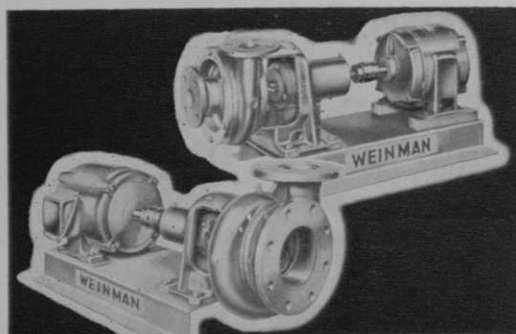


*Unit Is Practically
Trouble Free*

Centrifugal Pump Requires



Only Routine Maintenance

By **CLARENCE NORDSTROM**
Thomas Pump Co., Chicago, Ill.

The type of pump selected for a course irrigation system is dictated by the available water source. Wells as sources aren't too common, and so we will dwell on pumps that are used where the water source is a man-made reservoir, or where the supply is bought from a city pumping station.

A horizontal centrifugal pump is preferred when water is drawn from a reservoir or local source, although an end-suction type may be used. The latter is more economical than the horizontal unit, but is selected only where irrigation systems requiring smaller pumping capacities and discharge have been installed.

The horizontal centrifugal pump can

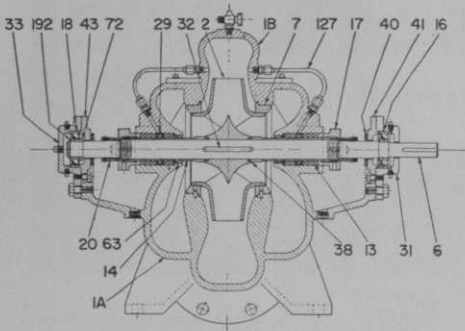
A split case centrifugal (Type L) pump made by Weinman Pump Mfg. Co., Columbus, Ohio, is shown in the top photo. Below is the single stage, end-suction type pipe, also a centrifugal unit.

be either a single or two-stage design type. It offers better hydraulic balance and is easier to maintain than the end-suction unit. It is my first recommendation when a course irrigation system is to be installed.

Packing Is Important

A centrifugal pump with cast iron bronze fitted construction (impeller and wear rings) is the most common unit and will hold up satisfactorily for several years without presenting major maintenance problems. Packing rather than mechanical seals should be used with this type of pump because of the pollution problem. Seals operate satisfactorily only when clean water, free of sand, silt and other foreign matter, is fed into the pumping system. Packing with hardened stainless steel shaft sleeves is more practical because it is relatively impervious to dirt. It should be noted, however, that ceramic

Details of the Horizontal Centrifugal Pump



- | | |
|------------------------------|-------------------------------|
| 1A Casing (lower half) | 32 Impeller key |
| 1B Casing (upper half) | 33 Bearing housing (outboard) |
| 2 Impeller | 38 Shaft sleeve gasket |
| 6 Shaft | 40 Deflector (liquid) |
| 7 Casing ring | 41 Bearing cap (inboard) |
| 13 Packing | 43 Bearing cap (outboard) |
| 14 Shaft sleeve | 63 Stuffing box bushing |
| 16 Bearing (inboard) | 127 Seal piping |
| 17 Stuffing box gland | 192 Retaining ring bearing |
| 17A Seal cap | |
| 18 Bearing (outboard) | |
| 20 Shaft sleeve nut | |
| 29 Seal cage | |
| 31 Bearing housing (inboard) | |

coated shaft sleeves have given better service in many instances than even stainless steel.

75 Horsepower Average

The average golf course sprinkler pressure is around 150 psi and, although it varies, the horsepower for an 18-hole system is approximately 75. Some, however, run as low as 40 hp and some as high as 150. An installation made by our firm at Silver Lake CC, Orland Park, Ill., last spring was a 50 hp, two-stage horizontal split case centrifugal pump that sprinkles as many as 18 greens, some of which are 1,000 yards away.

Centrifugal pumps actually don't require much maintenance. If bearings are lubricated, packing replaced and the

strainer cleaned as often as two times a year under normal circumstances, little trouble will be encountered. If this is done regularly, this type of pump will continue to give good service indefinitely. If a bearing has to be replaced, there is no reason why the course maintenance department can't handle the replacement. But if the impeller and wear rings need to be replaced, the supt. should have it done by a service man from the manufacturer which makes the pump.

Clarence Nordstrom is president of the Thomas Pump Co., 407 S. Dearborn St., Chicago 60605, a firm which represents Weinman Pump Manufacturing Co. and U.S. Pumps, Inc., in the northern Illinois area.

Sectional View of End-Suction Pipe

Large size steel shaft (1), accurately machined, eliminates deflection or vibration. Sealed, oversize ball bearings carry both radial and thrust loads. Stuffing box (7) with bronze glands and studs uses seven rings of packing unless furnished with lantern ring for grease or fresh water seal. A bronze sleeve (6) protects the shaft passing through the stuffing box. Impeller (5) is regularly enclosed type. Renewable wearing ring (4) provides means to compensate for wear and resulting leakage at the impeller inlet.

One-piece metal frame (2) has drain pocket for collecting stuffing box leakage which can be piped to the drain. Volute (3) are streamlined for maximum efficiency and tenoned into the power frame.

