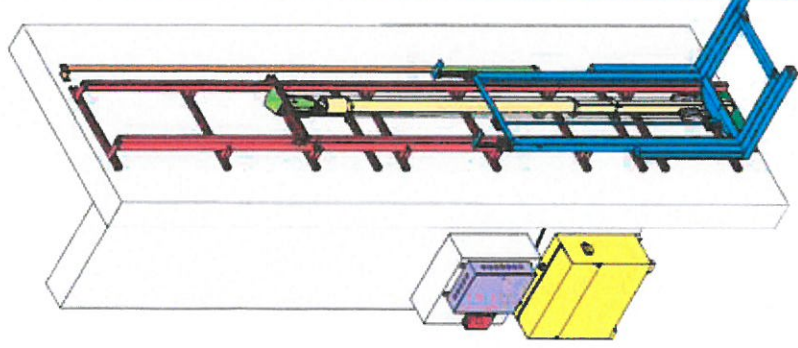


# Competition – Holeless Roped Hydraulic



Source: [www.waupacaelevator.com](http://www.waupacaelevator.com)

## Strengths

- Equipment cost is in the mid-range (not the cheapest but not the most expensive)
- Many manufacturers to choose from
- Smooth quiet ride when adjusted properly
- Avoids the problems with traditional hydraulic units where larger travel is quite expensive
- A holeless option avoids having to drill a large hole in the earth and potential corrosion of the hydraulic cylinder
- Machine room on lowest floor typically for easy access

## Weaknesses

- Performance can become erratic as hydraulic fluid temperature varies.
- Holeless Option actually intensifies the heat concern
- Motor power is 2-3 times greater for hydraulic in comparison to Traction
- Total Energy Use is higher
- Machine Room adds initial costs and can eat up useful SQFT
- A hydraulic elevator produces a great deal of heat - this can affect your cooling bill and home comfort in warmer climates or during the summer
- Variable usage patterns can cause accelerated fluid degradation
- Still requires an 8in pit - even with current technology
- 2 - 4X higher service and maintenance costs over 10 years
- Hydraulic fluid will leak over time and often leads to some smell in a home
- Still utilizes a cable as well as hydraulics - so has the disadvantages of both



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# RAM Crystal Traction

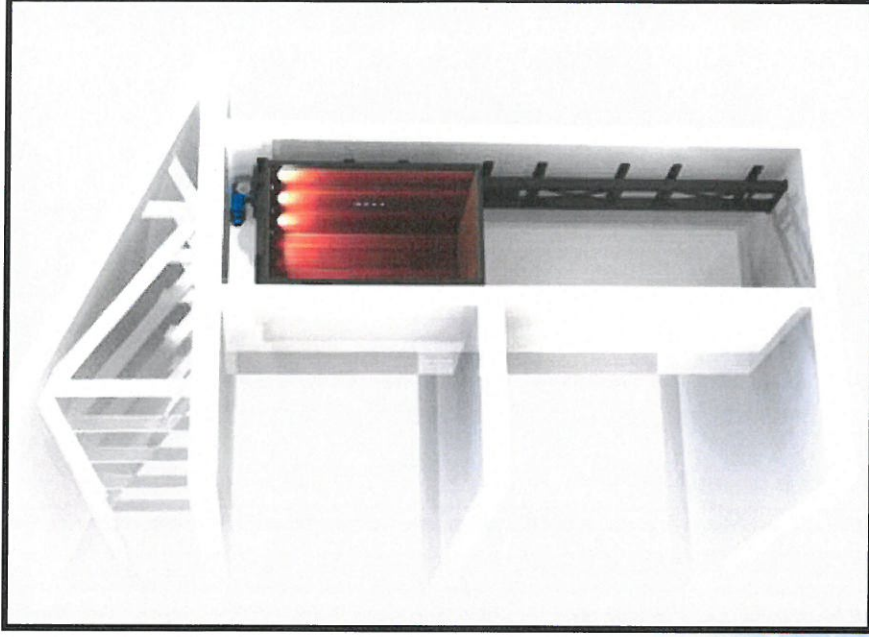


## Strengths

- Lower power than hydraulic or winding drum
- Avoids hydraulic fluid leakage issues
- Low maintenance - and low cost of maintenance
- No Machine Room
- No pit required
- No hydraulic leaks or smells over the life of the elevator
- Similarly Quiet when compared to a hydraulic option
- Soft start up with variable frequency drive
- Low standby power
- Can provide Auto Lowering - similar to a roped hydraulic - on some units

## Weaknesses

- Typically higher cost for the equipment only
- Access to motor at top of hoistway
- Access to manual crank is at the top landing



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