

**DARLING**

Since 1888

**Sump and Sewage Pumps****DESIGN FEATURES****STOOL, BASE AND DISCHARGE ELBOW**

Cost Integrally.  
Permanent alignment

**REMOVAL OF PUMP FROM PIT**

Vertical flange face permits removal of pump without disturbing discharge piping.

**PIPING STRAINS ELIMINATED**

Connecting ell to discharge piping cannot distort pump bearings.

**PUMP PIPE**

Caulked in discharge ell eliminates piping strains on pump

**INTERMEDIATE BEARINGS**

Renewable bronze bush furnished for pits over 6'-0" deep.

**SHAFT**

Ground steel – Large diameter reduces vibration and assures long bearing life. Tapered end insures maximum strength and durability.

**TRASH GUARD**

Prevents stringy material winding around shaft.

**PUMP CASING (SCREENLESS DESIGN)**

Radial clearance around impeller passes solids and eliminates side thrust on bearing.  
Renewable wearing ring

**COVER**

Easily removable without disturbing discharge pipe or column.

**MOTOR**

CEMA Frame 40°C rise.  
Various makes interchangeable.

**FLEXIBLE COUPLING**

Absorbs shocks and vibrations and ensures silent operating.

**THRUST BEARING**

Relieves motor from all pump thrust.

**PACKING**

Protects pump bearings against dirt.  
Seals vapors in pit.  
Not subjected to discharge pressure.  
Liquid cannot be sprayed over motor.

**ALIGNMENT**

All parts positively located in position by machined spigots and checks.

**COLUMN**

Welded construction – No pipe thread to corrode – Water cannot be pumped up column.

**LOWER BEARING**

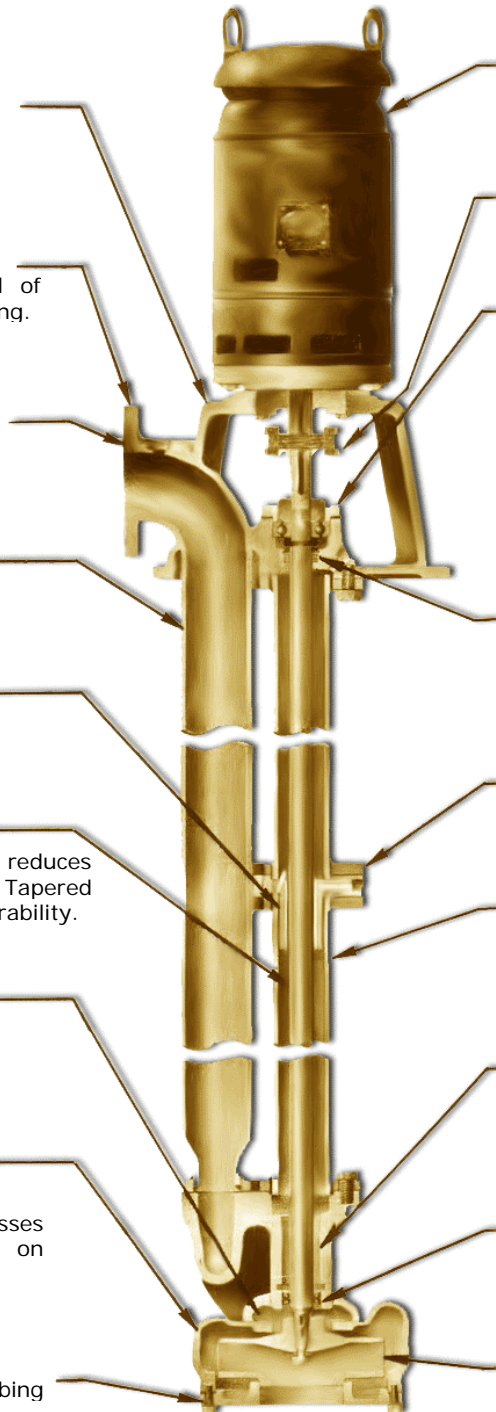
Self lubricated bronze bush.  
Shaft runs in grease bath.

**SEAL RING (DOUBLE)**

Grease sealed in – Water sealed out.  
Not subject to pump pressure.

**IMPELLER**

Screenless sewage type passes solids.



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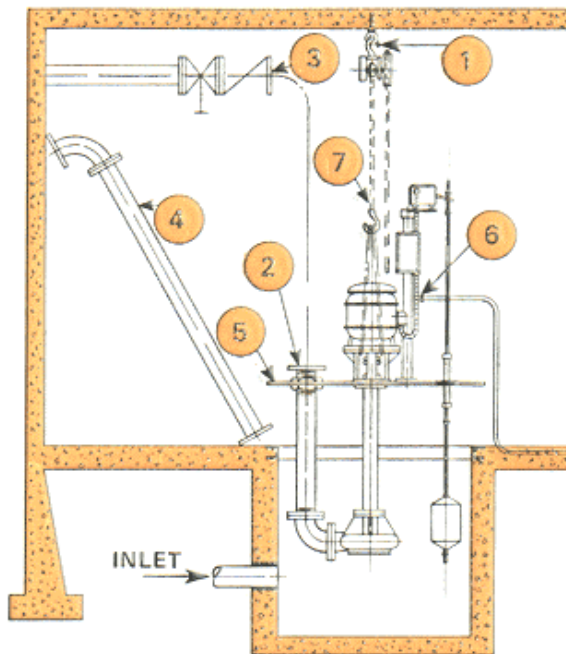
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## Sump and Sewage Pumps

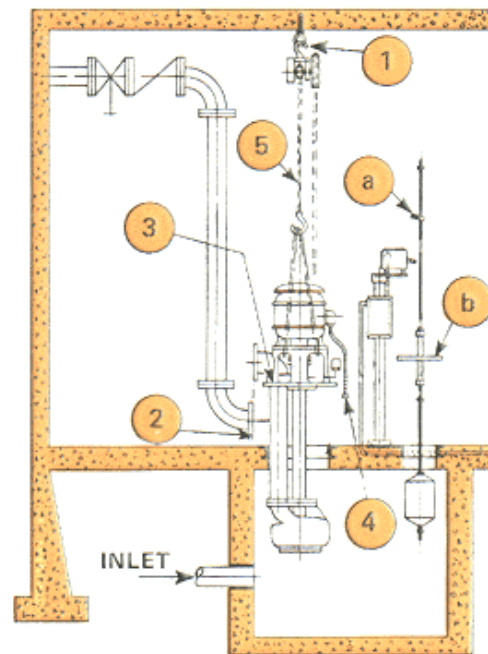
### MAINTENANCE FEATURES

Four new features have been incorporated into Darling designs to reduce maintenance and repair costs to the very minimum.

1. Adjustment of the impeller for wear at inlet is made in factory and thrust bearing will keep permanent adjustment and will relieve motor from all thrust.
2. A casing wearing ring of bronze is provided to simplify repair work should any wear take place (in all pumps except the smaller sizes of bilge pumps).
3. The discharge elbow has been made an integral part of the motor base casting and this, together with the pump discharge being located on top of the casing, positions the discharge pipe close to the pump shaft. The result is greater rigidity of the assembly (especially important during shipment) and a reduction in the pit opening required to only 9 1/2" for the smaller pumps and 20" for the larger ones.
4. Removal of the pump from the pit is now made by disconnecting only one pipe joint, a great improvement over former designs as can be seen from the comparison illustrated below.



OLD METHOD



NEW METHOD

#### To remove float:

1. Rig chain hoist
2. Remove discharge flange bolts
3. Remove elbow flange bolts
4. Remove length of discharge pipe
5. Remove pit cover bolts
6. Disconnect line leads and conduit
7. Hoist entire pump out

#### To remove pump:

1. Rig chain hoist
2. Remove discharge flange bolts
3. Remove elbow flange bolts
4. Remove length of discharge pipe
5. Remove pit cover cap screws
6. Disconnect line leads and conduit
7. Raise complete pump by chain hoist

#### To remove pump:

1. Rig chain hoist
2. Remove discharge flange bolts
3. Remove pump base cap screws
4. Disconnect motor leads from starter
5. Hoist pump out

#### To remove float:

1. Unbolt eye on float switch arm
2. Remove float cover bolts
3. Lift float assembly out by hand