

TECHNICAL UPDATES

from **TeeJet**[®]

by TeeJet Technologies

June 21, 2007

Ball Valve Motor Compatibility with Automatic Boom Section Control Systems

TeeJet Technologies recently became aware of compatibility issues related to the use of TeeJet ball valves with some GPS based automatic boom section control (ABSC) systems. Some ABSC systems can signal the boom valves to open and close at very high rates. This typically occurs on the outboard sections of the boom when overlap settings are zero or minimized. Compatibility issues have also been encountered when booms have been split into a large number of sections or when outboard sections have only a few nozzles. The high rate of on/off signals sent to the valve may even cause the valves to reverse direction in mid stroke. High cycle frequencies and/or dynamic reversal of the valve can result in excess heat buildup in the resettable fuse used in TeeJet BE and BEC ball valve actuators. The excess heat buildup causes the fuse to trip, by design, preventing damage to the electrical system. Removing power from the valves for 20 seconds resets the fuse. Returning to ABSC use may cause continued tripping of the fuses.

The engineering staff at TeeJet Technologies has developed a solution to address the compatibility issue and has produced an in-line adapter to eliminate the repeated tripping of the fuses. The 72333-CPC Adapter (pictured – figure 1) can be installed between the existing cables on the sprayer and the electrical connection on the valve motor. The 72333-CPC adapter includes an encapsulated electronic assembly. The adapter reduces the power supplied to the valve, with only a slight decrease in actuation speed. This adapter has been lab and field tested with the cooperation and participation of our direct customers and end users and found to eliminate the compatibility issue in the installations evaluated.

Note:
Optional
connectors
are
available
upon
request.

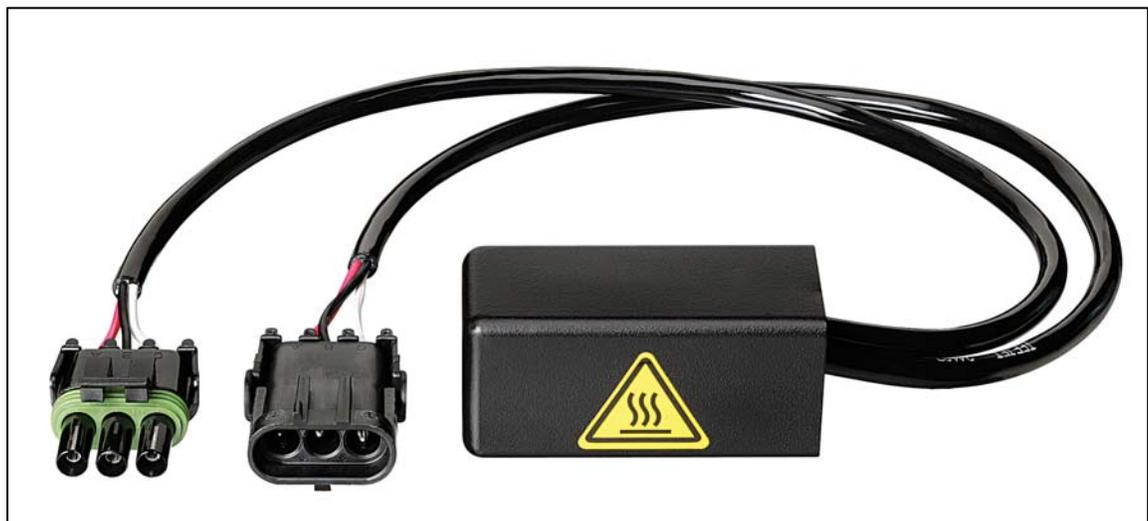


Figure 1 72333-CPC Adapter

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The 72333-CPC adapter is approximately 3 feet in length, and is provided with factory installed male and female Packard Weather Pack connectors for easy installation. The center housing of the adapter should be fastened to the sprayer to prevent strain on the electrical connections. The adapter's temperature will increase with use and it should be installed where it will be exposed to ambient air.

Applications:

- BE/BEC driven TeeJet 344/450/460/440 shut off ball valves and manifolds when ABSC systems cause frequent fuse tripping. (see figure 2)
- Not for use with regulating valves or with 346 or 356/490 product lines



Figure 2 – boom section valves and manifolds

CAUTION:

The temperature of the adapter will increase based on the signal rate provided by the ABSC system. Physical contact with the adapter should be avoided during testing or operation, and until the unit has been allowed to cool.