CUSTOMIZED MUST PUMP INSTALLED TO PREVENT HARVEST PROCESSING DOWNTIME

PUMP CASE STUDY

Castoro Cellars

Templeton, California

New Pump System

CUSTOMER APPLICATION AND KEY CHALLENGES

Castoro Cellars began as a small family venture producing a few barrels of wine for family and friends, but over the last two decades has added staff, equipment, facilities and vineyards to blossom into a custom crush operation producing about 60,000 cases of wine per year.

One of the problem areas for the winery processing has been their MUST Pump. MUST consists of the skins, seeds and juice of freshly crushed and destemmed grapes. Sitting below the crusher/ destemmer the MUST pump transfers product to the fementation tanks or presses.

The metal rotary lobe pumps being used by the winery were consistently getting jammed and required the entire line to stop while an operator disassembled, cleared, reset and restarted the pump. After three harvest seasons with these exasperating pumps, Castoro Cellars was seeking a more efficient option.

Castoro Cellars amidst vibrant fall foilage

THE R.F. MACDONALD CO. ANALYSIS & SOLUTION

R.F. MacDonald Co. reviewed the problems with the existing MUST pump before designing and developing a customized Seepex Progressive Cavity Pump Model BT1306L. This particular pump contains a metal rotor with a rubber stator that can flex and compress when it encounters solid material that would have jammed the previous equipment. A 40 HP right angle gear motor and a custom made auger helps to continuously convey the solid product into the pump cavity.

The pump also featured a custom-made open hopper to provide an efficient recepticle from a Delta8 Crusher, capable of processing up to 80 tons of material per hour, which is about 320 gallons per minute. On average the winery pumps about 15,000 tons per year through their MUST pump, and has been averaging 3-4 years between stator changeouts.

The variable frequency drive is able to adjust the speed of the pump based on the level of the material in the hopper. The pump is automatically controlled but also features a remote speed pot that allows the operator to use a hand-held device to control the speed, stop the pump in emergencies and even reverse the direction to clear any jams downstream.

Seepex Pump below the Delta8 Crusher transferring grape MUST to fermentation tanks

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Fermenting tanks that receive product from the pump

An integral dry-run sensor thermal couple was included to detect a temperature increase that would occur at the stator/rotor interface in the event of a dry run condition. The temperature increase triggers the sensor and the pump automatically turns off to prevent any damage to the internals.

The entire pump system was mounted on a wheeled cart so the winery could easily move the assembly to the shop for maintenance and repairs, as well as store the system during off harvest seasons.

"The Seepex pump along with the quality and speed of the R.F. MacDonald service when the pump requires any type of part or service is truly unsurpassed. When we replacaed our metal lobe pumps with the Seepex our jamming issues were eliminated"


Final installation of the Seepex Pump below the Delta8 Crusher