



Dedicated To
Helping You Hit
Your Targets

Air Cylinder VS. Electric Cylinder Financial Comparison



Costs That Can Be Calculated For Initial Installation

Air	Cost over year 1	Cost over year 1	Electric Actuation with RoboCylinder
Air Cylinder Cost	\$100.00	\$1,200.00	RoboCylinder (Average Cost)
Piping, Wiring, Fittings, etc.	\$150.00	\$150.00	Mount Controller, wire I/O, etc.
Approval For Air Cylinders	\$0.00	\$250.00	May Need approval for electric actuators, motors
Pneumatic Circuit Design	\$150.00	\$150.00	Electric Circuit Design-E-Stops etc.
Pneumatic Circuit Design & Safety Approval	\$250.00	\$250.00	Electric Circuit Design Approval
Mounting Stands-Heavy Duty Required	\$250.00	\$250.00	Mounting Stands-Lighter Duty Can Be Used
Air Line Drip Tube & mounting	\$0.00	\$0.00	Not needed
Sensors, Cords, Shocks, Flow Controls, Tubing	\$380.00	\$0.00	Not needed
FRL, Quick-Exhaust (May or may not come into play)	\$30.00	\$0.00	Not needed
Debug Costs-Setting flow controls, stops, shocks...	\$250.00	\$250.00	Minimal adjustment if any
Risk of stroke change requirement	\$30.00	\$0.00	If stroke changes, we just program a new point
Subtotal:	\$1,590.00	\$2,500.00	

Costs For Installation of Machine on Customers Floor

Air Drop	\$100.00	\$0.00	Power will be there anyway
Debug Costs-Setting flow controls, stops, shocks with the customers air supply that is probably different	\$100.00	\$0.00	Total control can shorten debug time and get you new machine producing parts faster, moving up payback time
Subtotal:	\$200.00	\$0.00	

Running Costs Of Machine

Lubrication usually needed	\$30.00	\$0.00	No Maintenance
Dryer	\$50.00	\$0.00	Not needed
Seals and or spares	\$50.00	\$0.00	Not needed
Labor to repair air leaks	\$100.00	\$0.00	Not needed
High usage cost for compressed air	\$91.00	\$15.00	Low energy costs of running cylinder. Can run RoboCylinders on low voltage 24V, 2 amp power. SAVING UP TO 90% OF YOUR ENERGY COSTS
Labor for re-tuning and system adjustments	\$200.00	\$0.00	Not needed
Subtotal:	\$521.00	\$15.00	

Final Cost Analysis

Cost for first year	\$2,311.00	\$2,515.00	
Costs for next 3 years	\$1,563.00	\$45.00	
Cost for life of 4 year project	\$3,874.00	\$2,560.00	
Residual Value	\$0.00	(\$400.00)	Can be used for another project
Net Cost	\$3,874.00	\$2,160.00	

Costs / Considerations that cannot be easily calculated

Continued tweaking of air cylinders. Controls for cylinders are accessible to operators, maintenance crew to make changes that can help or hurt the system	\$50.00	\$0.00	No changes in performance due to changes in air, etc.
Inconsistent motion due to many factors like air leaks, temperature variation, humidity, pressure fluctuations, seals	\$100.00	(\$100.00)	Consistent motion can actually yield more production
Inflexibility in control can lengthen cycle time due to waiting for full stroke before next motion can happen, more sensors may need to be added, slamming can cause other problems with other processes.	\$100.00	(\$100.00)	Flexibility in programming and communication modes can offer faster cycle times without Chaotic motion
Checking fasteners, stops, mounting for loosening due to uncontrolled motion	\$50.00	\$0.00	No slamming loosening things up or breaking things reduces maintenance requirements and unexpected break-downs
Part damage or tooling damage possible due to chaotic motion	\$25.00	\$0.00	Gentle on parts since the motion is smooth may require less tooling and support
Recovery from E-Stop can be slower since all has to be "Homed" before restarting	\$25.00	\$0.00	Restart from E-Stop can be simplified since encoder is active and no homing is required, if power is maintained

Other Costs Possibly Related (Unquantifiable)

Noisy			Quiet
Possible Safety issue with stored energy			Safe - no stored energy- can have instant Stop with no stored energy with RoboCylinder
-New regulation regarding exhaust air emitted into the air?			No air contamination
No position feedback or quality check possible			P-Zone or Zone output can signal position clear or not. All the standard programmable functions can yield additional quality verifications

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