



# General Terms Of Sale For Products

## 1. GENERAL

A. Seller's price is based on these sales terms and conditions. This contract shall represent the final, complete and exclusive statement of the agreement between the parties and may not be modified, supplemented, explained or waived by parol evidence, any Terms and Conditions contained in Buyer's purchase order or request for quotation, any course of dealings between the parties, Seller's performance or delivery, or in any other way. The Terms and Conditions of this contract may only be modified or waived in a written document signed by an Officer of Seller. These terms are intended to cover all activity of Seller and Buyer hereunder, including sales and use of products, parts and work and all related matters (references to products include parts and references to work include construction, installation and start-up). Any reference by Seller to Buyer's specifications and similar requirements are only to describe the products and work covered hereby and no warranties or other terms therein shall have any force of effect. Any information provided by Seller, including but not limited to suggestions as to specific equipment does not imply any guarantee of specific suitability and/or material compatibility in a particular application since many factors outside the control of Seller may affect the suitability of products in a particular application. Catalogs, circulars and similar pamphlets of the Seller are issued for general information purposes only and shall not be deemed to modify the provisions hereof.

B. The agreement formed hereby and the language herein shall be construed and enforced under the Uniform Commercial Code as in effect in the State of California on the date hereof.

## 2. TAXES

Any sales, use or other similar type taxes imposed on this sale or on this transaction are not included in the price. Such taxes shall be billed separately to the Buyer. Seller will accept a valid exemption certificate from the Buyer if applicable; however, if an exemption certificate previously accepted is not recognized by the governmental taxing authority involved and the Seller is required to pay the tax covered by such exemption certificate. Buyer agrees to promptly reimburse Seller for the taxes paid.

## 3. PERFORMANCE, INSPECTION AND ACCEPTANCE

A. Unless Seller specifically assumes installation, construction or start-up responsibility, all products shall be finally inspected and accepted within thirty (30) days after arrival at point of delivery. Products not covered by the foregoing and all work shall be finally inspected and accepted within thirty (30) days after completion of the applicable work by Seller. All claims whatsoever by Buyer (including claims for shortages) excepting only those provided for under the WARRANTY AND LIMITATION OF LIABILITY AND PATENTS Clauses hereof must be asserted in writing by Buyer within said thirty (30) day period or they are waived. If this contract involves partial performance, all such claims must be asserted within said thirty- (30) day period for each partial performance. There shall be no revocation of acceptance. Rejection may be only for defects substantially impairing the value of products or work and Buyer's remedy for lesser defects shall be those provided for under the WARRANTY AND LIMITATION OF LIABILITY Clause.

B. Seller shall not be responsible for non-performance or for delays in performance occasioned by any causes beyond Seller's reasonable control, including, but not limited to, labor difficulties, delays of vendors or carriers, fires, governmental actions, or shortages of material, components, labor, or manufacturing facilities. Any delays so occasioned shall affect a corresponding extension of Seller's performance dates, which are, in any event, understood to be approximate. In no event shall Buyer be entitled to incidental or consequential damages for late performance or for a failure to perform. Seller reserves the right to make partial shipments and to ship products, parts or work which may be completed prior to the scheduled performance date.

C. In the event that Seller has agreed to mount motors, turbines, gears, or other products which are not manufactured by Seller and which are not an integral part of Seller's manufactured product, and a delay in the delivery of such products to Seller occurs that will cause a delay in Seller's performance date, Seller reserves the right to ship its product upon completion of manufacture and to refund an equitable portion of the amount originally included in the purchase price for mounting without incurring liability for non-performance.

D. Seller reserves to itself the right to change its specifications, drawings and standards if such changes will not impair the performance of its products, and parts, and further that such products, and parts, will meet any of Buyer's specifications and other specific product requirements which are a part of this agreement.

E. The manufacture and inspection of products and parts shall be to Seller's Engineering and Quality Assurance standards plus such other inspections, tests or documentation as are specifically agreed to by Seller. Requirements for any additional inspection, tests, documentation, or Buyer witness of manufacture, test, and/or inspection shall be subject to additional charges.

## 4. TITLE AND RISK OF LOSS

Title and risk of loss shall pass to buyer upon delivery of products at the designated Ex Works place (Incoterms 1990) unless other wise agreed by the parties.

## 5. EROSION AND CORROSION

It is specifically understood that products and parts sold hereunder are not warranted for operation with erosive or corrosive fluids. No product or part shall be deemed to be defective by reason of failure to resist erosive or corrosive action of any fluid and Buyer shall have no claim whatsoever against Seller therefor.

## 6. WARRANTY AND LIMITATION OF LIABILITY

A. Seller warrants only that its product and parts, when shipped, will be free from defects in materials and workmanship. With respect to products and parts not manufactured by Seller, Seller's only obligation shall be to assign to Buyer, to the extent possible, whatever warranty Seller requires from the manufacturer. All claims for defective products or parts under this warranty must be made in writing immediately upon discovery and, in any event, within one (1) year after initial start-up or eighteen (18) months after shipment, whichever first occurs, and all claims for defective work must be made in writing immediately upon discovery and in any event, within one (1) year of completion thereof by Seller.

Defective items must be held for Seller's inspection and returned to the original f.o.b. point upon request. THE FOREGOING IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES WHATSOEVER, EXPRESS, IMPLIED AND STATUTORY, INCLUDING WITHOUT LIMITATION, THE IMPLIED, WARRANTIES OF MERCHANTABILITY AND FITNESS.

B. ANY PRODUCT (S) SOLD HEREUNDER WHICH IS NOT MANUFACTURED BY SELLER IS NOT WARRANTED BY SELLER and shall be covered only by the express warranty, if any, of the manufacturer thereof.

C. Upon Buyer's submission of a claim as provided above and its substantiation, Seller shall at its option either (i) repair or replace its product, part or work at the original place of delivery, or (ii) refund an equitable portion of the purchase price.

D. THE FOREGOING IS SELLER'S ONLY OBLIGATION AND BUYER'S EXCLUSIVE REMEDY FOR BREACH OF WARRANTY AND, EXCEPT FOR GROSS NEGLIGENCE, WILLFUL MISCONDUCT, AND REMEDIES PERMITTED UNDER THE PERFORMANCE, INSPECTION AND ACCEPTANCE AND THE PATENTS CLAUSES HEREOF, THE FOREGOING IS BUYER EXCLUSIVE REMEDY AGAINST SELLER FOR ALL CLAIMS ARISING HEREUNDER OR RELATING HERETO WHETHER SUCH CLAIMS ARE BASED ON BREACH OF CONTRACT, TORT (INCLUDING NEGLIGENCE) OR OTHER THEORIES. BUYER'S FAILURE TO SUBMIT A CLAIM AS PROVIDED ABOVE SHALL SPECIFICALLY WAIVE ALL CLAIMS FOR DAMAGES OR OTHER RELIEF, INCLUDING BUT NOT LIMITED TO CLAIMS BASED ON LATENT DEFECTS. IN NO EVENT SHALL BUYER BE ENTITLED TO INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, NOR FOR DAMAGES FOR LOSS OF USE, LOST PROFITS OR REVENUE, INTEREST, LOST GOODWILL, WORK OR PRODUCTION STOPPAGE, IMPAIRMENT OF OTHER GOODS, INCREASED EXPENSES OF OPERATION, OR THE COST OF PURCHASING REPLACEMENT POWER OR OTHER SERVICES BECAUSE OF SERVICE INTERRUPTIONS. FURTHERMORE, IN NO EVENT SHALL SELLER'S TOTAL LIABILITY FOR DAMAGES OF BUYER EXCEED THE PURCHASE PRICE OF THE PRODUCTS OR PARTS MANUFACTURED BY SELLER AND UPON WHICH SUCH LIABILITY IS BASED. ANY ACTION ARISING HEREUNDER RELATED HERETO, WHETHER BASED ON BREACH OF CONTRACT, TORT (INCLUDING NEGLIGENCE) OR OTHER THEORIES, MUST BE COMMENCED WITHIN ONE (1) YEAR AFTER THE CAUSE OF ACTION ACCRUES OR IT SHALL BE BARRED.

## 7. PURCHASER'S REPRESENTATIONS & WARRANTIES

Purchaser represents and warrants that the products(s) covered by this contract shall not be used in or in connection with a nuclear facility or application. The parties agree that this representation and warranty is material and is being relied on by seller. This provision may be modified in a separate writing signed by an officer of PPC.

## 8. PATENTS

Seller agrees to assume the defense of any suit for infringement of any patents brought against Buyer to the extent of such suit charges infringement of an apparatus or product claim by Seller's product in and of itself, provided (i) said product is built entirely to Seller's design, (ii) Buyer notifies Seller in writing of the filing of such suit within ten (10) days after the service of process thereof, and (iii) Seller is given complete control of the defense of such suit, including the right to defend, settle and make changes in the product for the purpose of avoiding infringement of any process or method claims, unless infringement of such claims is the result of following specific instruction furnished by Seller.

## 9. EXTENT OF SUPPLY

Only products as listed in Seller's proposal are included in this agreement. It must not be assumed that Seller has included anything beyond same.

## 10. MANUFACTURING SOURCES

To maintain delivery schedules, Seller reserves the right to manufacture on a world-wide basis.

## 11. TERMS OF PAYMENT

Net 30 days from date of invoice.



# Price® Pump Company

## Type CD/RC Vertical Installation, Operating and Maintenance Manual

**Caution:**  
Before installing, repairing or performing maintenance on this pump, read these instructions completely.

If pump has been used to pump hazardous materials be certain that all materials have been removed prior to working on the pump.

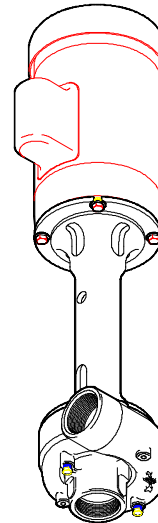
**Warning!!**  
Ground motor before connection to electrical power supply!! Failure to ground motor can cause severe or fatal electrical shock hazard!!

Do not ground to gas supply line!!

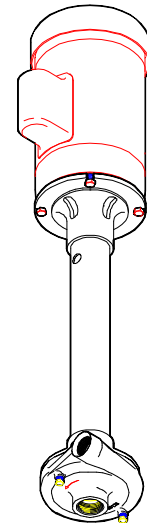
Match voltage to nameplate voltage on motor. Incorrect voltage can cause fire or seriously damage motor, voiding warranty.

Before disassembling be certain all liquid is removed from the pump.

TYPE RC



TYPE CD



**PLUMBING**

All piping should be supported independently of the pump. Piping should not exert any stress on the pump connections.

**Suction Piping**

This pump is not self-priming, therefore the suction must be flooded at start up. Elbows, fittings or valves installed close to the suction can disrupt liquid flow and cause malfunction. Suction lines must be at least the same size as the pump inlet or larger if possible. Price Pump Company recommends against using foot valves in the suction line to maintain liquid in the pump when it's not operating. If foot valves are used due to suction lift conditions they must be properly maintained to avoid leaks resulting from wear or fouling.

**Discharge Piping**

For flow and discharge head control it is advisable to install a valve (globe, ball, or other adjustable and non-leak type) in the discharge line close to the pump. The valve may be closed during system repairs to prevent backflow. By installing a check valve in the discharge line backflow can also be prevented during maintenance or during periods of pump stoppage.

**Vertical Pumps**

Care must be taken when attaching piping to the discharge of vertically mounted pump to avoid piping

stress (axial or radial force) on the discharge port. Such force will push the pump out of vertical alignment, causing premature failure.

**No piping stress can be allowed against the discharge connection.**

Vertical pumps must have impeller submerged at start-up. The inlet of pump must be submerged sufficiently to prevent vortexing and the resulting entrance of air into the pump.

**OPERATION**

**Priming-**

All centrifugal pumps must be filled with liquid prior to start up. For the pump illustrated in this manual completely fill the volute and suction lines prior to operation. It is suggested that during initial start up the discharge valve be closed and then opened as the motor develops full rpm's. If pump does not build up pressure as motor speed increases, shut down and make sure that liquid flow into pump is not restricted (see "Troubleshooting").

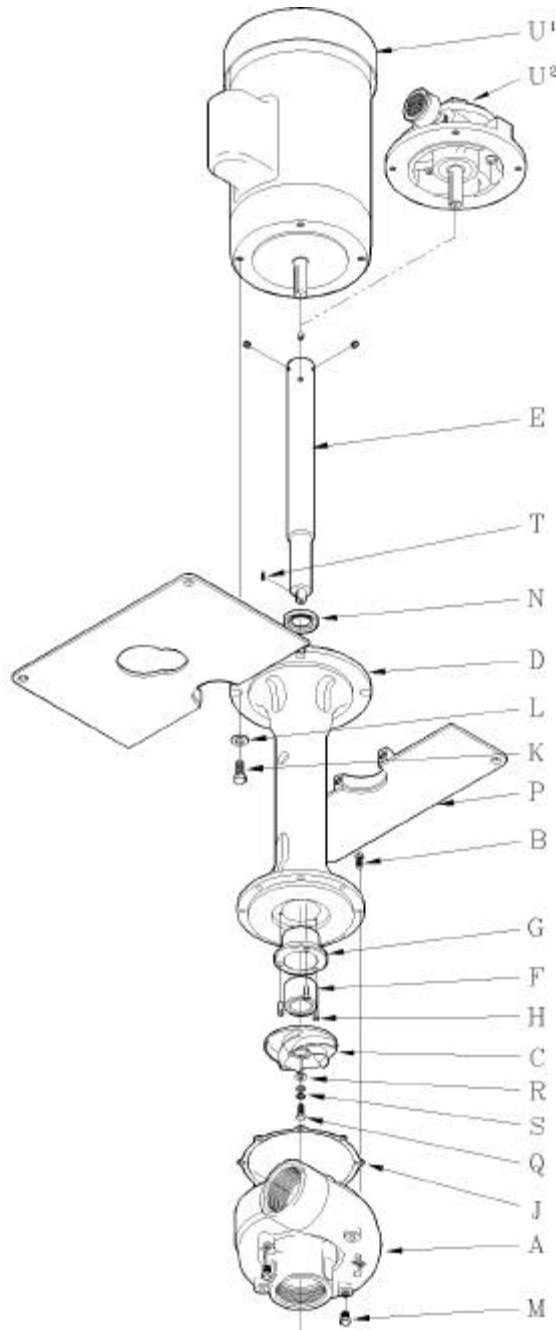
**Note:** A centrifugal pump's flow and head (pressure) will vary with the amount of resistance (friction and flow restrictions) in the discharge line. As a valve on the discharge line opens the flow and motor amp draw will increase and head will drop. As a valve on the discharge is closed the flow and amp draw will decrease and the

**RC Cast Iron Vertical Parts List**

	<u>RC200V</u>	<u>RC200/300V</u>	<u>RC300V</u>
A. Volute	0183		0120
B. Volute Bolts (8 reqd)		0376	
C. Impeller (Iron)	4184-dia		4230-dia
Impeller (Bronze)	4128-dia		4119-dia
D. Column Assembly			
13" CI		0396-8	
13" CI		0467	
20" CI		0466	
32" CI		0472	
E. 5/8" ID Shaft w/Setscrews			
13" SS		2431-1	
20" SS		2432-1	
44" SS		2434-1	
7/8" ID Shaft w/Setscrews			
20" SS		2437-1	
32" SS		2438-1	
44" SS		2439-1	
Shafts Includes:			
1 Half Dog Setscrew		0566	
3 Cup Point Setscrews		0680	
F. Impeller Lockdown	0917		
Impeller Lockdown Key	2424		
Impeller Lockdown Washer	2423		
G. Bushing Plate		0747	
H. Bushing Plate Screws (3 reqd)		0256	
I. Bushing			
Glass Filled Teflon (opt)		1135	
**Silicon Carbide (opt)		0616	
Bushing plate for Silicon Carbide	0747ASC		
Pin SS for GFT & Silcon Carbide (1 reqd)		0727	
J. Gasket Syn fiber		0506	
K. Motor Bolts (4 reqd)		0592	
L. Motor Bolt Washers (4 req 13" CI only)		3081	
M. 1/8" Pipe Plugs (2 reqd)		0559	
N. Fume Barrier (opt)			
Viton for 5/8" ID shaft		0875	
Viton for 7/8" ID shaft		0877	
Teflon for 5/8" ID shaft		0876	
Teflon for 7/8" ID shaft		0878	
P. Plate Assembly (opt)			
Steel mounting plate		0923	
12 x 12 Sq Stainless Steel	0924		
R1. Motor - Specify P/N			
R2. Air Motor - Specify P/N			

\*\* Note: If using an optional silicon carbide bushing, the shaft must be tungsten coated - Contact Factory

# RC Cast Iron Vertical Parts List



head will increase. If resistance in the discharge line is not sufficient the pump will operate at a condition of maximum (or "choked") flow, also sometimes called "end of performance curve." Maximum horsepower is required to operate at this point and motor overload may result. If excessive amp draw and motor overload is recurring, reduce the system flow by installing a valve on the discharge line and restricting flow. Alternatively, reduce pump head by trimming impeller to a smaller diameter. Consult local Price Pump dealer for assistance.

## **TROUBLESHOOTING:**

### **1. Pump fails to build pressure:**

- Check for:
- Pump not primed.
  - Incorrect rotation.
  - Driver speed too low.
  - Suction line restricted.
  - Driver failure.
  - Plugged or damaged impeller.
  - Pump or impeller undersized.
  - Pump cavitation.
  - Improper impeller clearance.

### **2. Pump fails to provide enough flow.**

- Check for:
- System resistance too high.
  - Pump undersized.
  - Pump not primed.
  - Driver speed too low.
  - Poor suction conditions.
  - Improper impeller clearance.

### **3. Excessive noise or vibration during operation.**

- Check for:
- Motor bearing failing.
  - Pump cavitating.
  - Improper impeller clearance.

### **4. Leaking mechanical seal.**

- Check for:
- Improper assembly.
  - Worn or cracked seal faces.
  - Abrasive material in fluid.
  - Liquid flashing at seal faces (fluid temperature too high).
  - Seal pressure rating too low for the service.
  - Chemical attack of seal parts.
  - Seal operated dry or with a liquid having poor lubricating properties.

### **5. Pump gradually loses pressure and head.**

- Check for:
- Increasing temperature causing cavitation or liquid vaporization.
  - Driver failure.
  - Suction lift too high.
  - Air entering suction line.

### **6. Motor/pump overheating.**

- Check for:
- Excessive flow and amp draw (Throttle discharge).
  - Low voltage or frequency.
  - Flow too low with resulting heat rise.
  - Bearing failure.
  - System temperature too high.

**DISASSEMBLY**

1. Disconnect power source to motor.
2. Disconnect electrical connections tagging wires carefully to preserve correct rotation. Loosen motor base.
3. Remove pump and motor assembly to repair area. Observe position of all parts prior to disassembly.
4. Unscrew volute bolts and remove volute from pump.
5. Remove impeller. Unscrew impeller lockdown. Slide impeller off shaft. Do Not throw shaft key away. A small pair of c-clamp or standard vise grips may be clamped to the pump shaft to prevent rotation while unscrewing impeller lockdown. Avoid damaging the set screws of the shaft with the vise grips.
7. Remove four motor bolts and remove column from motor.
8. Loosen setscrews in pump shaft and remove shaft from motor (note: New setscrews must be used when shaft is reinstalled).
9. Remove allen cap bolts in bushing plate assembly and remove bushing plate assembly (note: New bushing should be used when rebuilding pump).

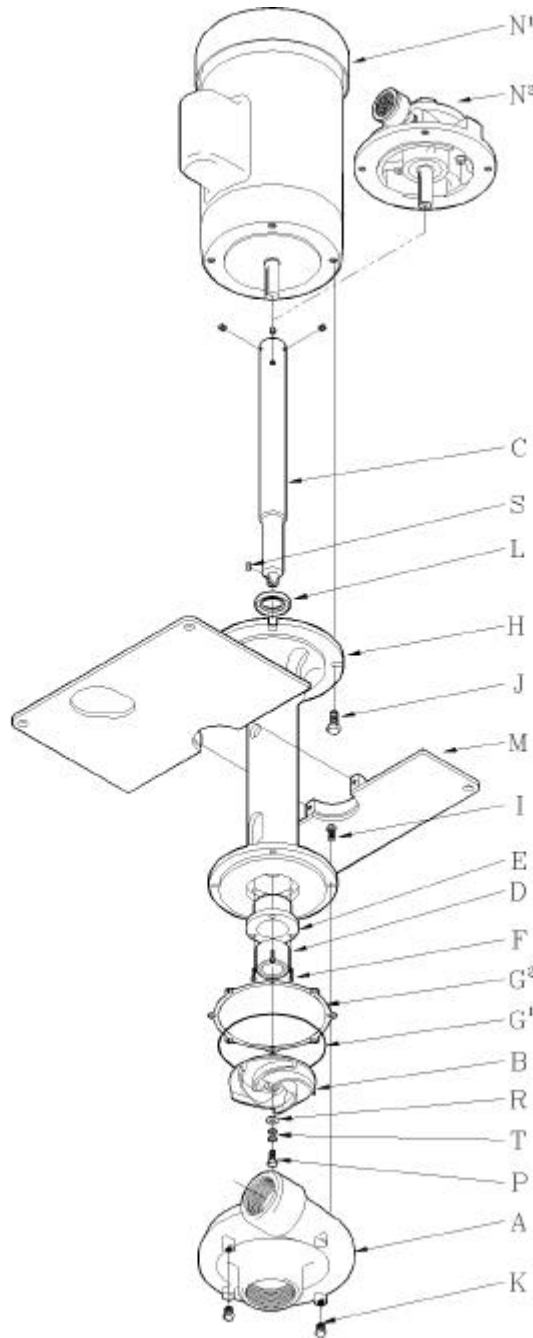
**REASSEMBLY**

1. Clean pump and motor shaft thoroughly.
2. Assure that the shaft is not grooved and that there is no evidence of pitting or fretting where the bushing rides. If the shaft is grooved, fretted or worn, replace it.
3. Install the pump shaft onto the motor shaft, aligning half dog set screw of the pump shaft with the keyway of the motor shaft. Ensure all debris and burrs are removed from the motor shaft.
4. Install bushing and plate into column. Tighten three allen cap screws securely (note: non-galling thread compound must be used on the allen cap bolts).
5. Install column onto motor being careful not to damage bushing.
6. Install motor bolts and tighten.
7. Insure shoulder of shaft is protruding above bushing before installing impeller. Slide impeller onto pump shaft, install shaft key and tighten impeller lockdown securely.
8. Install new volute gasket/o-ring and mount volute. Secure with bolts and tighten evenly.
9. Set impeller clearance. Slide pump shaft towards volute

**CD Cast Iron Vertical Parts List**

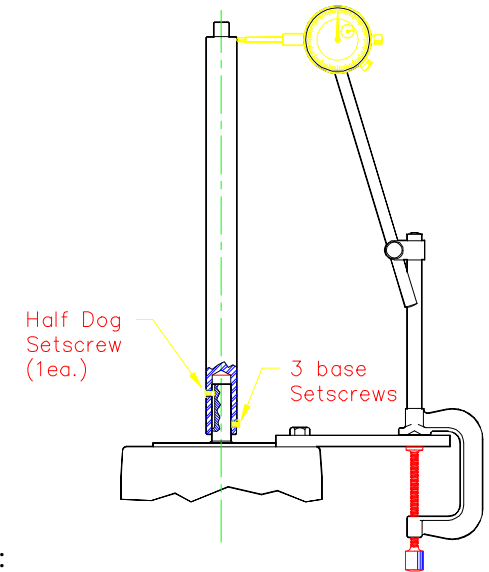
	<u>CD100 AI</u>	<u>CD150 AI</u>	
A. Volute	2401	2407-0	
B. Impeller (for All Iron Pumps)	2402V-dia.	2408V-dia.	
Impeller (for CIBF Pumps)	2404V-dia.	2410V-dia.	
C. 5/8" ID Shaft w/Setscrews 6 1/2" SS	2430-1	2430-1	
13" SS	2431-1	2431-1	
20" SS	2432-1	2432-1	
32" SS	2433-1	2433-1	
7/8" ID Shaft w/Setscrews 6 1/2" SS	2435-1	2435-1	
13" SS	2436-1	2436-1	
32" SS	2438-1	2438-1	
44" SS	2439-1	2439-1	
Shafts Include: 1 Half Dog Setscrew	0566	0566	
3 Cup Point Setscrews	0680	0680	
D. Bushing Graphite (std)	0676	0676	
GF Teflon® (opt)	1135	1135	
** Silicon Carbide (opt)	0616	0616	
Bushing plate for silicon carbide	0747ASC	0747ASC	
Pin for GFT & silicon carbide (1 rqd)	0727	0727	
E. Bushing Plate	0747	0747	
F. Bushing Plate Screws (3 rqd)	0256	0256	
G1. O-Rings (for Volute Flange) Buna (std)	N/A	3074	** Note: If using an optional silicon carbide bushing, the shaft must be tungsten coated - Contact Factory
Viton®	N/A	3070	
Teflon®	N/A	3071	
Neoprene	N/A	3072	
EPR	N/A	3073	
G2. Gasket, Syn. Fiber, CD100AI only	0506	N/A	
H. Column Assembly			
13" CI (No bushing, Labyrinth design)	0395-4	0395-8	
6 1/2" SS	0468	0468	
13" SS	0467	0467	
20" SS	3373-20	3373-20	
32" SS	3373-32	3373-32	
44" SS	3373-44	3373-44	
I. Volute Bolts	0376 (4 rqd)	0376 (8 rqd)	
J. Motor Bolts (4 rqd)	0592	0592	
K. 1/8" Pipe plugs (2 rqd)	0559	0559	
L. Fume Barrier (opt) Viton® for 5/8" ID shaft	0875	0875	
Viton® for 7/8" ID shaft	0877	0877	
Teflon® for 5/8" ID Shaft	0876	0876	
Teflon® for 7/8" ID Shaft	0878	0878	
M. Plate Assembly (opt) 12 x 12 Sq. Steel	0903	0903	
12 x 12 Sq. Stainless	0904	0904	
N1. Motor - Specify P/N			
N2. Air Motor - Specify P/N			
P. Impeller Lockdown Bolt	0575	0575	
R. Impeller Lockdown Washer	2423	2423	
S. Impeller Lockdown Key	2424	2424	
T. Impeller Lockwashers (2 Rqd)	2344	2344	

## CD Cast Iron Vertical Parts List



until impeller touches volute. Back the impeller and shaft away from the volute approximately .020" and tighten one setscrew at this time.

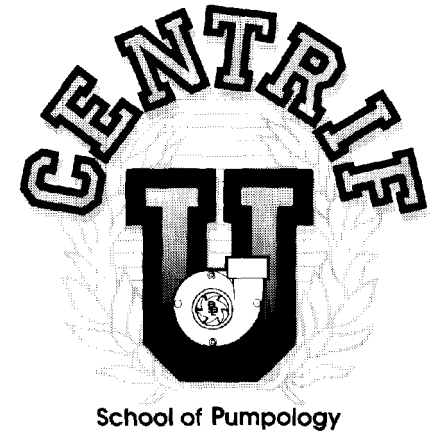
10. Invert pump and rotate pump shaft by hand to ensure impeller does not rub against volute.
11. Remove volute, impeller, and column.
12. Tighten the half-dog setscrew in keyway securely.
12. Dial indicating "Total Indicated Run-Out". Using a magnetic base and dial indicator align shaft with maximum TIR of .004" (Note: dial indicator should be set to run as close to end of shaft as possible). The three setscrews at the base of the pump shaft are used to align the shaft. Tighten the three setscrews evenly until TIR of .004" is accomplished. Note: when TIR is completed all the setscrews must be tight.
13. Install column onto motor being careful not to damage bushing.
14. Install motor bolts and tighten.



Place the motor with the shaft facing up. Attach a dial indicator with a magnetic base or clamp with a plate bolted to the motor (as shown), and place the dial indicator on the end of the shaft and rotate the shaft. The Total Indicated Runout (T.I.R.) should be no greater than 0.004".

Continued on next page.

15. Install impeller. Install key in pump shaft. Slide impeller onto shaft and install impeller washer and lockdown (note: Loctite must be used on the lockdown bolt). Tighten evenly.
16. Install new volute gasket/o-ring and mount volute. Secure with bolts and tighten evenly.
17. Invert pump and rotate pump shaft by hand to ensure impeller does not rub against volute.
18. Return pump to installation, reconnect electric connections.
19. Start pump momentarily to observe shaft rotation. If rotation corresponds to the rotation arrow, pump may be put into service. If rotation is incorrect, switch any two leads on 3-phase motors. Check wiring diagram of motor for single phase rotation.
20. Start pump allowing adequate time to purge all air from system. Observe any gauges, flow meters, etc. to see if pump performs properly.



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- \* Find technical information for all Price Pump models.
- \* Locate a local distributor at [www.pumpnet.com](http://www.pumpnet.com)
- \* Printable I&O Manuals in PDF Format.