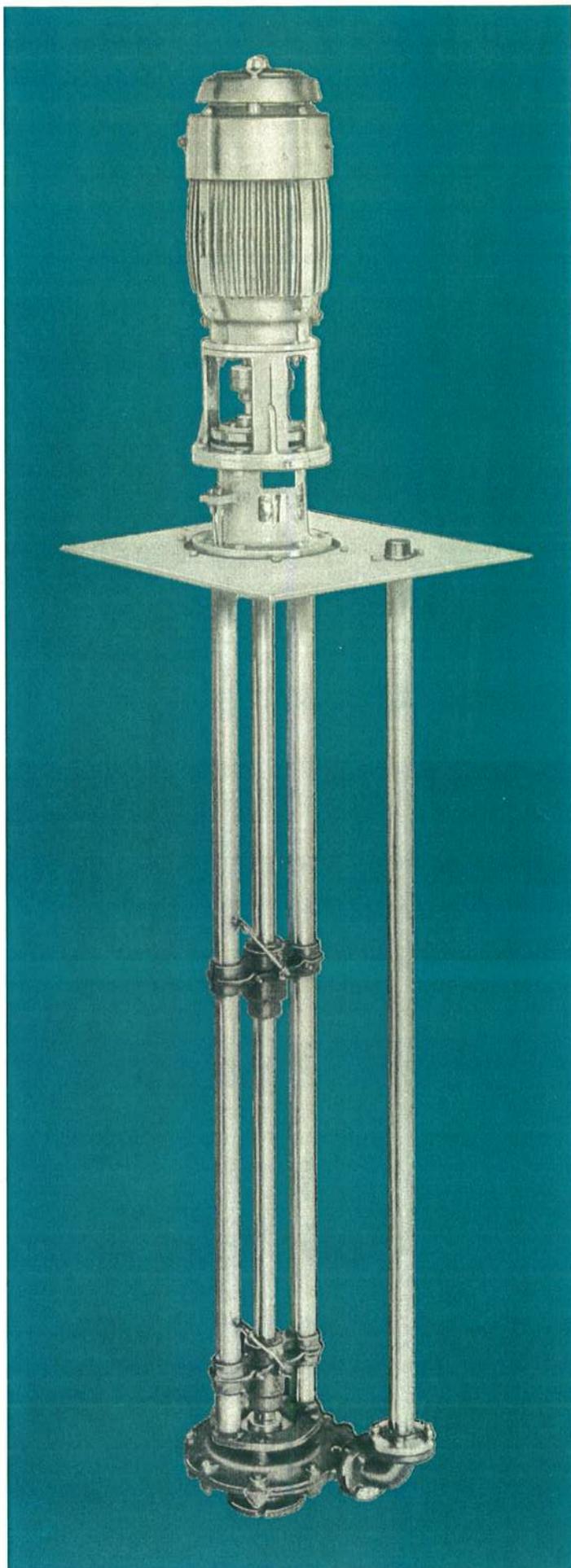


# **Nagle** Type "YWS" **Vertical** **Submerged** **Bearing** **Wet Pit** **Pumps**

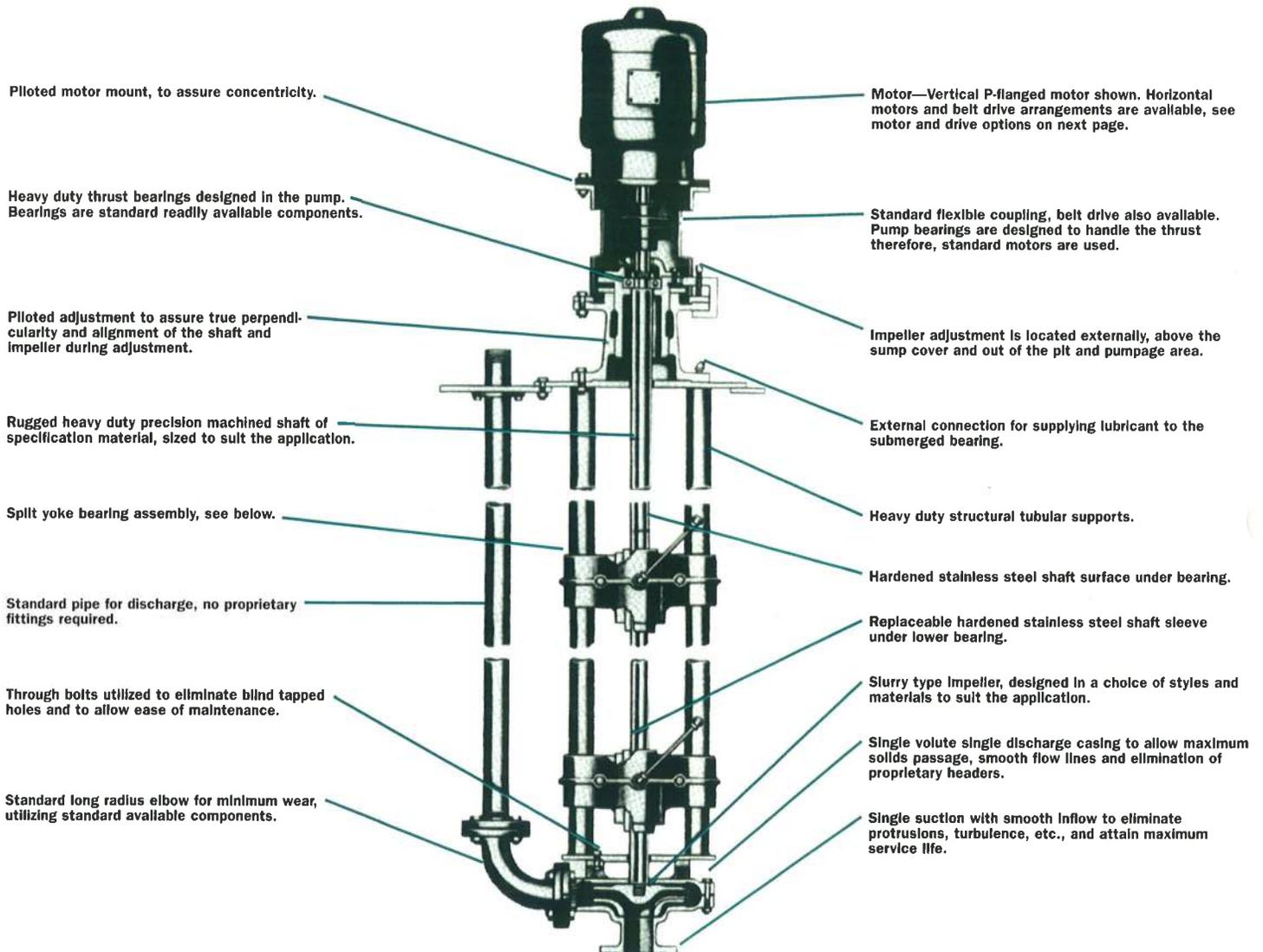


# Nagle Type YWS Units Offer These Advantages

The Nagle Type YWS pump is a single stage centrifugal slurry pump. It is available with bottom suction or optional top suction and is designed for wet pit use. The unit incorporates easy maintenance features, including split yoke bearing assemblies and lubrication of the lower bearing from above the floor plate. Pumps in this series are available in sizes from 1" to 20" for capacities to 10,000 gpm and pressures to 200 psi.

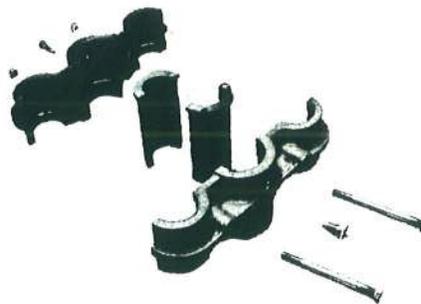
Through custom selection of impeller, casings and critical

components from a wide range of designs, Nagle is able to assure maximum service life and minimum maintenance, even in the most demanding applications. The materials of the wet end components are selected specifically for each application, and can be made from cast iron, manganese steel, ni-hard, HC-250, bronze, stainless steel, monel, hastelloy or any other commercially available alloy. Rubber and plastic coatings are also specified when required by the applications.



## Split Yoke Bearing Assembly

The submerged bearings consist of split sleeves mounted in a split yoke housing which is clamped across the heavy duty structural tubular supports. These are clamped by means of through bolts and bearing replacement is quick and simple with no need to disturb the casing and impeller. Changes can sometimes be made without removing the pump. This open bearing arrangement permits easier inspection and complete lubrication or flushing. The split yokes are held together by through bolts which can either be loosened or, if



necessary, burned, sawed or chiseled off if corrosion or age is a problem; an impossibility when attempting to remove conventional tapped-in studs.

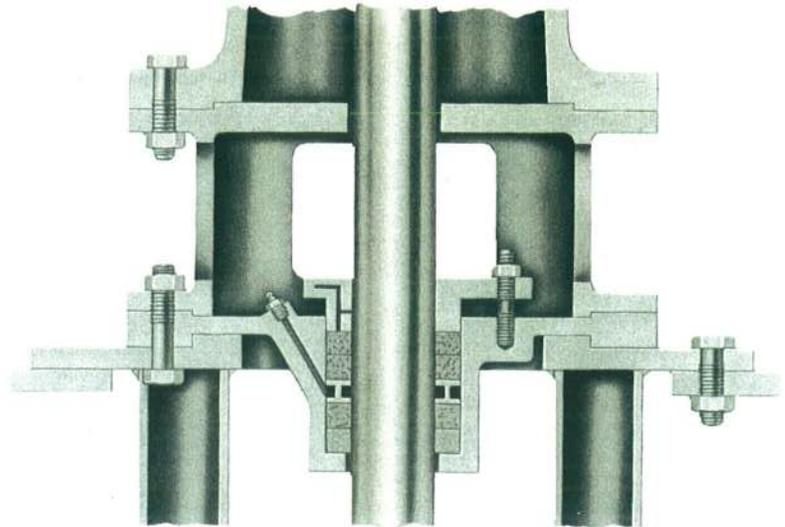
The bearing material itself can be micarta ni-resist, cutless rubber, babbit, bronze, stainless steel, cast iron, teflon, or any other available material suitable for the particular application. The method of bearing lubrication can be grease, water, oil or lubrication by the liquid which is being pumped.

## Tail Pipe



The addition of a tailpipe to the bottom suction of a YWS unit permits the use of a shorter setting pump which not only will reduce the price but also can mean a smaller size unit. In the case of a YWS pump, it can allow the lower bearing to be raised out of the area where the solids will settle and be of a larger concentration. The pump will draw down to the bottom of the tailpipe but will not prime again unless the liquid level comes back up to the center of the impeller. This is a perfectly satisfactory arrangement for liquid level control. Where the liquid contains rapidly settling solids, sump agitation or continuous operation with speed regulation, or some other method of flow control is necessary.

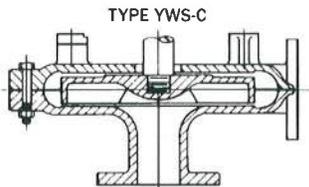
## Spacer Pedestal & Stuffing Box



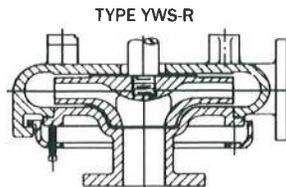
Overflow and fume protection for the thrust bearing is provided by the use of a spacer pedestal which is installed between the mounting cover and bearing pedestal. These are optional and can contain a cooling fan and guard arrangement. On occasion these spacer pedestals are necessary if the pump contains a belt drive arrangement with the motor hung on the pedestal itself.

These pedestals are also available with stuffing boxes as shown above. Some applications involve the necessity of an inert gas purge, the maintaining of a pressure in the sump, or the assurance that no foreign substances can enter the pumpage. The type of packing and lubrication is dependent upon the application. Occasionally a mechanical seal arrangement is necessary and can be adapted to our stuffing box.

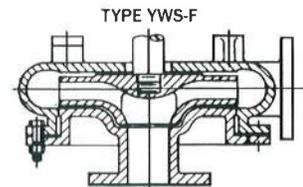
## Casing Options



Split casing design, bolted together around periphery, where frequent inspection is not necessary.

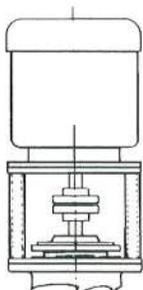


Ring clamp design with suction plate clamped into place by means of ring and set screws to provide easy inspection.



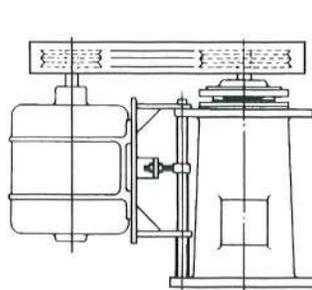
Flanged design, secured to casing by means of flanges and bolts, for high pressure applications.

## Motor and Drive Options



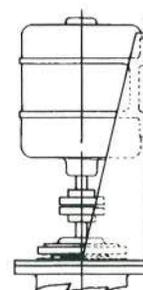
**DIRECT MOUNTED**

Many installations of vertical pumps utilize vertical motors directly flanged to the top of the pump and connected to the pump by means of a standard flexible coupling.



**BELT DRIVE**

A belt drive reduces the head room requirement, and is also very useful where operating conditions are subject to change. It permits a minor change of sheave sizes and belts to accomplish different pump speeds without altering the motor or impeller.



**BRACKET MOUNTED**

A bracket or chair mounting is available to permit the use of standard horizontal motors for direct connecting by means of a standard flexible coupling.

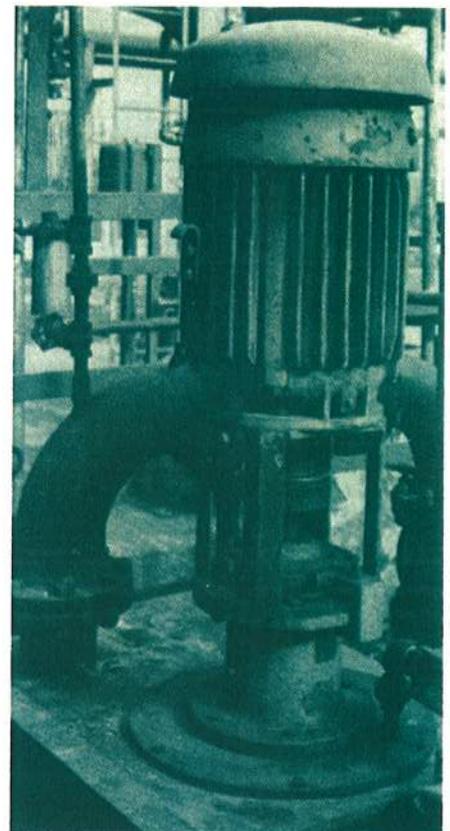
# Demanding Applications Prove Nagle Reliability



This Nagle 2 Type YWS-C Frame 71-HL pump with a 6'8" setting has been handling 100 GPM of carbide sludge from an acetylene generator in a Midwest metal working plant since 1962.



Shown above is one of four Nagle 6" Type YWS-R Frame 143-N pumps, each with an 11'4" setting. The water end was constructed of alloy HC-250 and the four pumps have been handling a total of 4,000 GPM of water and fly ash slurry since 1963 at a major power company.



This Nagle 5" Type YWS-C Frame 105-J pump has a 12' setting with the water end constructed of a special bronze material; and has been handling 500 GPM of an abrasive, corrosive pumpage at a chemical company since 1963.

## Typical specifications for Nagle "YWS" pumps

- Submerged bearings to be split and attached with a split yoke bearing assembly to allow bearing replacement without pump disassembly.
- Casing to be of single volute, single discharge, and of a slurry design with maximum metal sections.
- Impeller adjustment to be above the mounting plate and of a piloted design to assure concentricity and perpendicularity of the shaft and impeller within the casing.
- Bottom radial bearing to ride on a replaceable hardened stainless steel shaft sleeve for corrosion and abrasion protection under bearing.
- Pump bearings designed to withstand maximum possible thrust loads; therefore utilizing standard thrust motors and eliminating out-board bearings.
- Discharge elbow and pipe to be of standard available pipe and fittings eliminating special proprietary items.
- Through bolt construction to be utilized thus eliminating blind tapped holes and stud-type construction.
- Intermediate bearings to ride on a hardened stainless steel shaft surface for abrasion and corrosion protection.



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