

## CI / SCI Close-Coupled End Suction Pumps

CI Series Pumps provide the ultimate in reliability and ease of installation for heating, air conditioning, pressure boosting, cooling water transfer, and water supply applications. Quiet, dependable and proven performance: that's the CI Series. Now also available featuring SelfSensing with ProBalance®, ECM motor options and eLink™.



Optimized Efficiency **Oe**  
Featuring **ECM** Technology

SelfSensing Series  
WITH **ProBalance**®

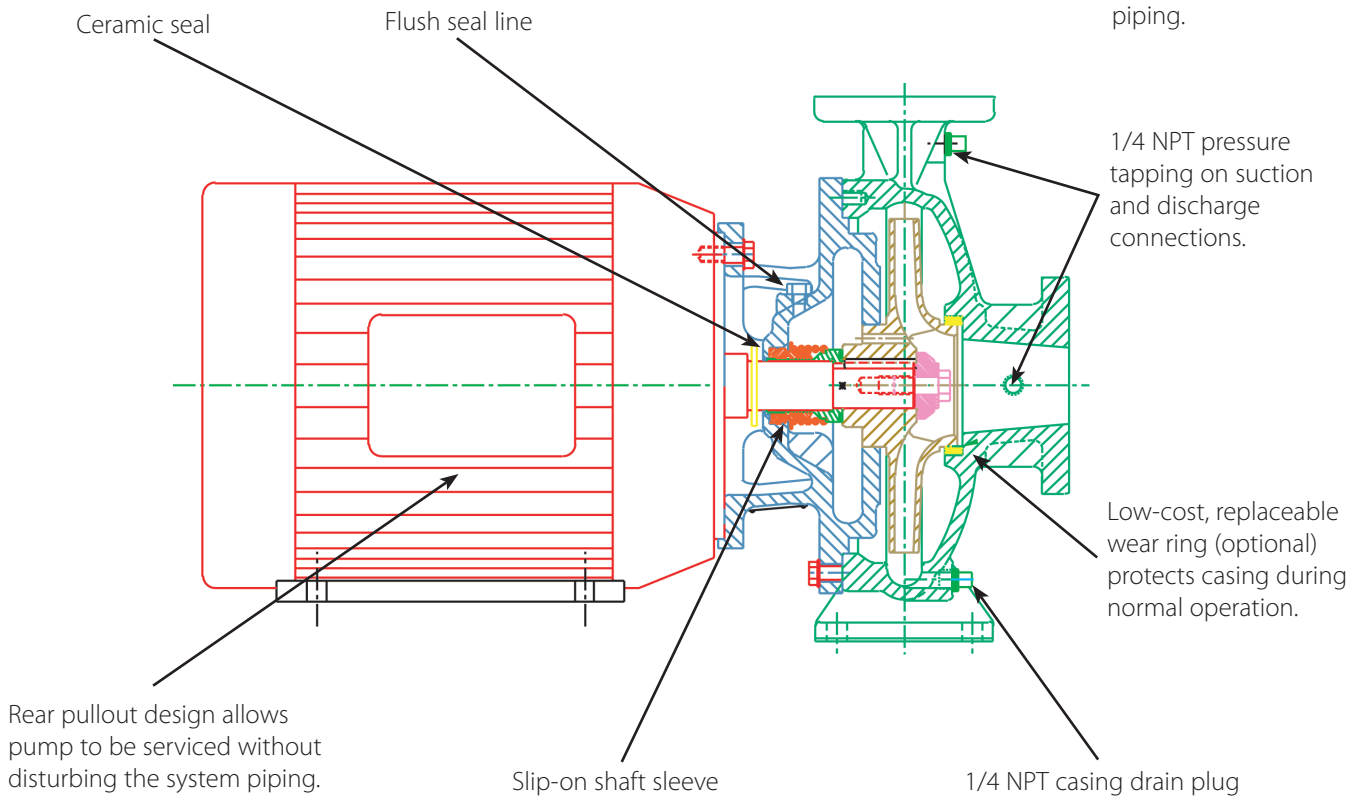
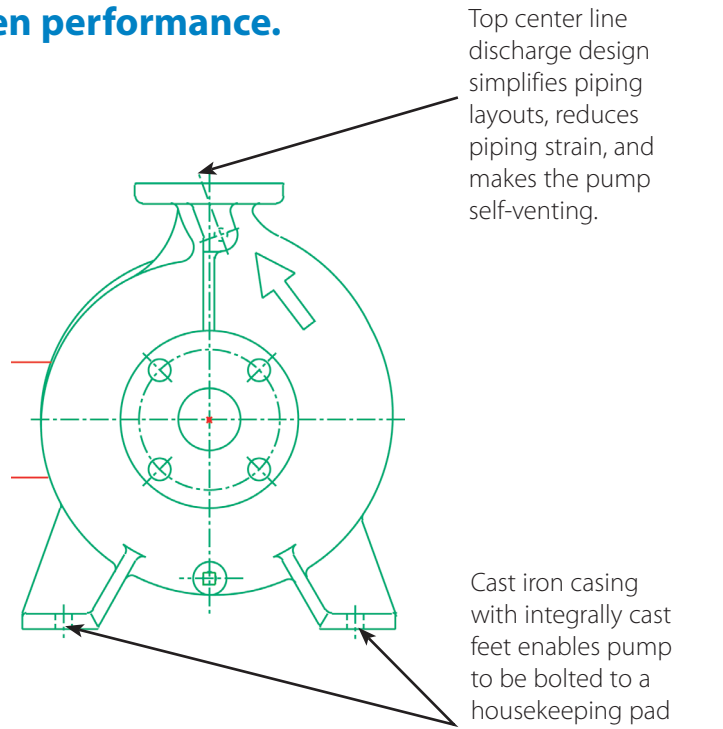
**eLink**™  
Taco Connectivity

**Taco**  
Comfort Solutions®  
A Taco Family Company

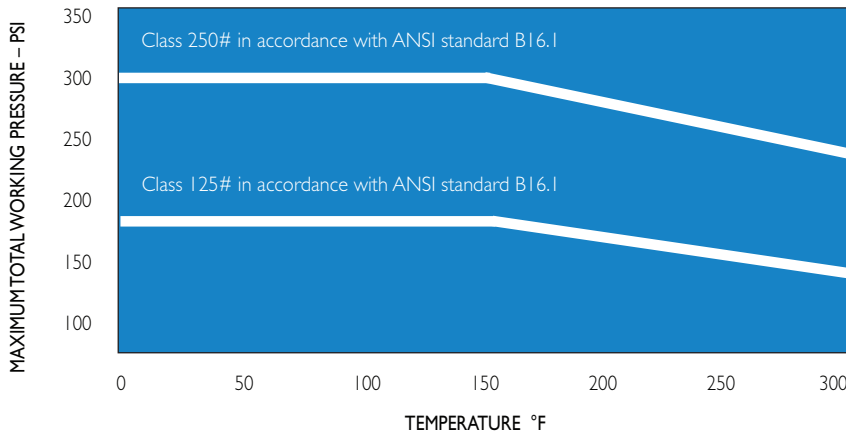
# CI Series Details

## Quiet, dependable power and proven performance.

- CI Series Pumps meet the latest standards for hydraulic performance and dimensional characteristics.
- An easy-to-replace, slip-on shaft sleeve facilitates seal maintenance in the field and lowers maintenance costs.
- Taco CI Pumps are ideally suited for a variety of applications, including heating, air conditioning, pressure boosting, cooling water transfer, and water supply.
- Flush seal line taps allow the installation of a filter to protect the seal from non-condensable particles present in systems.
- Standard ceramic seal promotes product flexibility enables basic product offering to meet a wide range of application requirements.



## 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.

## Materials of Construction

MATERIALS OF CONSTRUCTION		CASING	COVER	IMPELLER	WEAR RING	SHAFT	SHAFT SLEEVE	MECHANICAL SEAL	SEAL FLUSH LINE ASSEMBLY	
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	Carbon Steel	Bronze ASTM B584-98A C92200	Ceramic/EPT	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	Carbon Steel	Bronze ASTM B584-98A C92200	Ceramic/EPT	N/A
	OPTIONAL	125# OR 250#	N/A	N/A	Stainless Steel ASTM A351/A 351M-08	Bronze ASTM B584-98A C92200	N/A	Stainless Steel TYPE 303 ASTM A276	Tyngsten Carbide /EPT or Silicon-Carbide/EPT	Copper & Brass C3600
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	Carbon Steel	Bronze ASTM B584-98A C92200	Ceramic/EPT	Copper & Brass C3600
		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	Carbon Steel	Bronze ASTM B584-98A C92200	Ceramic/EPT	Copper & Brass C3600
	OPTIONAL	125# OR 250#	N/A	N/A	N/A	Bronze ASTM B584-98A C92200	N/A	N/A	N/A	N/A

## Support Documentation

### Typical Specification

Furnish and install centrifugal end suction single stage pump(s) with capacities and characteristics as shown on the plans. Pumps shall be Taco Model CI or approved equal.

Pump volute or casing shall be center-line discharge for positive air venting constructed of class 30 cast iron with integrally cast mounting feet. The pump may be fitted with an optional replaceable bronze wear ring, drilled and tapped for gauge ports at both the suction and discharge connections and for drain port at the bottom of the casing. The pumps 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 be fitted to the shaft with a key. The pump shall be close coupled to a NEMA standard JM regreaseable motor. The pump shall incorporate a dry shaft design to prevent the circulating fluid from contacting the shaft. The shaft shall be covered with a replaceable bronze (stainless steel) shaft sleeve.

The pump shall have a self flushing seal design or a positive external seal flushing line. Pump may be furnished with a seal flush line and a Purocell # 900 replaceable cartridge filter with shut-off isolation valve installed in the seal flushing line. The filter shall have the ability to remove particles down to five microns in size.


The pump seal shall be EPT Ceramic rated 250°F.

### 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



## Connect with the answers.

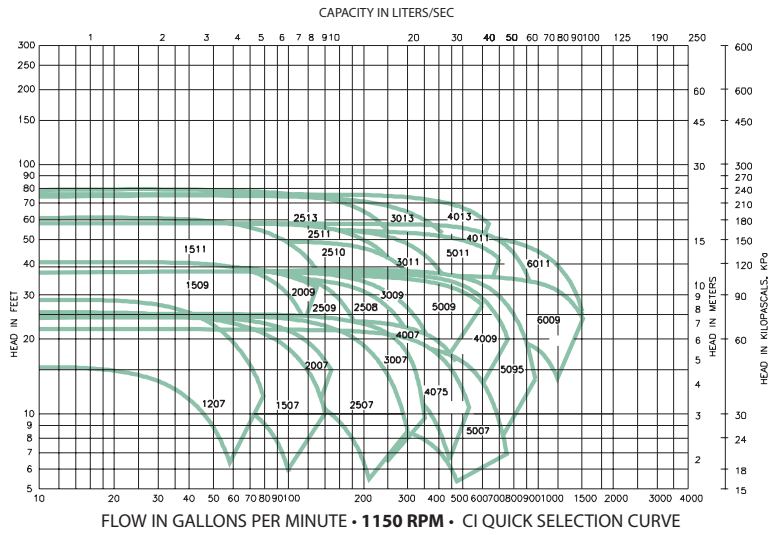
All the Taco product information is just a tap away on your mobile device.



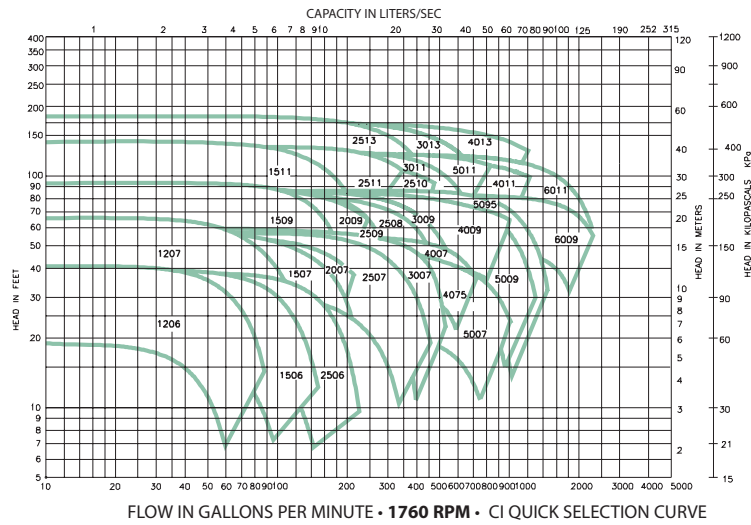
# CI Series Performance Field

Curves also available on TacoNet.

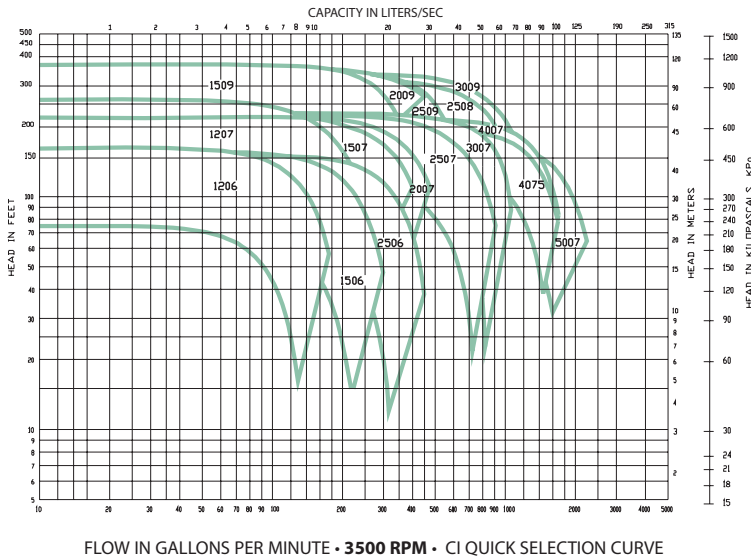
## 1160 RPM



## 1760 RPM



## 3500 RPM



## Additional Features

**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.

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

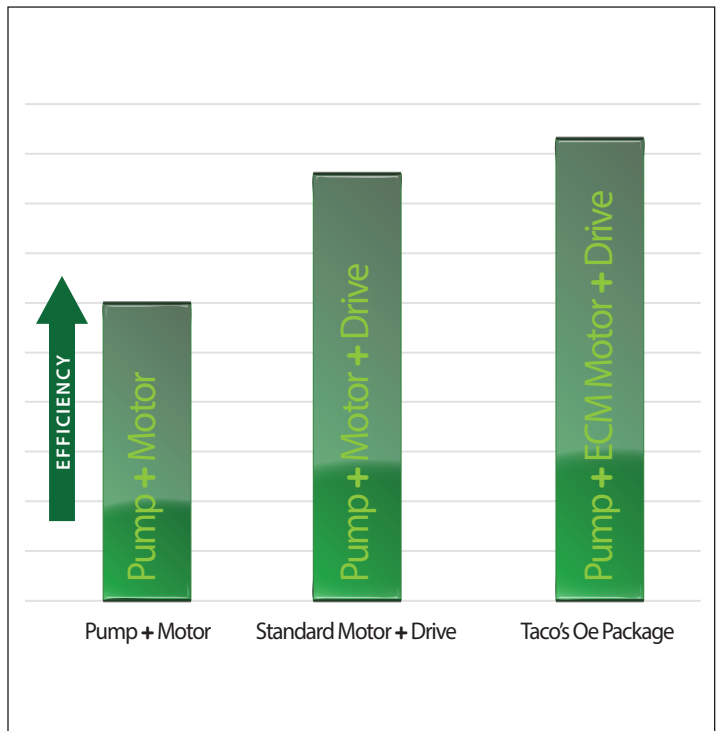
#### Oe Package

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.*



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