

APPLICATION PROFILE

AGRICULTURAL EQUIPMENT

Mobile Hydraulics

Challenge: **FERTILIZATION MANURE HOSE REEL**

Location: **MINNESOTA**

A Flodraulic's North American Hydraulic (NAHI) group was called upon by a manufacturer of manure hose reels to improve upon system operation and efficiency of their existing design.

The previous circuit was built around a small hydraulic motor driving a gearbox that ultimately drove the hose reel through a chain reduction.

NAHI provided a Black Bruin BB6 motor to drive the manure hose reel through a chain reduction. With the Black Bruin motor's large displacement and ability to freewheel, we were able to remove a gearbox / clutch system and improve efficiency by reducing energy transfer without sacrificing machine performance. Not only was inefficiency removed, the overall system package size and fit was reduced.

NAHI equipment is powering a hose reel that winding on and off one mile of eight inch manure hose for fertilization purposes. Approximate torque at the motor is 7,000ft.-lbs. at 2,900psi. Speed is 22rpm at 30gpm. Hydrocontrol valves were chosen to control the direction of the motor and to shift the motor to freewheel mode.

NAHI personnel evaluated the application and specified the appropriate size motor based on torque requirements to do the work. NAHI performed extensive machine testing and data acquisition on site with the customer to validate the design and provide a baseline for performance to be used in future designs/troubleshooting.



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