Peerless Pump

Horizontal Hydroconstant Variable Speed Drives

The Peerless Pump Hydroconstant Drive produces years of accurate, variable speed pumping. When your machine is running at less than its maximum design conditions, Peerless Pump Hydroconstant Drives cuts power consumption. This results in substantial energy cost savings. With four models to choose from, you can be assured of a reliable, cost effective Hydroconstant driven machine, independent of the type of pump you have.

Applications

These drives have been used successfully for over 40 years in applications requiring a constat system pressure in hospitals, industrial parks, high rise buildings and process plants. These drives adjust a constant input speed into a variable output speed to maintain constant system pressure while compensating for variable suction pressure.

Features

Type MP Drives are space saving drives with both the motor and the pump close coupled to the Hydroconstant Variable Speed Housing. The pump is a Peerless Series C end suction type. The Type MP drive unit **comes completely assembled** at the factory, requiring only simple electrical and piping connections on installation.

Type M Drives feature a compact conventional base mounting witha motor close coupled to the drive. The pump is **base mounted and flexibly coupled** to the Hydroconstant drive. The model combines with any type of Peerless base-mounted pump - single-stage horizontal split case, end suction, or horizontal multi-stage. The **Type M Drive** offers **good space untilization** combined with a wide range of applications for different pumps.

Type MX Drives have a compact conventional base mounting with a pump close coupled to the drive. The pump is a Peerless Series C end suction type. This arrangement is particularly useful in **50 Hz power areas** where NEMA motors are not normally used. In addition, the Type MX can be used in some close coupled pump applications where the horsepower is above the limits for the Type M or Type MP models.

Type MO Drives are versatile in selection of motor/pump combinations. The Type MO Drive features a pump, moto and Hydroconstant Variable Speed Drive **all mounted on a common steel base**. The drive is flexibly coupled to both the motor and the pump. The motor is a horizontal type available in all standard NEMA enclosures. Choose from end suction, horizontal single-stage or multi-stages split case pumps. Because of the wide variety of motor and pump types you can combine with the Type MO Drive, you can meet your application requirements.

Quality Engineering

Peerless Pump designs tough, versatile products to meet your pumping needs. The Peerless Pump line of Hydroconstant Drives deliver **variety**, **durability**, **standardized options** and **configurations** unequalled in the industry. Please contact your local authorized Peerless Pump sales office to find out more about Hydroconstant Drives, options and prices.

PEERLESS PUMP®

Peerless Hydroconstant Drives

How it works.

Hydroconstant drives vary pump or fan speed to hold constant a system condition. Sensing, local or remote can be used to control:

- Single point pressure
- Flow
- Liquid level
- Differential pressure
- Temperature

It works on a hydrokinetic principle, using hydraulic oil for torque transmission.

In essence, it works like this:

1. An impeller mounted on the input shaft is coupled to a runner mounted on the output shaft by the hydraulic oil shared between them. At maximum oil levels, the output shaft speed is about 97% of the full load input shaft speed. As lesser amounts of oil are shared between the impeller and the runner, the output shaft runs porporionally slower.

2. In operation, a driver turns the input shaft that's fastened to the impeller. The runner is mounted on the output shaft close to and facing the input impeller. This output runner is enclosed by a cover which is mounted on and turns with the input impeller.

3. A nozzle directs hydraulic oil into the cover chamber. The speed of the Hydroconstant drive's output shaft is regulated by the position of the splitter arm (between the nozzle and the cover) which controls the amount of oil directed into the cover chamber. The splitter is spring loaded in one direction; its position is changed by an opposing load control device.

4. To accelerate the output runner and shaft, the splitter maximizes the flow of the oil into the cover chamber. (See figure A)

5. At constant speed, the oil is delivered into the cover chamber at the same rate that the oil is discharged through the cover's orifices around its periphery. (See figure B)

6. To decelerate the runner, the splitter minimizes the flow of oil into the cover chamber. (See figure C)

Several control devices are available. They sense and respond to a deviation from a present value in pressure, temperature, liquid level, flow or differential pressure.

Speed Change Sequence

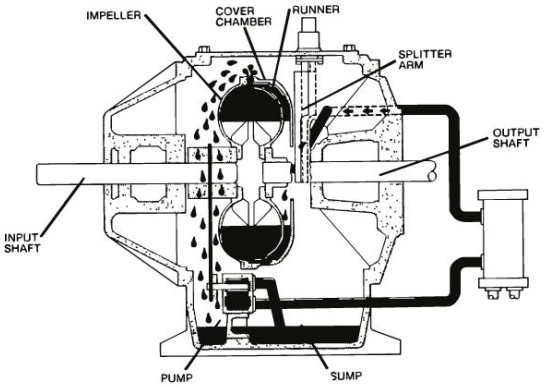

FIGURE A–ACCELERATION MODE

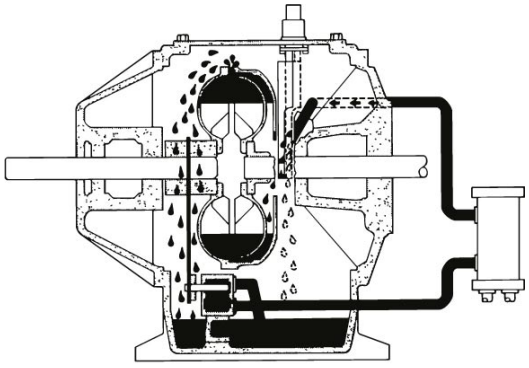

FIGURE B–CONSTANT SPEED MODE

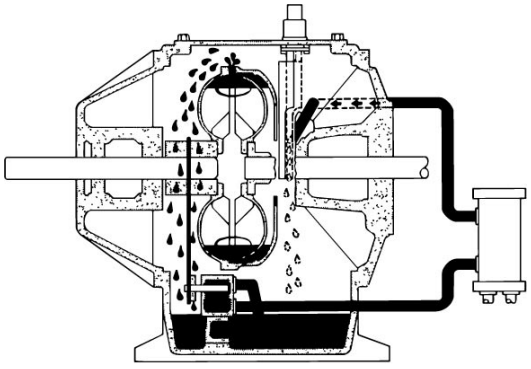

FIGURE C–DECELERATION MODE

Through the automatic adjustments of the splitter arm's position, it can move the sensed value toward its present reference value by acceleration or deceleration of the output shaft.

Peerless Pump Company
P.O. Box 7026
Indianapolis, IN 46207-7026
(317)925-9661, Fax: (317)924-7388
www.peerlesspump.com

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