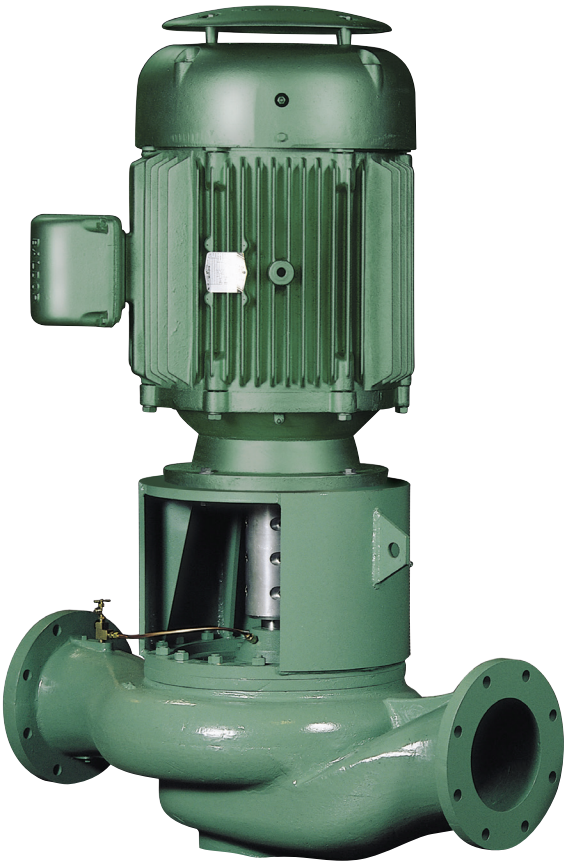
KS / SKS Vertical Split Coupled Inline Pumps

Taco Vertical Split Coupled inline pumps set a new standard in service and maintenance. Now available with SelfSensing Series with ProBalance®.



Optimized Efficiency Oe
Featuring **ECM** Technology

SelfSensing Series
WITH ProBalance®

eLink™
Taco Connectivity

Taco Comfort Solutions®
A Taco Family Company

Supersedes: 01/23/23

Effective Date: 07/03/23
Printed in USA

KS Series Details

Quiet, dependable power. Proven performance.

Taco's line of vertical split coupled inline pumps are designed for optimum performance and ease of installation and maintenance. They're ideal for HVAC and industrial applications, including pressure boosting, cooling towers, and domestic water service flows to 12,000 GPM. For quick and easy repair, the split coupler design permits changing of the seal without disturbing the motor or piping. The axial load is hydraulically balanced to increase bearing life and deliver better pump efficiencies and lower NPSH requirements. The recirculating line flushes seal faces and extends seal life, resulting in less pump downtime due to seal leaks. Optimum pump efficiency is achieved by close running impeller to casing clearances.

Other important features include:

Motor Drive is isolated from the system with the split coupler design.

Precision aluminum coupling.

High efficiency impellers standard on all sizes. Standard drilled and tapped mounting holes at base of casing.

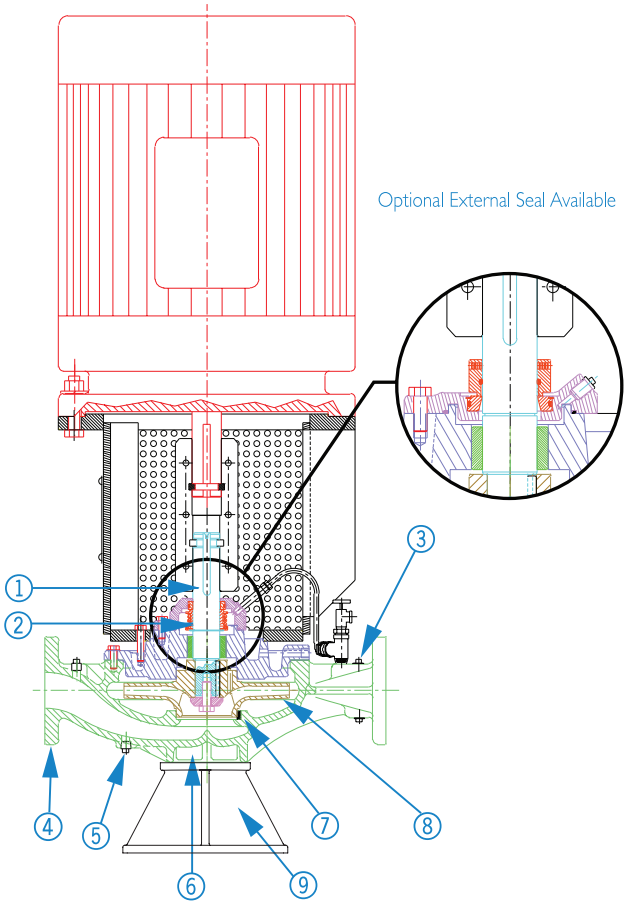
A seal flush line is standard on all models.

Throttle Bushing keeps contaminants away from the seal.

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

Support Stand These optional support stands, made of rugged ductile iron, can be added to all KS pump models. The already small footprint of KS 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.

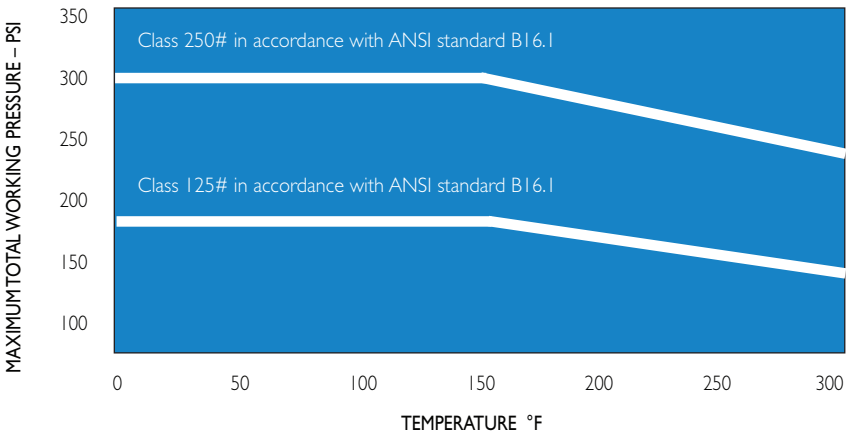
① Stainless steel pump shaft
② Standard seal design allows for flexibility of seal options.
③ Pressure tapping on suction and discharge for easy verification of pump performance.
④ 250# flanges available
⑤ Casing drain



⑥ Machined mounting surface with tapped holes
⑦ Low cost replaceable optional wear ring available
⑧ High efficiency impellers standard on all models

Commercial Hydronic Application Information

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

** For operating temperatures above 250˚F, a cooled flush is required and is recommended for temperatures above 225˚F for optimum seal life. On closed systems, insert a small heat exchanger in the flush line to cool the seal flushing fluid.

KS Pump Materials of Construction

MATERIALS OF CONSTRUCTION			CASING	COVER	IMPELLER	WEAR RING	SHAFT	COUPLING	MECHANICAL SEAL	SEAL FLUSH LINE ASSEMBLY	SUPPORT STAND
STANDARD CONSTRUCTION	BRONZE FITTED	125# FLANGE	Cast Iron ASTM A48/A48M-03 Class 30A	Cast Iron ASTM A48/A48M-03 Class 30A	Bronze ASTM B584 ALLOY C83600 or C84400	N/A	Stainless Steel TYPE 416"T" ASTM A582	Aluminum Alloy 6061-T6	Ceramic/EPT	Copper & Brass C3600	N/A
		250# FLANGE	Ductile Iron ASTM A536-84 Grade: 65-45-12	Cast Iron ASTM A48/A48M-03 Class 30A	Bronze ASTM B584 ALLOY C83600 or C84400	N/A	Stainless Steel TYPE 416"T" ASTM A582	Aluminum Alloy 6061-T6	Ceramic/EPT	Copper & Brass C3600	N/A
OPTIONAL		125# OR 250#	N/A	N/A	Stainless Steel ASTM A351/A 351M-08	Bronze ASTM B584-98A C92200	N/A	n/A	Tungsten Carbide/EPT or Silicon-Carbide/EPT	N/A	Ductile Iron ASTM A536-84 Grade 65-45-12
STANDARD CONSTRUCTION	NSF 61	125# FLANGE	Cast Iron ASTM A48/A48M-03 Class 30A	Cast Iron ASTM A48/A48M-03 Class 30A	Stainless Steel ASTM A351/A 351M-08	N/A	Stainless Steel TYPE 416"T" ASTM A582	Aluminum Alloy 6061-T6	Ceramic/EPT	Copper & Brass C3600	N/A
		250# FLANGE	Ductile Iron ASTM A536-84 Grade: 65-45-12	Cast Iron ASTM A48/A48M-03 Class 30A	Stainless Steel ASTM A351/A 351M-08	N/A	Stainless Steel TYPE 416"T" ASTM A582	Aluminum Alloy 6061-T6	Ceramic/EPT	Copper & Brass C3600	N/A
OPTIONAL		125# OR 250#	N/A	N/A	N/A	Bronze ASTM B584-98A C92200	N/A	N/A	N/A	N/A	Ductile Iron ASTM A536-84 Grade 65-45-12

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 KS or approved equal.

Pump volute or casings shall be constructed of class 30 cast iron. The pump casing shall have equal suction and discharge ports. The pump casing shall be drilled and tapped for gauge ports at both the suction and discharge flanges and for drain port at the bottom of the casing. Optional bronze wear ring can be fitted to the casing. The pump shall be capable of being serviced without disturbing 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 be fitted 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 bushing 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˚ F. Optional seat materials and elastomers are available. The pump shall have a factory installed vent/flush line to insure removal of trapped air and mechanical seal cooling. The vent/flush line shall run from the 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 close coupled to a NEMA standard JM frame motor and shall incorporate a dry shaft design with a field replaceable Bronze shaft sleeve to prevent fluid from contacting the shaft. In order to improve serviceability and reduce the cost of ownership the shaft sleeve must slip on (press on not allowable) and must be easily replace in the field.

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.

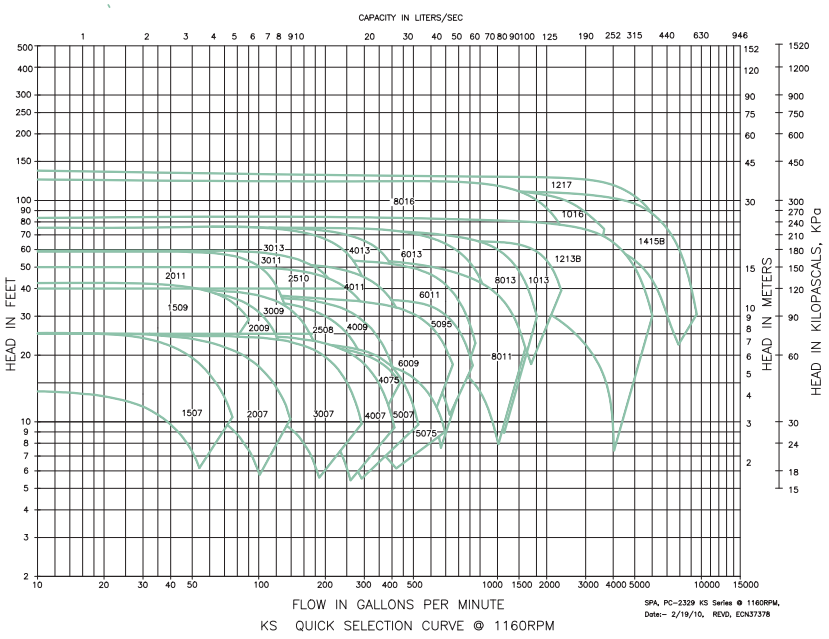
What do you have access to?

- Product Specifications
- CAD/REVIT Files
- Submittal Sheets
- Repair Parts Info
- Order Information
- Technical Support
- Taco Rep Information
- Catalog Sheets

KS Series Performance Field

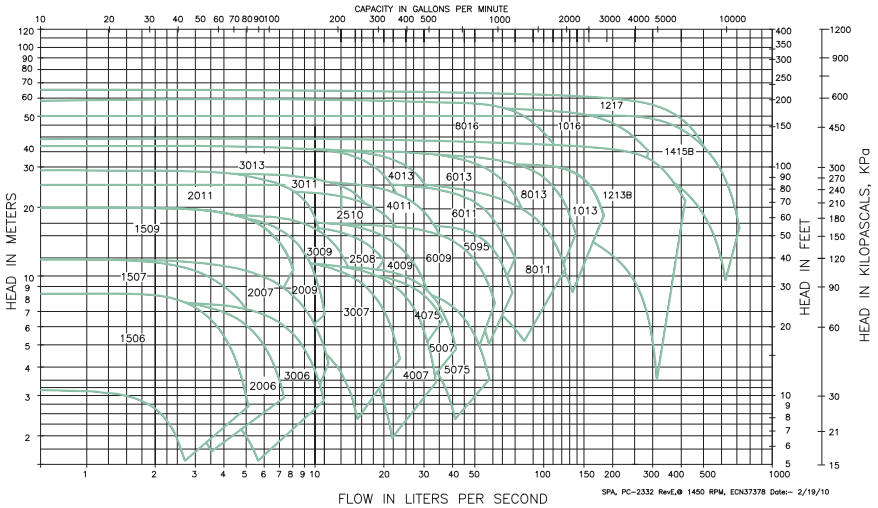
Curves also available on TacoNet.

1160 RPM



KS QUICK SELECTION CURVE @ 1160RPM

1450 RPM

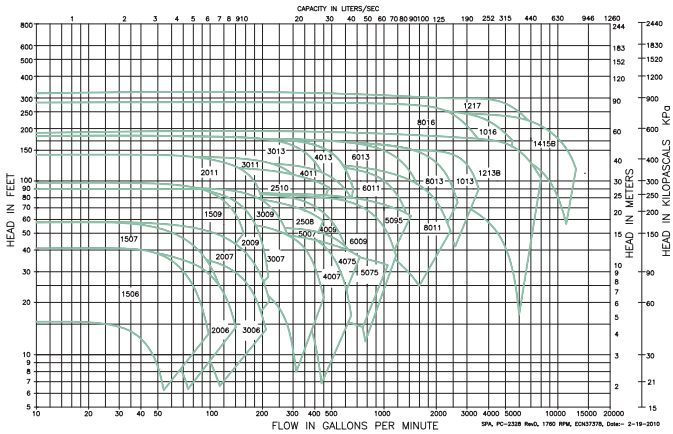


KS QUICK SELECTION CURVE @ 1450 RPM

KS Series Performance Field

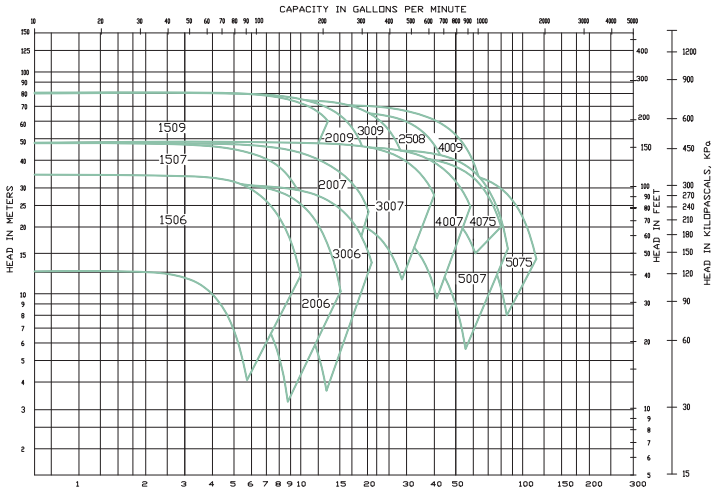
Curves also available on TacoNet.

1760 RPM

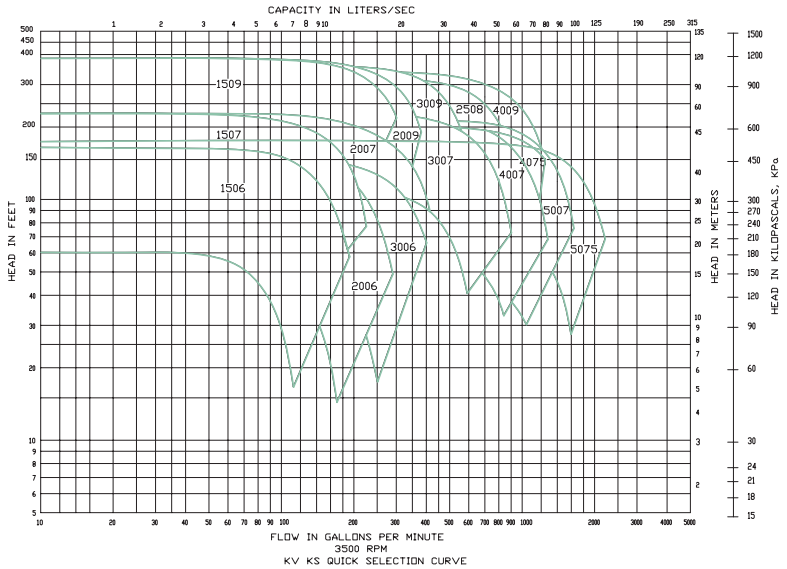


KS–QUICK SELECTION CURVE @ 1760 RPM

2900 RPM



3500 RPM



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.

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 - 10hp

RPM 1750

Voltage Options:
3-10 HP = 230V/460V/60/3

Motor Enclosure Type.....3-10 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

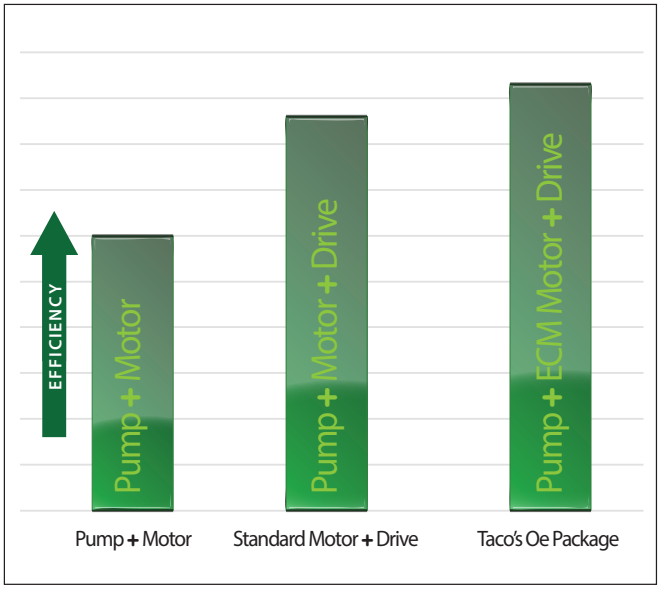
Oe Package

The Taco Oe package is designed to increase total efficiency. Taco not only meets, but exceeds 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 10hp.

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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