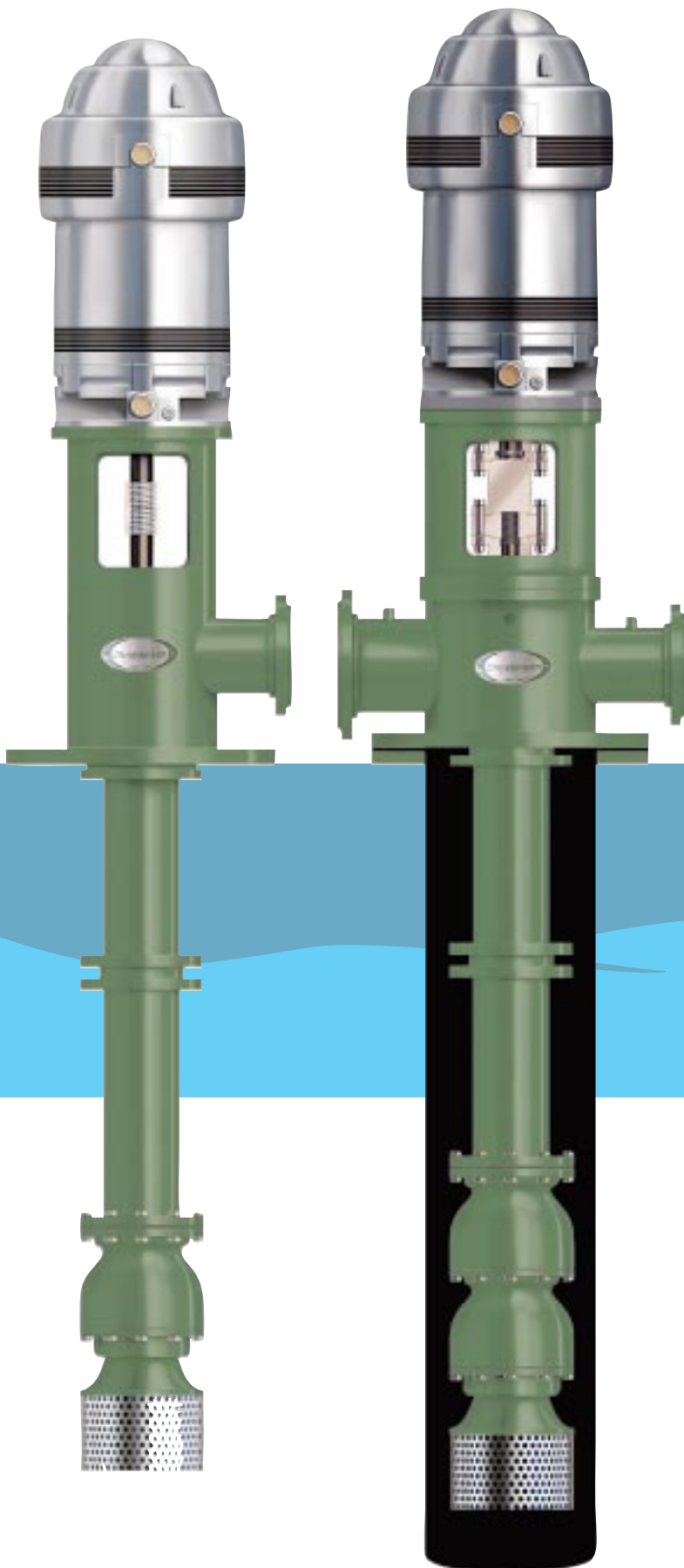


VERTICAL TURBINE PUMPS



VTP Series



Christensen Pumps

A division of Layne Christensen Company

CHRISTENSEN TURBINE PUMP PRODUCTION





You not only get the latest in pump design and technology from Christensen, you get more than 100 years of pump manufacturing know-how that includes most of the major innovations in pump engineering and materials. All our products reflect the engineering design advances for top efficiency and head generation.

Our engineers are specialists using computer assisted design and extensive test research facilities. They develop the specifications that guide our in-house pattern shop technicians in the development of precision turbine pattern equipment. The result is consistent casting accuracy, close tolerances, and the quality needed to maintain water passage shape and pump efficiencies.



Christensen further controls the quality of its products in its foundries. Here the molding, core work and Vitr-Glass enameling are closely supervised for tight quality standards.

Our modern manufacturing facilities assure dimensionally consistent, high quality, fully machined parts, produced on a volume basis to bring down costs. Every impeller is precision balanced on a micro processor balance analyzer. Christensen is one of the largest manufacturers in the turbine industry.



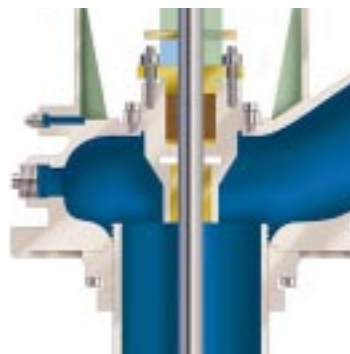
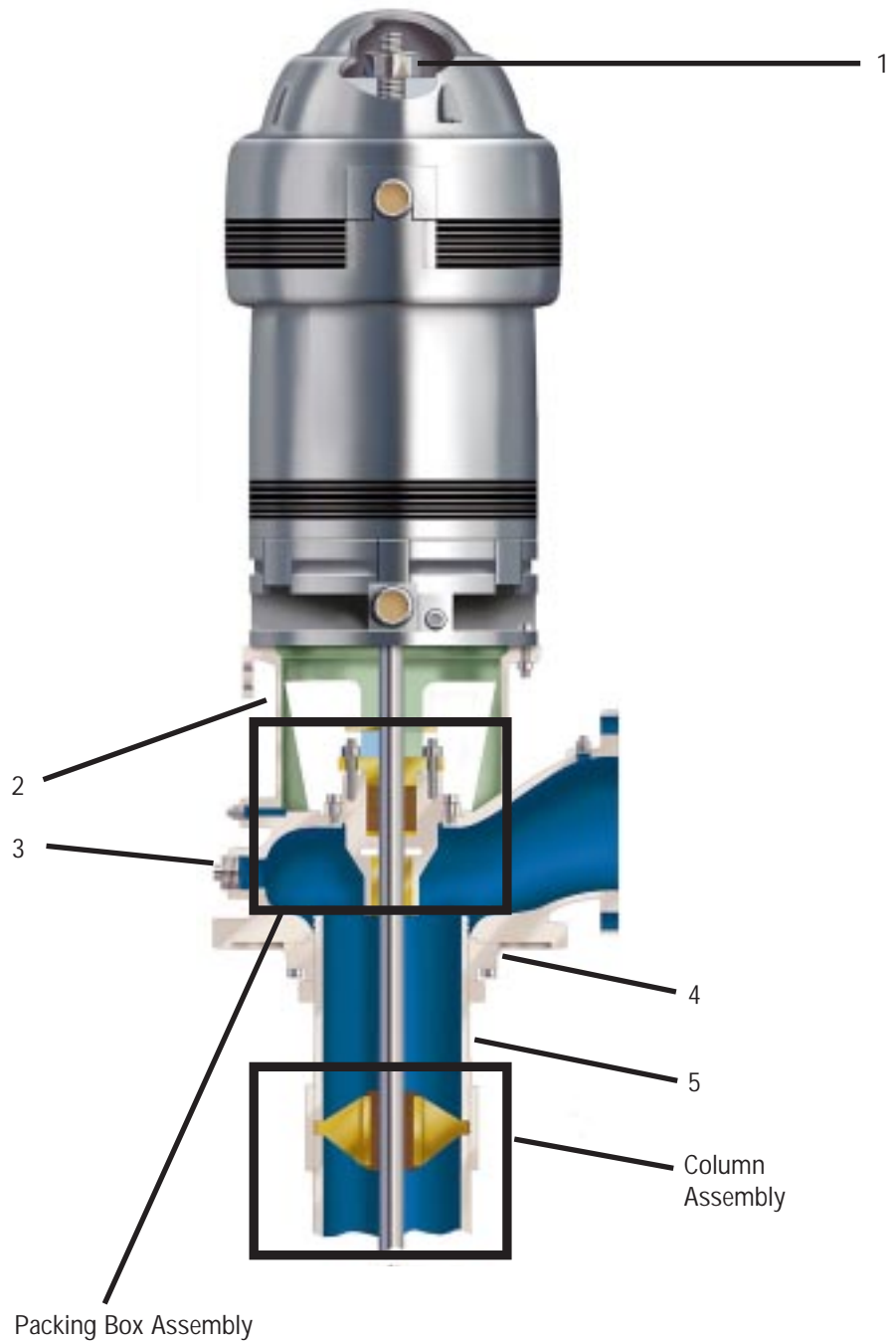
From design to pattern shop to foundry to manufacturing to warehousing—Christensen is a completely integrated producer. Our network of turbine warehouses brings pumps and same days service to you. We offer full service on new units. Plus rebowling, rebuilding and repair on turbine pumps and submersible and centrifugal pumps.

We are committed to service. We offer ready availability of complete pumps, repair parts and service. We are continually improving and expanding our turbine products warehouse network with locations in key areas.



Water Lubrication

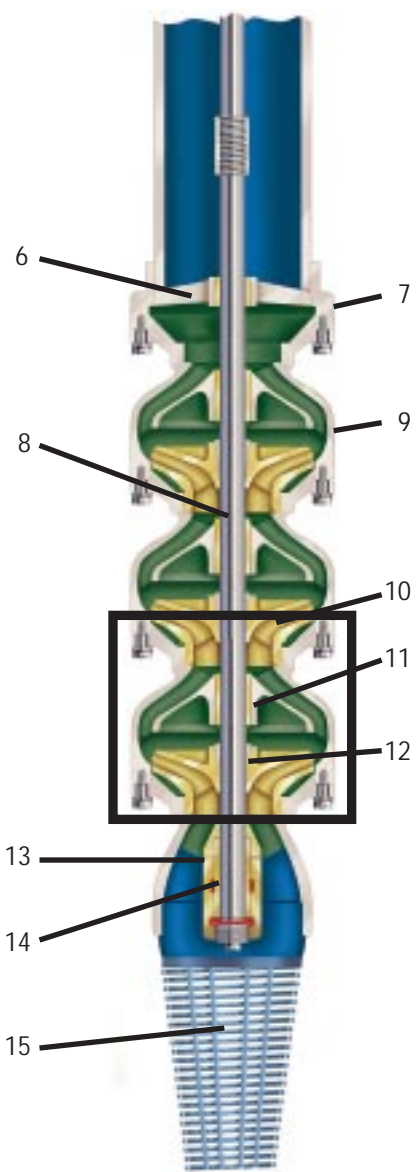
- 1 Adjusting Nut**
Permits exact impeller adjustment for maximum performance.
- 2 Discharge Head**
Heavy duty head provides maximum accessibility to service packing box assembly. Two piece head shaft is standard.
- 3 Prelube Connection**
- 4 Column Adapter**
Accepts threaded or flanged column.
- 5 Adjusting Nipple**
Threads directly into column adapter. Headshaft stickup set exactly by threading head on column as required.
- 6 Discharge Bowl Bearing**
Bronze.
- 7 Discharge Bowl**
Close grained cast iron.
- 8 Pump Shaft**
Oversized high strength polished stainless steel.
- 9 Intermediate Bowls**
Close grained cast iron. Waterways glass lined for maximum efficiency.
- 10 Impellers**
Silicon bronze, designed for maximum efficiency. Precision balanced for smooth operation.
- 11 Intermediate Bowl Bearings**
Bronze or rubber for long pump life under any well conditions.
- 12 Lock Collets**
Steel construction secures impeller to pump shaft.
- 13 Sand Collar**
Accurately located at suction bowl bearing to eliminate possible sand buildup.
- 14 Suction Bowl Bearing**
Bronze. Grease packed for long trouble-free life.
- 15 Tail Pipe or Strainer-Optional**
Optional tail pipe cut to desired length for best suction conditions. Strainer provides protection from large solids.



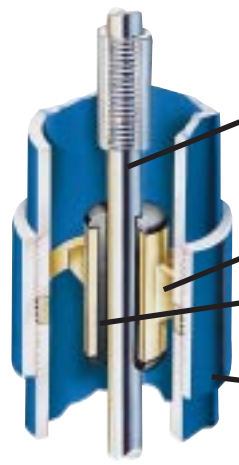
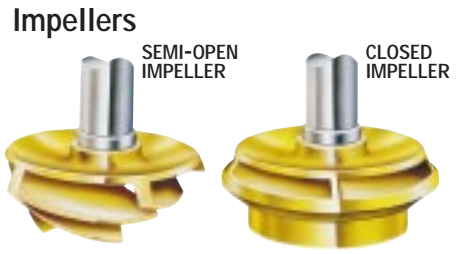
Headshaft
Stainless Steel.

Bronze Packing Gland
Cast Iron Box

Throttle Bushing
Extra length bronze for better shaft support, longer packing life.



Glass Lined Bowls
 Heavy duty Class 30 cast iron intermediate bowls with standard feature of vitra-glass lined waterways for maximum efficiency and wear protection.



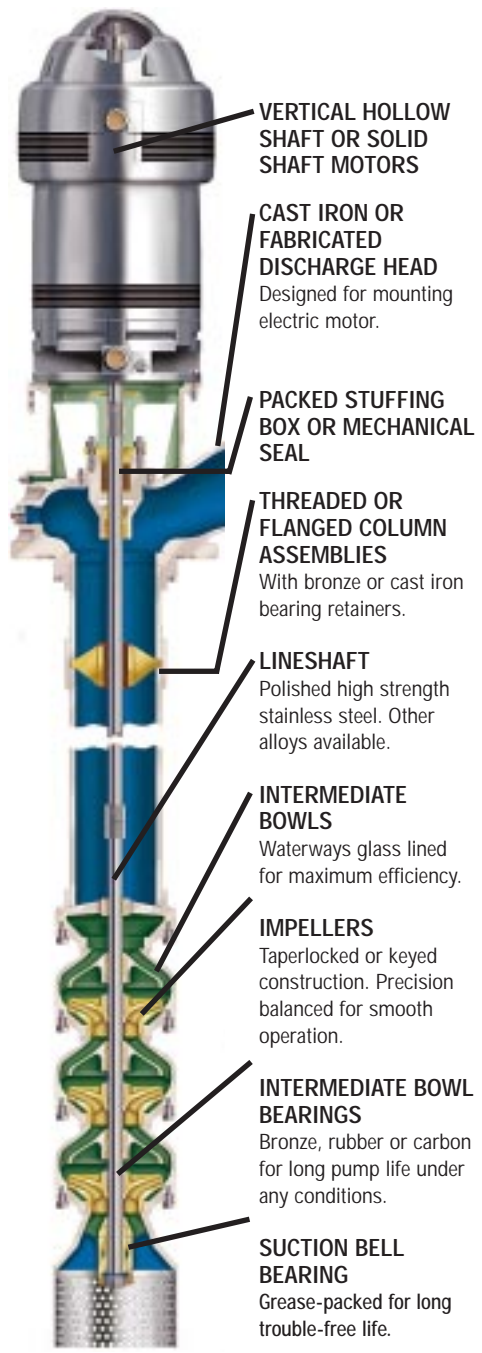
Column Assembly

- Lineshaft**
High strength steel. Ground and polished for exact bearing fit. Available in carbon steel or stainless steel.
- Bearing Retainer**
Bronze.
- Lineshaft Bearings**
Fluted rubber, designed to flush sand and grit rapidly.
- Column Pipe and Couplings**
Parallel thread, accurately machined for easy installation, accurate alignment.

LINESHAFT SHORT SET TURBINE

- Capacities to 9000 GPM (2043 m³/h)
 - Heads to 1400 feet (427 m)
- Consult factory for higher capacities

Design Flexibility
 Christensen offers a wide variety of design options to suit most any short set turbine applications.



- VERTICAL HOLLOW SHAFT OR SOLID SHAFT MOTORS**
- CAST IRON OR FABRICATED DISCHARGE HEAD**
Designed for mounting electric motor.
- PACKED STUFFING BOX OR MECHANICAL SEAL**
- THREADED OR FLANGED COLUMN ASSEMBLIES**
With bronze or cast iron bearing retainers.
- LINESHAFT**
Polished high strength stainless steel. Other alloys available.
- INTERMEDIATE BOWLS**
Waterways glass lined for maximum efficiency.
- IMPELLERS**
Taperlocked or keyed construction. Precision balanced for smooth operation.
- INTERMEDIATE BOWL BEARINGS**
Bronze, rubber or carbon for long pump life under any conditions.
- SUCTION BELL BEARING**
Grease-packed for long trouble-free life.

OIL LUBRICATION

1 Adjusting Nut

Permits exact impeller adjustment for maximum performance.

2 Large Capacity Manual or Solenoid Oiler

Assures constant oil supply.

3 Discharge Head

Heavy duty head provides maximum accessibility to service tube tension assembly. Two piece head shaft is standard.

4 Lock Ring

Positively locks adjusting nipple to discharge head.

5 Adjusting Nipple

Threads directly into column adapter. Headshaft stickup set exactly by threading head on column as required.

6 Tube Adapter Bushing

Bronze.

7 Double Bowl Seal-Optional

Provides positive sealing of developed head.

8 Pump Shaft

Oversized high strength polished stainless.

9 Discharge Bowl

Close grained cast iron. Relief ports insure positive bearing lubrication.

10 Discharge Bowl Bearing

Bronze. Close tolerance fit for minimum leakage.

11 Impellers

Silicon bronze. Designed for maximum efficiency. Precision balanced for smooth operation.

12 Intermediate Bowls

Close grained cast iron. Waterways glass lined for maximum efficiency.

13 Intermediate Bowl Bearings

Bronze or rubber for long pump life under any well conditions.

14 Lock Collets

Steel construction secures impeller to pump shaft.

15 Sand Collar

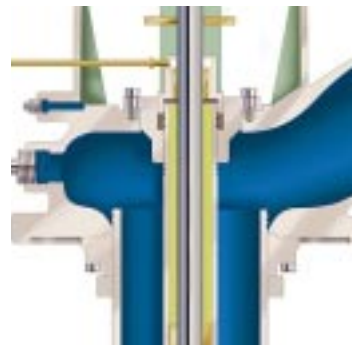
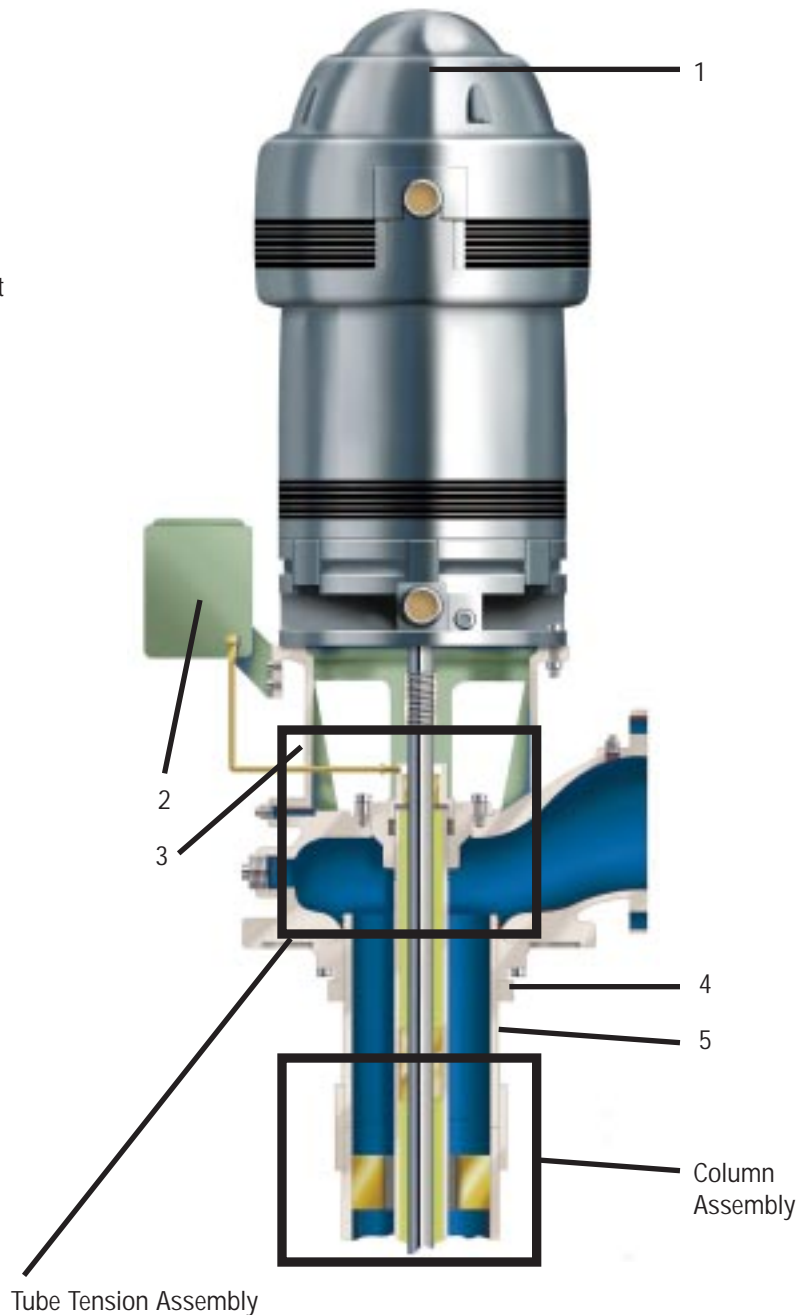
Accurately located at suction bowl bearing to eliminate possible sand buildup.

16 Suction Bowl Bearing

Bronze. Grease packed for long trouble-free life.

17 Tail Pipe or Strainer-Optional

Tail pipe cut to desired length for best suction conditions. Strainer provides protection from large solids.



Headshaft

Steel.

Tube Tension Nut

Heavy Duty Cast Iron.

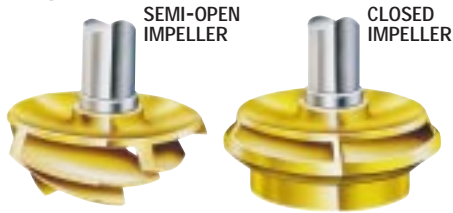
Tension Nut Bushing

Bronze construction. Spiral groove insures positive lubrication to lineshaft bearings.

Heavy Duty Tension Plate

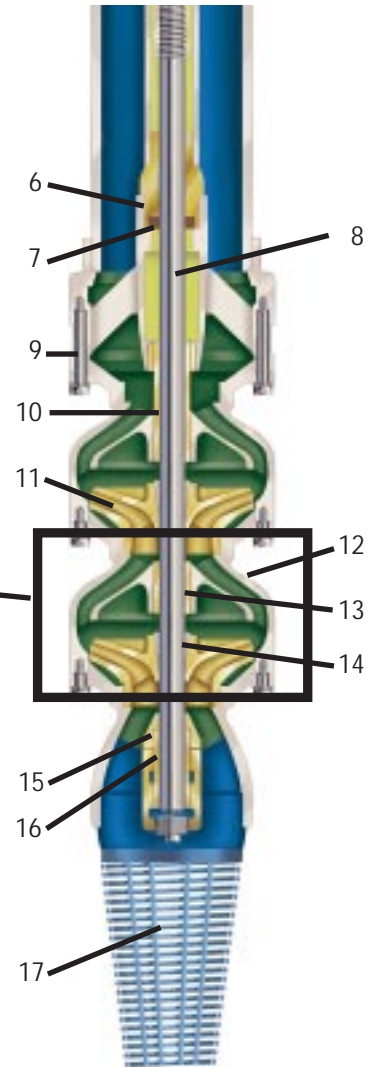
For positive alignment of lineshaft bearings.

Impellers

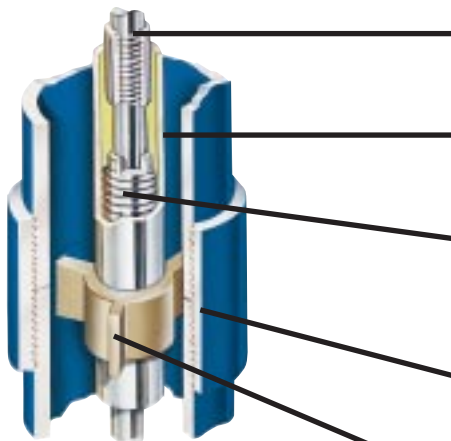


Glass Lined Bowls

Heavy duty Class 30 cast iron intermediate bowls with standard feature of lined waterways for maximum efficiency and wear protection.



Column Assembly



Lineshaft

High strength steel. Ground and polished for exact bearing fit.

Enclosing Tube

Extra heavy steel tubing for positive bearing alignment.

Enclosed Lineshaft Bearings

Bronze Construction—
High strength bearing bronze, spiral grooved for positive lubrication.

Column Pipe and Couplings

Parallel thread, accurately machined for easy installation, accurate alignment.

Tube Centering Spider

Stabilizes enclosing tube for smoother operation.

Bronze Construction



Type "F"
Head



Type "U"
Discharge
Located
Underground



Type "T"
Suction Inlet
Located in the
Head



Type "L"
(Can)
Suction Inlet
Located in the
Can

Standard Materials of Construction

No.	Description	Material
1	Discharge Head	C.I. ASTM A48, CL 30B
2	HeadShaft	Water Lube
		Oil Lube
3	Adjusting Nut	Stainless-ASTM A582, Type 416
4	Gib Key	Steel-AISI C1045
5	Adjusting Nut	Ductile Iron-ASTM A536, Gr. 65-45-12
6	Tension Nut	Mild Steel-ASTM A108, Gr. 1018
7	Tension Nut Bushing	Oil Lube Only
8	Tension Nut	Cast Iron-ASTM A48, CL 30B
9	Tension Plate	Oil Lube Only
10	Oiler Body	Oil Lube Only
11	Stuffing Box	Oil Lube Only
12	Stuffing Box Bushing	Water Lube
13	Stuffing Box Stud	Water Lube
14	Stuffing Box Stud Nut	Water Lube
15	Stuffing Box Washer	Water Lube
16	Stuffing Box Gasket	Water Lube
17	Stuffing Box Split Gland	Water Lube
18	Stuffing Box Slinger	Water Lube
19	Packing	Graphited Acrylic Yarn
20	Column Nipple	Pipe-ASTM A53
21	Lock Ring	Ductile Iron-ASTM A536, Gr. 65-45-12
22	Reducer - Bushing	Cast Iron-ASTM A48, CL 30B
23	Companion Flange	Cast Iron-ASTM A48, CL 30B
24	Companion Flange Gasket	Garlock Brand Blue Guard
25	Nameplate	Stainless-ASTM A240, Type 316
26	Sole Plate	Steel Plate-ASTM A283, Gr. D
27	Column Pipe	Pipe-ASTM A53
28	Column Coupling	Pipe-ASTM A53
29	Tube Nipple	Pipe-ASTM A120
30	Enclosing Tube	Bronze Construction
31	Oil Tube Coupling	Steel-SCH80, ASTM A120, Gr. B
32	Lineshaft Bearing	Bronze Construction
33	Lineshaft	W/L-Chrome Spot
		W/L-Stainless
		Oil Lube
34	Lineshaft Chrome Spot	Water Lube Only
35	Lineshaft Coupling	Water Lube
		Stainless
36	Water Lube Retainer	Retainer
		Insert
37	Tube Centering Spider	Rubber
38	Discharge Bowl	Cast Iron-ASTM A48, CL 30B
39	Discharge Bushing	Water Lube
40	Throttle Bushing	Oil Lube
41	Intermediate Bowl	Cast Iron-ASTM A48, CL 30B, Enameled
42	Top Inter Bowl	Cast Iron-ASTM A48, CL 30B, Enameled
43	Inter Bowl Bushing	Bronze
		Rubber
44	Wear Rings - Optional	Inter Bowl
		Impeller
45	Impeller	Silicon Bronze-ASTM B584 C873
46	Taper Lock	Mild Steel-ASTM A108, Gr. 1018
47	Suction Bowl	Cast Iron-ASTM A48, CL 30B
48	Suction Bushing	Bronze-ASTM B584 C903
49	Sand Collar	Bronze-ASTM B584 C903
50	Suction Strainer	Hot Galvanized-ASTM A123
51	Plug	Steel-ASTM A108, Gr. 1211
52	Screw Bearing	Bronze Construction
53	Bowl Shaft	Stainless-ASTM A582, Type 416
54	Hex Bolt	Steel-SAEJ 429, Gr. 8
55	Lock Washer	Steel-ASTM A108, Gr. 10180
56	Suction Adapter	Submersible Only
		Submersible Only (Optional)
57	Adapter Plate	Ductile Iron-ASTM A536, Gr. 65-45-12
58	Motor Coupling	Submersible Only
59	Motor Mounting Bolts	Submersible Only
60	Suction Screen	Submersible Only
61	Cable Guard	Submersible Only
62	Discharge Bearing	Submersible Only
63	Discharge Bearing Plug	Submersible Only
64	Upthrust Washer	Submersible Only



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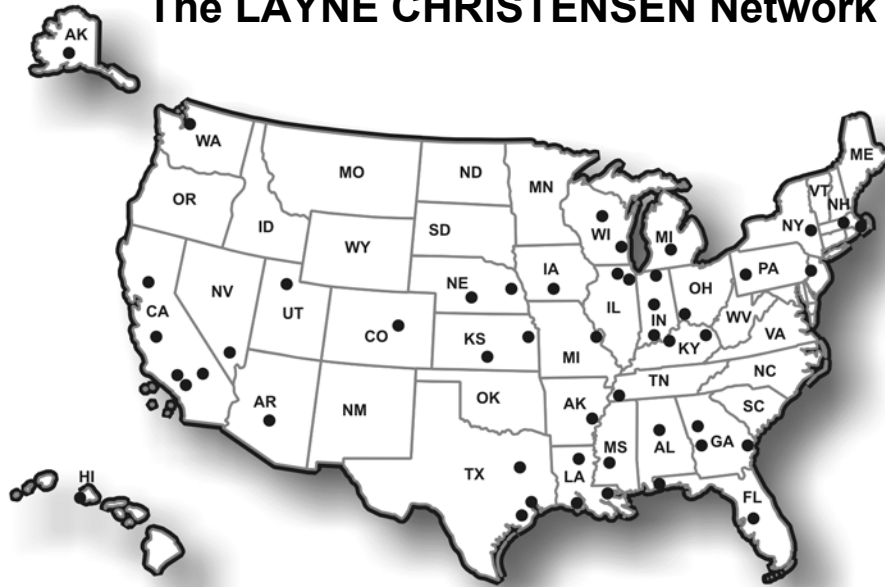
Christensen Pumps

A division of Layne Christensen Company

*Products to Serve
The
Municipal
Industrial and
Agricultural markets
complete with repair
components and parts.*



The LAYNE CHRISTENSEN Network



The Layne Christensen Company

Corporate Headquarters • 1900 Shawnee Mission Parkway • Mission Woods, KS 66205
For more information, call or write your nearest Christensen Pumps sales office or representative

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