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE - REAR AUXILIARY
38. ORIFICE - With 0.140 inch (3,6 mm)
39. RELIEF VALVE:
    3000 PSI (207 bar)
40. ORIFICE - With 0.031 inch (0,79 mm)
41. CHECK VALVE - BICS CONTROL VALVE
42. RESTRICTION
43. CHECK VALVE
44. FRONT AUXILIARY MANUAL PRESSURE BLEED-OFF VALVE
45. VARIABLE CAPACITY DISPLACEMENT BIDIRECTIONAL HYDROSTATIC PUMP
46. RELIEF VALVE - 2000 PSI (138 bar)
47. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE (TWO COIL)
48. RELIEF VALVE - 1200 PSI (83 bar)
49. CHECK VALVE - With 80 PSI (5,5 bar) Spring
50. CHECK VALVE - With 300 PSI (20,7 bar) Spring and 0.016 inch (0,40 mm) orifice
51. ORIFICE - With 0.025 inch (0,64 mm)
52. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE - HYDRAULIC POWERED BOB-TACH
53. FILTER - CASE DRAIN (ATTACHMENT)
54. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - BRAKE
55. HYDRAULIC BRAKE - SPRING APPLIED - PRESSURE RELEASE
56. ORIFICE - With 0.089 inch (2,26 mm)
57. AUXILIARY HYDRAULIC PUMP

    S/N 525613000 - 525613399
    S/N 525712000 - 525712099
    10.5 GPM (39,7 L/min) at High Engine Idle

    S/N 525613400 & Above
    S/N 525712100 & Above
    18.7 GPM (70,8 L/min) at High Engine Idle
58. RELIEF VALVE - PORT:
    3300 PSI (228 bar)
59. DUMP VALVE - ON/OFF
60. CHECK VALVE

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

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SPEED SENSOR (SELECTABLE JOYSTICK CONTROL) (SJC)

Testing

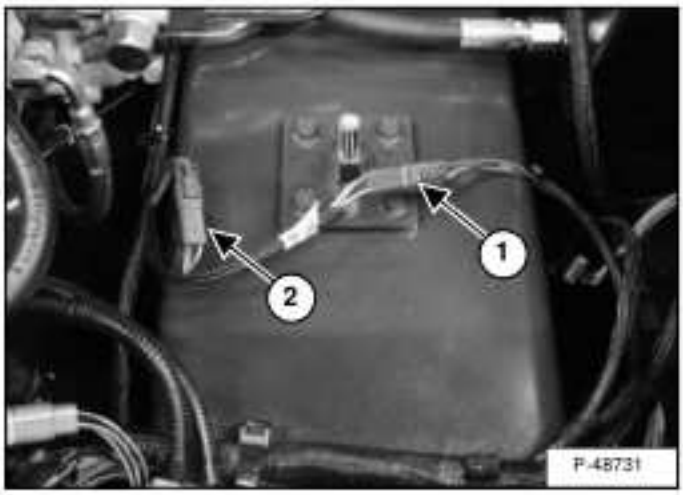
Figure 60-80-1



The tools listed will be needed to do the following procedure:

MEL1609-RPM Speed Sensor Test Harness **[Figure 60-80-1]**
MEL1563-Remote Start Tool
Multimeter

Figure 60-80-2



Raise the lift arms and install an approved lift arm support device. (See Engaging The Lift Arm Support Device on Page 10-20-1.)

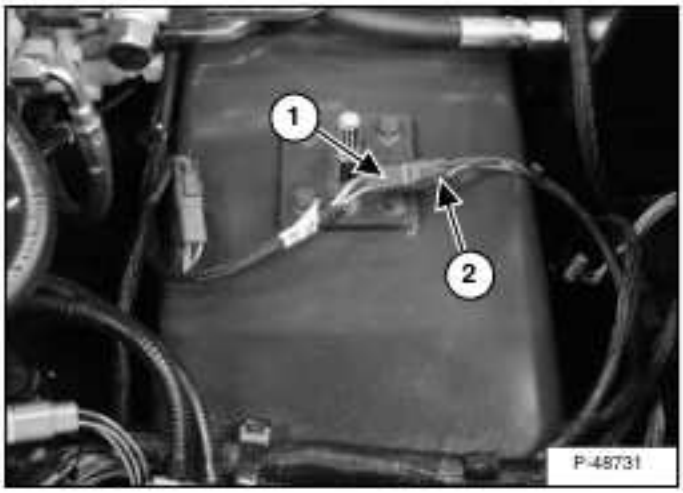
Raise the operator cab. (See Raising The Operator Cab on Page 10-30-1.)

Connect the remote start tool to the loader. (See Procedure on Page 10-60-3.)

Locate the electrical connector (Item 1) **[Figure 60-80-2]** for the left RPM speed sensor.

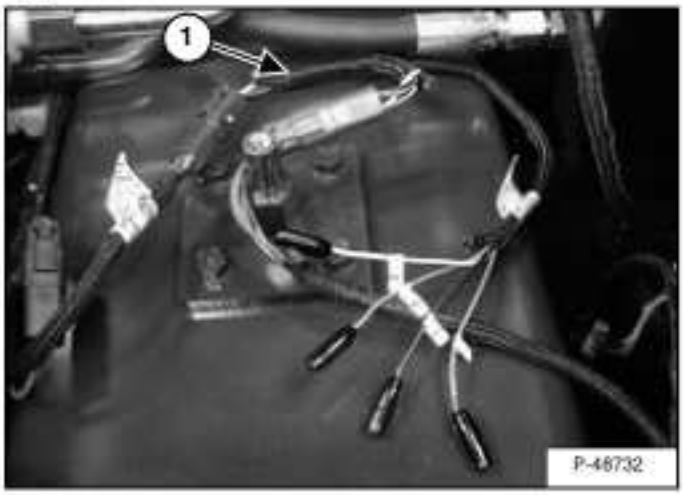
Locate the electrical connector (Item 2) **[Figure 60-80-2]** for the right RPM speed sensor.

Figure 60-80-3



Disconnect the RPM speed sensor wire connector (Item 1), from the loader harness wire connector (Item 2) **[Figure 60-80-3]**.

Figure 60-80-4



Connect the RPM speed sensor test harness (Item 1) **[Figure 60-80-4]** in line, between the loader wiring harness and the speed sensor harness.

Turn the remote start key to ON position without starting the loader.

Take a voltage reading, with the multimeter, at the speed sensor test harness, between pin 1 and pin 3 (Item 1) **[Figure 60-80-4]**.

The voltage should be 5 volts.

Repeat the procedure for the opposite side speed sensor. (If needed.)

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TROUBLESHOOTING

Chart

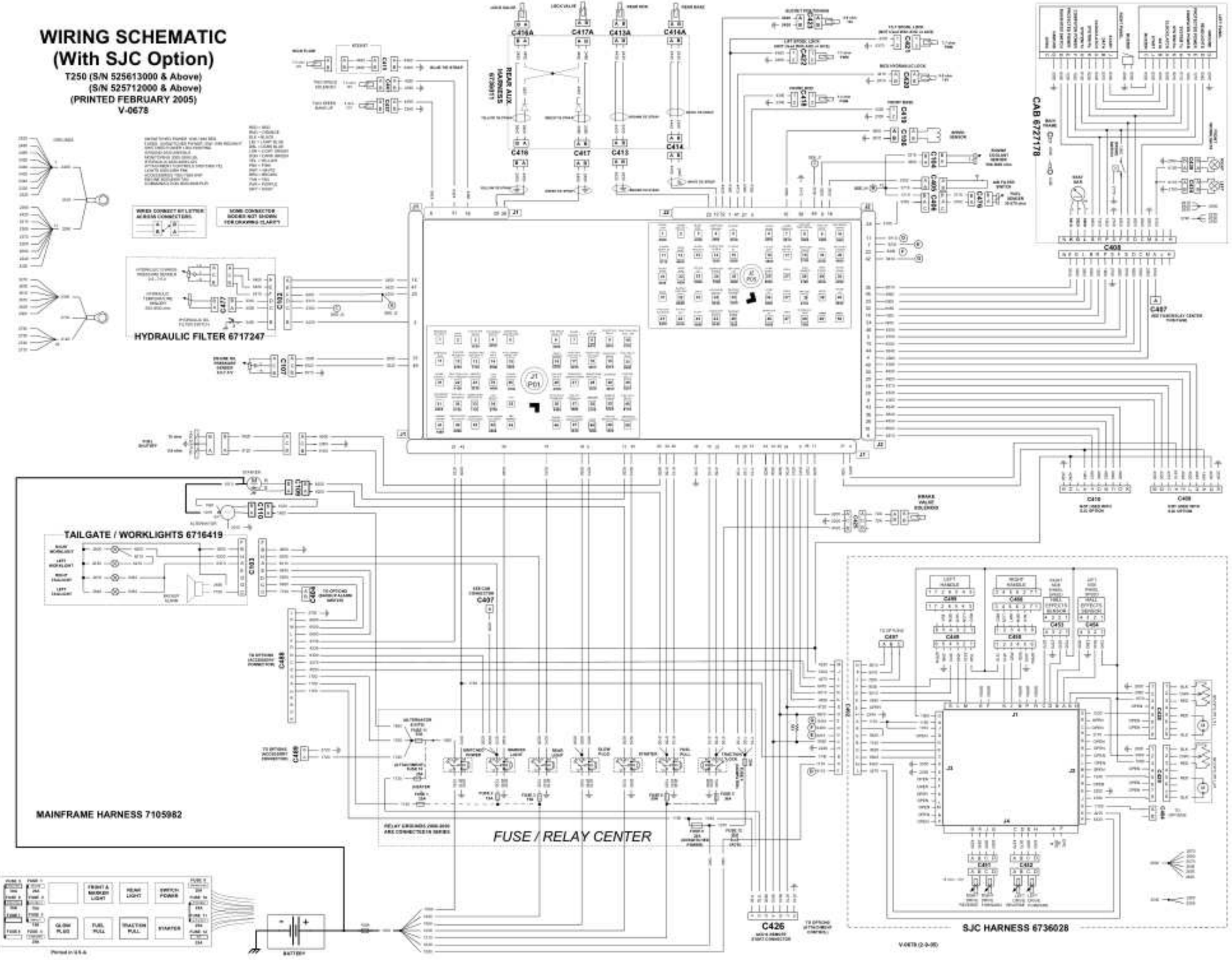
The following troubleshooting chart is provided for assistance in locating and correcting problems which are most common. Many of the recommended procedures must be done by authorized Bobcat Service Personnel only.

PROBLEM	CAUSE
Slow cranking speed.	1, 2, 3, 4
Engine will not start.	2, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 16, 17, 19, 27, 28, 29
Difficult to start.	5, 7, 8, 9, 10, 11, 12, 13, 15, 16, 17, 18, 19, 20, 25, 27, 28, 29
No power for engine.	8, 9, 10, 11, 12, 13, 15, 16, 17, 18, 20, 21, 22, 23, 27, 28, 29
Engine is mis-firing.	8, 9, 11, 12, 13, 15, 16, 17, 21, 22, 24, 25, 26, 28
Too much fuel consumption.	10, 12, 13, 15, 16, 17, 19, 20, 21, 23, 24, 25, 27, 28, 29
Black exhaust.	10, 12, 13, 15, 16, 17, 19, 20, 21, 23, 24, 25, 27, 28, 29
Blue/white exhaust.	4, 10, 15, 16, 17, 21, 23, 27, 29, 30, 46, 47
Low oil pressure.	4, 31, 32, 33, 34, 35, 37, 38, 39, 45, 48
Engine knocking.	13, 15, 16, 19, 22, 24, 25, 27, 29, 31, 40, 41, 49
Engine running rough.	7, 8, 9, 10, 11, 12, 13, 17, 18, 22, 24, 25, 26, 29, 40, 49
Vibration.	2, 13, 17, 21, 22, 25, 26, 29, 40, 42, 43
High oil pressure warning.	4, 33, 36
Overheating.	10, 12, 13, 15, 16, 20, 21, 32, 40, 44, 47
Too much crankcase pressure.	22, 27, 29, 46
Poor compression.	10, 16, 21, 24, 25, 27, 28, 29, 30, 41, 49
Start and stop.	9, 10, 11

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WIRING SCHEMATIC
(With SJC Option)

T250 (S/N 525613000 & Above)
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