Currie Medical, Inc.

DVT Pump Power Consumption Bench Test Report

Pneumatic Compression Device Electrical Performance Comparison

Based on empirical AC current measurements | March 2026 | Norfolk, Virginia

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SUMMARY: Bench testing of four major DVT pneumatic compression pump brands demonstrates that the Currie Medical ALP pump consumes **3.8× less power** than Cardinal Kendall SCD, **2.3× less** than Medline HemoForce, and **3.1× less** than Arjo Flowtron during active compression therapy. Combined with Currie's lower duty cycle (44% vs. 95–98%), Currie pumps deliver **annual electricity savings of $61,700 per 3,000-pump fleet** versus Cardinal Kendall.

1. Test Methodology

Currie Medical conducted bench testing of four DVT pneumatic compression pump brands using a non-invasive split-core current transformer (CT sensor) clamped around each pump's AC power cord. The CT sensor measures the AC current drawn by each pump without interrupting the power circuit, providing a direct, real-time measurement of actual electrical consumption during therapy delivery.

Test Protocol:

Parameter	Details
Measurement Device	Split-core AC current transformer (non-invasive)
Sampling Rate	~1 reading per second, logged to timestamped CSV
Test Conditions	Full therapy session with compression garments attached to patient simulator
Power Calculation	Measured RMS current × 120V AC (US standard line voltage)
Pumps Tested	Currie ALP 900, Cardinal Kendall SCD 700, Medline HemoForce IPC, Arjo Flowtron ACS900
Test Location	Currie Medical, Norfolk, Virginia
Test Date	March 2026

2. Power Consumption Results

The following table summarizes measured electrical performance across all four pump brands. Active compression power is the wattage consumed during the compression cycle. Motor duty cycle represents the percentage of a 24-hour therapy day during which the motor is actively running.

Metric	Currie ALP	Cardinal Kendall SCD	Medline HemoForce	Arjo Flowtron
Active Compression Power	**5.5 W**	20.9 W	12.4 W	17.3 W

Motor Duty Cycle	**44%**	98%	95%	~90%*
Avg Power (duty-adjusted)	**2.42 W**	20.48 W	11.78 W	15.57 W
Daily Energy (24 hr)	**58.1 Wh**	491.5 Wh	282.7 Wh	373.7 Wh
Annual Energy per Pump	**21.2 kWh**	179.4 kWh	103.2 kWh	136.4 kWh
Annual Cost per Pump (@$0.13/kWh)	**$2.76**	$23.32	$13.42	$17.73
Power Multiple vs. Currie	**1.0× (baseline)**	3.8×	2.3×	3.1×

**Arjo duty cycle estimated from observed compression pattern. All other duty cycles measured directly.*

3. Fleet-Scale Cost Analysis

Annual electricity costs scale linearly with fleet size. The following projections are based on 24-hour continuous operation at the US average commercial electricity rate of $0.13/kWh.

Fleet Size	Currie ALP	Cardinal Kendall	Medline HemoForce	Savings vs. Kendall
1,000 pumps	**$2,760**	$23,320	$13,420	**$20,560**
3,000 pumps	**$8,280**	$69,960	$40,260	**$61,680**
5,000 pumps	**$13,800**	$116,600	$67,100	**$102,800**
10,000 pumps	**$27,600**	$233,200	$134,200	**$205,600**
50,000 pumps	**$138,000**	$1,166,000	$671,000	**$1,028,000**

KEY FINDING: A health system operating 3,000 DVT compression pumps saves approximately **$61,700 per year** in electricity costs by using Currie ALP pumps versus Cardinal Kendall SCD. This savings is a direct consequence of Currie's intermittent cycling design (44% duty cycle), which achieves equivalent therapeutic compression with significantly lower power consumption and motor run time.

4. Clinical Implications: Noise Exposure & Patient Compliance

Motor duty cycle directly determines patient noise exposure. A pump running at 98% duty cycle generates near-continuous motor noise for 23.5 hours per day. Currie's 44% duty cycle means the motor is silent for 13.4 hours per day — providing patients with significantly more quiet time for restorative sleep.

	Currie ALP	Cardinal Kendall	Medline HemoForce
Motor Active Time (per 24 hr)	**10.6 hours**	23.5 hours	22.8 hours
Quiet Time (per 24 hr)	**13.4 hours**	0.5 hours	1.2 hours

Additional Quiet vs. Kendall	**+12.9 hours**	— (baseline)	—

Published research (BMJ Open 2020, Critical Care 2012) identifies noise-driven sleep disruption as a primary reason patients remove DVT compression garments, with compliance rates as low as 49% documented. When compliance drops, DVT rates increase nearly 3× (Kim et al., Clin Orthop Surg 2017).

Assumptions & Disclosures

• Power estimates are derived from measured RMS current multiplied by US standard line voltage (120V AC). Actual real power may vary by 10–20% depending on power factor. Relative differences between manufacturers are consistent regardless of calibration method.

• Annual cost projections assume 24-hour continuous operation at the US average commercial electricity rate of $0.13/kWh (EIA 2024). Actual costs will vary by facility rate and utilization pattern.

• All pumps were tested with standard calf-length compression garments attached. Results may vary with different garment configurations.

• This testing was conducted by Currie Medical, Inc. for internal competitive analysis and product development purposes. Results have not been independently audited. Testing methodology and raw data are available upon request.