KV / SKV Vertical Inline Pumps

Taco KV Series Vertical Inline Pumps meet the latest standards for hydraulic performance and dimensional characteristics. Now available with SelfSensing Series with ProBalance®, ECM motor options and eLink™.

Optimized Efficiency Oe
Featuring **ECM** Technology

SelfSensing Series
WITH ProBalance®

eLink™
Taco Connectivity

Taco Comfort Solutions®
A Taco Family Company

©Taco Catalog #300-1.2B
Supersedes: 05/24/17

Effective Date: 04/06/18
Printed in USA

KV Series Details

Quiet, dependable power. Proven performance. Taco's extensive line of vertical inline pumps are designed for optimum performance and ease of installation. Doing your job once means doing it right...with pumps made by the world leader in hydronic technology for heating and cooling. Each pump we sell is backed by Taco's reputation for quality and dependability, and engineered for years of trouble-free service.

Space Saving Design Taco vertical inline pumps require no isolation pads. Their simplified in-the-line design saves you time and money.

Back Pull-Out Design Should a service call or maintenance ever be required, our pumps pull out from the back. There's no need to disconnect the pump from the piping system to work on it.

Close Coupled Design Each vertical inline pump features Taco's close coupled design for improved alignment and increased seal life. The bottom line? Fewer service calls.

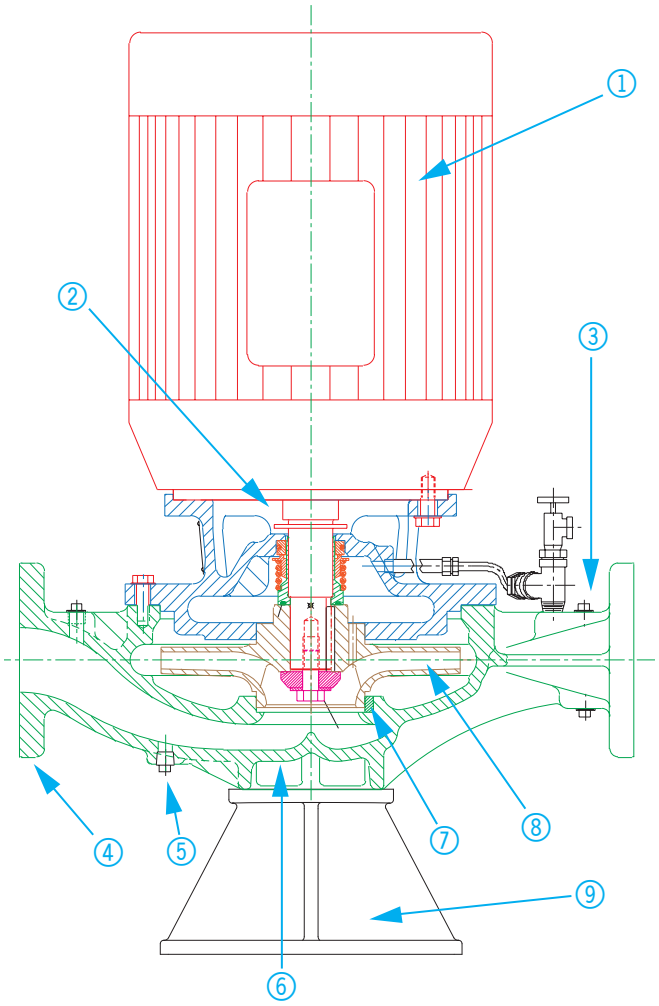
Lower Installed Cost Because of the way we've engineered our pumps, they require less time to install, and require no special tools or hardware.

Replaceable casing wear ring, pump support bracket are all value added options.

We've got you covered With flows ranging up to 2500 GPM and heads up to 300' TDH, Taco can do the job.

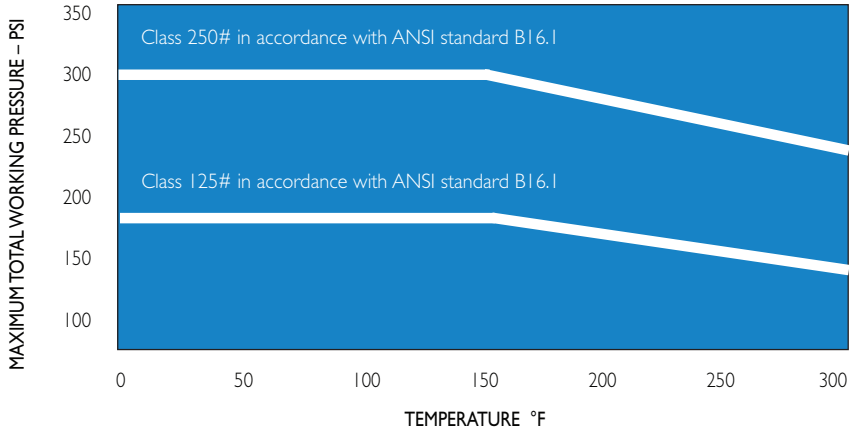
Support Stand These optional support stands, made of rugged ductile iron, can be added to all KV pump models. The already small footprint of KV pumps in tight mechanical rooms is further enhanced with the support stand's easy access bolt holes. Now installation and maintenance is that much easier.

① Standard NEMA JM Motor.
② Standard seal design allows for flexibility of seal options.
③ Pressure tapping on suction and discharge for easy verification of pump performance.



④ 250# flanges available
⑤ Casing drain
⑥ Machined mounting surface with tapped holes
⑦ Low cost replaceable optional wear ring available
⑧ High efficiency impellers standard on all models
⑨ Support Stand

Pressure Temperature Ratings



OPERATING SPECIFICATIONS		
	Standard	Optional
Flange	ANSI Class 125*	ANSI Class 250*
Pressure	175 PSIG* 1210 KPA	300 PSIG* 2070 KPA
Temperature	250°F 120°C**	250°F 102°C**

** Per Pressure Temperature Ratings chart above.*

ADDITIONAL OPTIONS	
Filters	Cuno 5 Micron
Separators	Kynar Cyclone Separator

Materials of Construction

	BRONZE FITTED			NSF 61		
	STANDARD PUMP CONSTRUCTION		OPTIONAL 125# or 250#	STANDARD PUMP CONSTRUCTION		OPTIONAL 125# or 250#
	125# Flange	250# Flange		125# Flange	250# Flange	
Casing	Cast Iron ASTM A48/ A48M-03 Class 30A	Ductile Iron ASTM A536-84 Grade 65-45-12	N/A	Cast Iron ASTM A48/ A48M-03 Class 30A	Ductile Iron ASTM A536-84 Grade 65-45-12	N/A
Impeller	Bronze ASTM B584 ALLOY C83600 or C84400	Bronze ASTM B584 ALLOY C83600 or C84400	N/A	Stainless Steel ASTM A351/A 351M-08	Stainless Steel ASTM A351/A 351M-08	N/A
Wear Ring	N/A	N/A	Bronze ASTM B584-98A C92200	N/A	N/A	Bronze ASTM B584-98A C92200
Shaft	Stainless Steel TYPE 416"T" ASTM A582	Stainless Steel TYPE 416"T" ASTM A582	N/A	Stainless Steel TYPE 416"T" ASTM A582	Stainless Steel TYPE 416"T" ASTM A582	N/A
Coupling	Aluminum Alloy 6061-T6	Aluminum Alloy 6061-T6	Stainless Steel TYPE 303 ASTM A276	Aluminum Alloy 6061-T6	Bronze ASTM B584-98A C92200	N/A
Mechanical Seal	Ceramic/EPT	Ceramic/EPT	Tungsten Carbide/EPT or Silicon-Carbide/EPT	Ceramic/EPT	Ceramic/EPT	N/A
Seal Flush Line Assembly	Copper & Brass C3600	Copper & Brass C3600	N/A	Copper & Brass C3600	Copper & Brass C3600	N/A

N/A = Not Available

Support Documentation

Typical Specification

Furnish and install centrifugal in-line single stage pump(s) with capacities and characteristics as shown on the plans. The design must permit easy replacement of the mechanical shaft seal without removal of the motor.

Pumps shall be Taco Model KV or approved equal.

Pump volute or casings shall be constructed of class 30 cast iron. The pump casing shall have equal suction and charge ports. The pump casing shall be drilled and tapped for gauge ports at both the suction and discharge connections and for drain port at the bottom of the casing. The pump shall be capable of being serviced without disturbing the system piping. The impeller shall be bronze and hydraulically balanced by either back vanes or balancing holes. The impeller shall be dynamically balanced to ANSI Grade G6.3 and shall befitted to the shaft with a key.

The pump cover shall be machined to provide a balance chamber from the close tolerance between the back impeller hub and the cover. The cover shall be fitted with a bronze throttle brushing as standard. The cover shall be designed to provide maximum flexibility of mechanical shaft seals and flush glands.

The pump seal shall be EPT Ceramic rated to 250 degrees F**. Optional seat materials and elastomers are available. The pump shall have a factory installed vent/flush line to ensure removal of trapped air and mechanical seal cooling. The vent/flush line shall run from seal chamber to the pump discharge. Extended seal life can be accomplished with an optional filter or sediment separator, which can be incorporated in the vent/flush line.

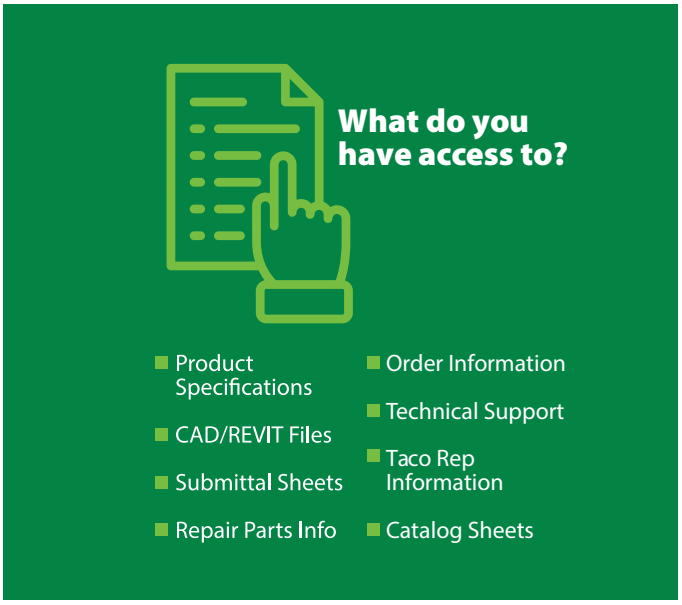
The pump shall be coupled to a NEMA rated motor designed for continuous operation and readily removable for servicing. The pump shaft shall be of stainless steel and incorporate a suitable internal seal. The pump and motor shaft must be connected with circular keys capable of transmitting axial loads to the motor bearings. The motor shall be connected to the pump shaft through a high tensile aluminum spit style coupling.

eLink™ Taco Connectivity

Taco Tags use the power of NFC technology to provide users with all the relevant documents for a specific product, right on their phone. Your digital document library will always be accessible with the most up to date documentation and product information for that specific piece of equipment.

Utilizing the power of Taco Tags to provide you with all of your documentation needs, Taco is ensuring our user base is informed to take control of their equipment.

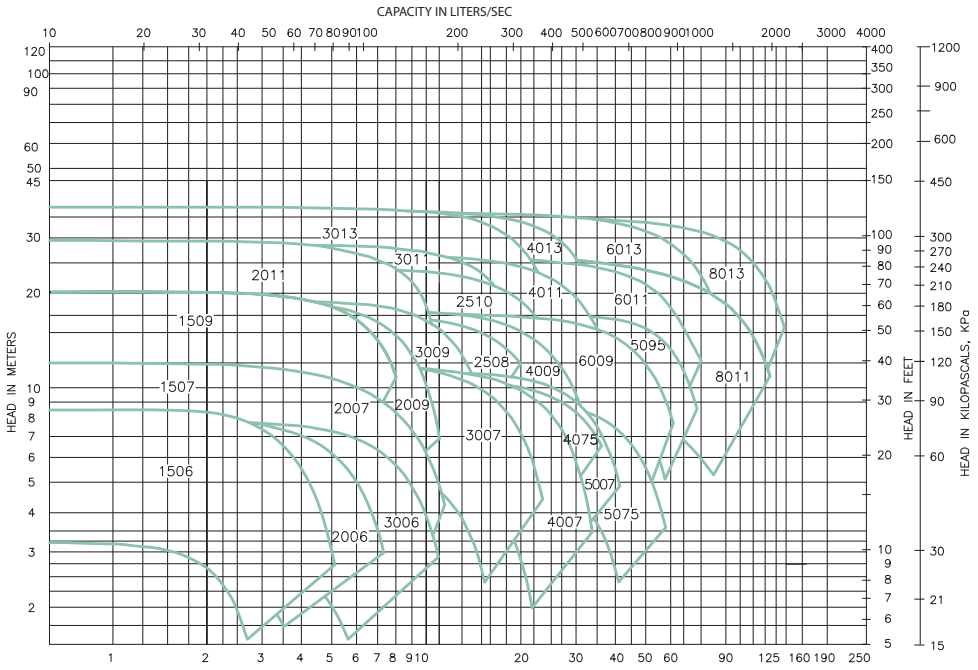
eLink provides easy access to product specs, technical documentation, instruction manuals and much more. Stay tuned as we continue to grow the eLink offerings on Taco commercial equipment.



KV Series Performance Field

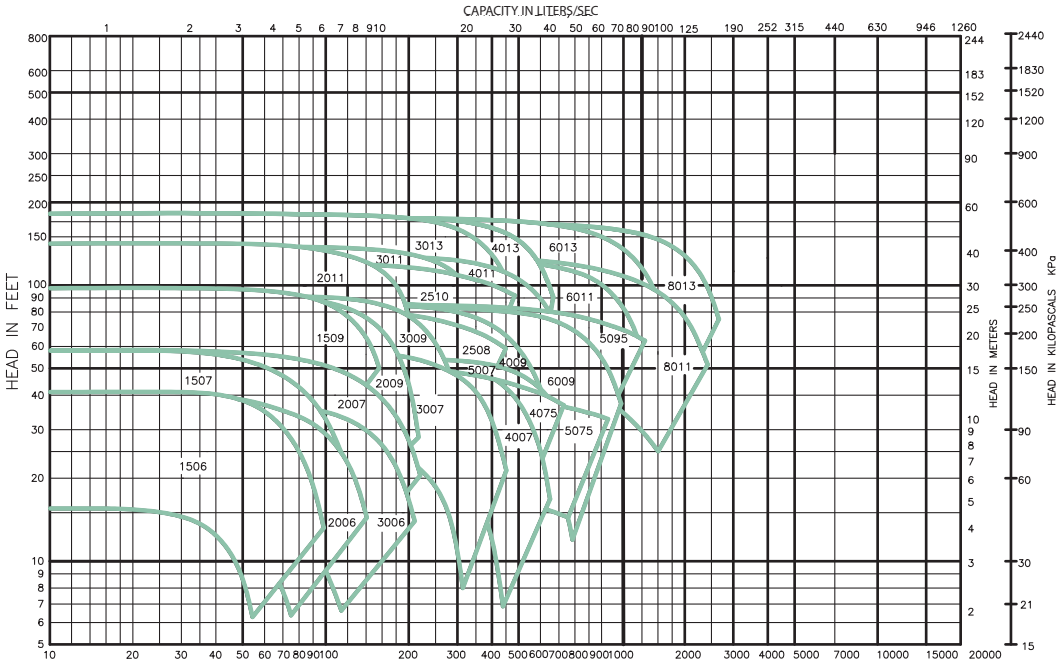
Curves also available on TacoNet.

1450 RPM



FLOW IN GALLONS PER MINUTE • **1450 RPM** • KV QUICK SELECTION CURVE

1760 RPM

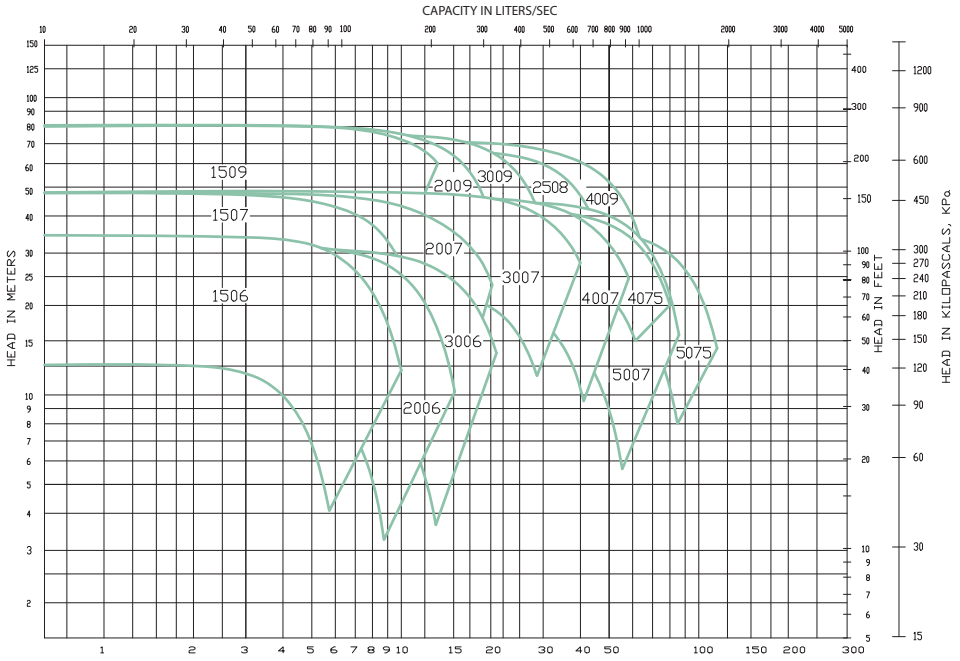


FLOW IN GALLONS PER MINUTE • **1760 RPM** • KV QUICK SELECTION CURVE

KV Series Performance Field

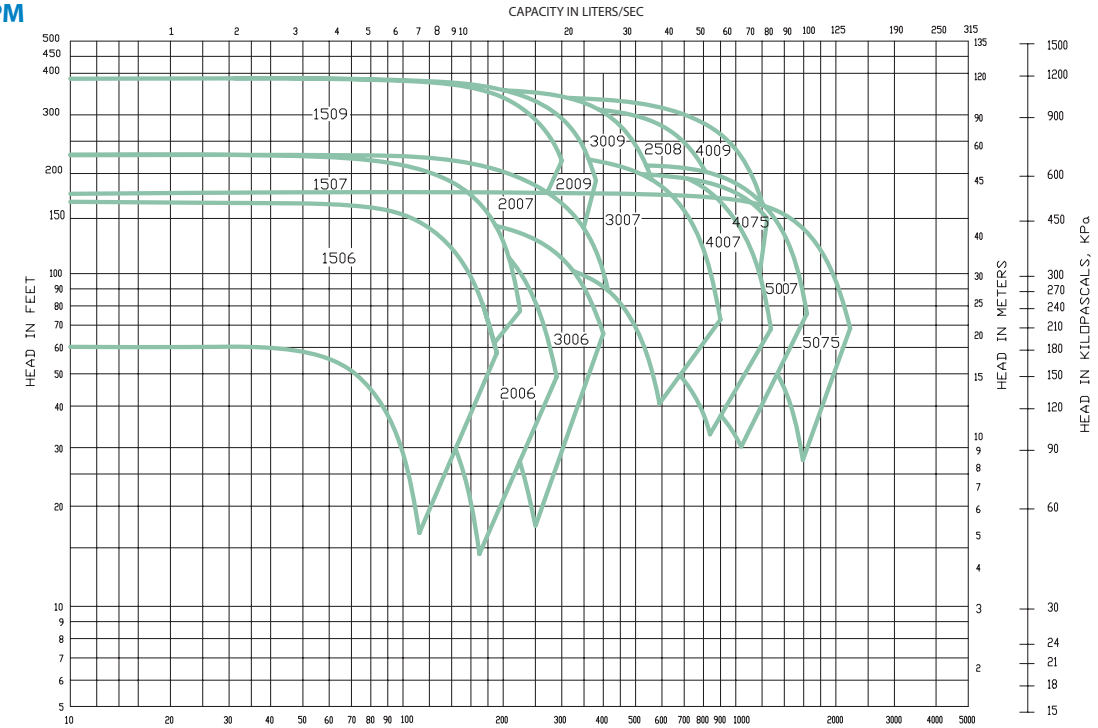
Curves also available on TacoNet.

2900 RPM



FLOW IN GALLONS PER MINUTE • **2900 RPM** • KV QUICK SELECTION CURVE

3500 RPM



FLOW IN GALLONS PER MINUTE • **3500 RPM** • KV QUICK SELECTION CURVE

SelfSensing Series WITH ProBalance®

A giant leap forward for variable speed pumping

The Self-Sensing Series with ProBalance®. At the heart is the patent pending SelfSensing ProBalance technology. The VFD's SelfSensing capabilities make fast, accurate do-it-yourself system balancing easy. Reduced balancing contractor costs, no expensive wiring, and no additional sensors required. Apply to ALL your pumping needs: both constant flow chiller/boiler pumps and secondary variable flow pumps!

- Integrated pump and drive
- Pump automatically responds to system demand changes
- No remote sensors
- No complex wiring
- Multiple modes:
  - — Constant flow
  - — Constant pressure
  - — Flow compensation
  - — Duplex pump alternation

Parallel Pumping Configuration

The SelfSensing Modulating Pump Controller (MPC) stages individual pumps in parallel configuration for best overall pumping efficiency. The MPC is capable of operating 2 to 4 pumps in parallel for maximum efficiency. The Sensorless Parallel Pump Controller provides single building automation systems connection in either BACnet MSTP or Modbus RTU and is enclosed in a NEMA 4X certified enclosure.

The ultimate in pump protection and electrical safety.

Intertek

The SelfSensing Series also features automatic alerts with optional shutdown for no-flow, dry-run, and end-of-curve operation. That means the seal is safe should someone forget to open a valve or to run the pump without water. What's more, the unit is electronically protected for overload and locked rotor conditions per UL 778 and CSA C22.2 No. 108, so the motor is protected — a real crowd pleaser for insurance companies.

Presenting DIY Balancing

Every HVAC pump needs to be balanced by an expert who must account for construction variables and safety factors. Whether constant or variable speed, the balancing process has to be addressed at commissioning and startup. But what if you could zero in on the true system resistance without inducing false head and balance the pump yourself? You can with Taco's SelfSensing ProBalance® technology.

The benefits of Do-It-Yourself balancing:

- You'll have control over your construction schedule and subcontractors
- Reduced installation costs
- You can help a LEED team get a job into their budget

What kind of savings can you expect?

Balancing a constant flow system with Taco drives saves lots of energy and increases pump life dramatically. For example, a pump that would have run at 1750 rpm @ 60hz is balanced with technology to run at 1458 rpm @50hz. Now the pump consumes 57% of the horsepower and runs 291 fewer revolutions per minute. The savings translate to 419,000 cycles per day or 150M fewer cycles very year. As a result, the pump lasts longer, requires less maintenance, and uses less energy.

To illustrate, using best practices and balancing with drives saved a Tennessee hospital $3,000 in yearly electrical costs on 100 hp chiller pumps running at 47 hz instead of 60 hz.

ProBalance® feature not available in Parallel Pumping Configuration.

High Performance Packages

Take your system to the next level with Taco's *Optimized Efficiency* Packages.

In today's environment, hydronic systems need to be up to date with the latest technology. The market is now driven towards high efficiency solutions by ever increasing regulations and environmental factors. Whether you need the best efficiency to combat high utilities or to reduce your carbon footprint, Taco has you covered.

By utilizing Permanent Magnet motor technology, Taco is bringing the largest ECMs available to the hydronic industry. In combination with our pumps, we aim to optimize your overall efficiency with the latest technology available. Don't get caught wishing you had a more efficient system, lead the charge with pumps that exceed regulations, utilize the latest technology available, and decrease total cost of ownership.

Features

Horsepower Range.....3 - 30hp

RPM 1750

Voltage Options:
3-10 HP = 230V/460V/60/3 useable at 208V, 575V/60/3
15-30 HP = 460V/60/3, 575V/60/3

Motor Enclosure Type.....3-10 hp = TENV
15-30 hp = TEFC

Drive Enclosure Options ....NEMA 1, NEMA12, NEMA4X

Benefits

- Longer service life, more uptime and higher reliability
- Increased performance, quieter & smoother operation
- Reduced lubrication frequency, resulting in lower maintenance costs
- Low operating temperature
- Flatter motor efficiency profile than the equivalent induction motor as the speed & load decline

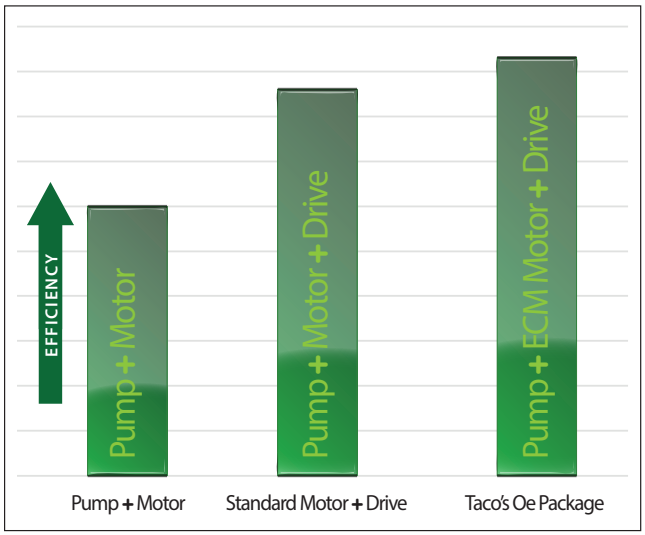
Oe Package

The Taco Oe package is designed to increase total efficiency. Taco will not only meet, but exceed the regulations passed down from the DOE. In doing so, we also deliver a complete package to our users that saves on energy and the environment.

Our Oe package is simple, we take our pump, add a Permanent Magnet motor, and top the equipment off with a drive to increase your savings at slower speeds! Taco is the first company to bring ECM technology to hydraulic pumps up to 30hp.

Oe Package including SelfSensing with ProBalance

Everything the Oe package has to offer and the added benefits of the Taco programmed SelfSensing Drives! Increase your performance with the Taco SelfSensing drives included with the Permanent Magnet motor pumps for the best energy rating Taco has to offer. The added benefits of DIY balancing will decrease the total cost of ownership over the lifetime of the pump.



A Variable Frequency Drive is required to operate the Permanent Magnet motor. The Oe package cannot be sold without a drive.

Taco Comfort Solutions®
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