TRUCK-MOUNTED CENTRAL HYDRAULIC CONTROL SYSTEM CALIBRATION

PROCEDURAL STATEMENT:

Automatic central hydraulic systems mounted on dump trucks must be calibrated in a proper and consistent manner. During normal operations and maintenance, central hydraulic systems lose the accuracy with regard to calibration. This results in inaccuracies in spread rates. This procedure will be a guide for determining when and how to calibrate a hydraulic system.

AUTHORITY:

Policy 19-001(P) - EQUIPMENT ACQUISITION, MAINTENANCE, USAGE, REPLACEMENT AND DISPOSAL POLICY


REFERENCES:

Guideline on Calibration of Central Hydraulic Systems for Dump Trucks
Certified Power Freedom Series Manual
Operator’s Manual and System Calibration for 5100 and 6100 Series Controller
Muncie Advantage Plus Series Manual

SCOPE:

All District Highway Administrators, Roadway Service Managers, District Transportation Managers, County Managers, Auto Mechanics and Highway Workers.

BACKGROUND:

This procedure is to provide a standard method and criteria for when and how to calibrate a central hydraulic system.
DEFINITIONS:

Calibration: Setting the central hydraulic system with specific values so that the system operates efficiently and accurately.

Calibration Storage Key: Data storage memory system that stores the calibration values for later use.

Central Hydraulic System: This is the hydraulic system that operates all the auxiliary functions of the dump truck (i.e. plow functions, salt spreader, dump body hoist, etc.)

PROCEDURE STATEMENT:

I. WHEN TO CALIBRATE

A. A complete calibration of all automatic central hydraulic systems mounted in dump trucks must be performed at least once a year, in the fall, prior to or during the County’s Dry-Run.

B. If a control box is exchanged with another control box, a complete calibration of the central hydraulic system must be performed.

C. During the winter season, the auger fault section should be calibrated every month.

D. If the auger motor is replaced with a new motor of the same type and size, the auger fault section must be calibrated.

E. If the auger motor is replaced with a new motor of a different type and size, the auger fault and auger rate sections must be calibrated.

F. If the auger is replaced with a new auger, both the auger fault and auger rate sections must be calibrated.

II. METHODS OF CALIBRATION

A. Manual Calibration

1. This is the primary method for calibrating a central hydraulic system. This method forces all the system’s components to work properly. It will help to identify mechanical or electrical problems that exist in the central hydraulic system.

2. Refer to the Guideline on Calibration of Central Hydraulic Systems for Dump Trucks or the central hydraulic system’s manufacturer’s technical manuals on calibration.
B. Computers/Calibration Storage Keys

1. Calibration values may be downloaded into a computer or calibration storage key after a manual calibration is performed.
2. Calibration of central hydraulic systems through the use of a computer or calibration storage key should be limited to systems where the original manual calibration is only one month old. After calibrating through the use of a computer or calibration storage key, the auger fault section must be calibrated manually.

TRAINING:

County Mechanics must be trained how to properly calibrate a dump truck’s central hydraulic system. County Managers, Transportation Managers, County Mechanics, and County Operators must be trained how to recognize central hydraulic systems that are not properly calibrated.

FISCAL ANALYSIS:

Implementation of this procedure will have a fiscal impact upon the Department dependent on salt usage rates. Trucks that have systems improperly calibrated will use more or less salt dependent on their original settings. This will result in a more accurate applications of material during snow events which will result a more efficient process for snow and ice control. Eliminating waste by proper calibration could result in saving millions of dollars per year.