

HENFEL variable speed hydrodynamic **COUPLINGS**



AHHVV

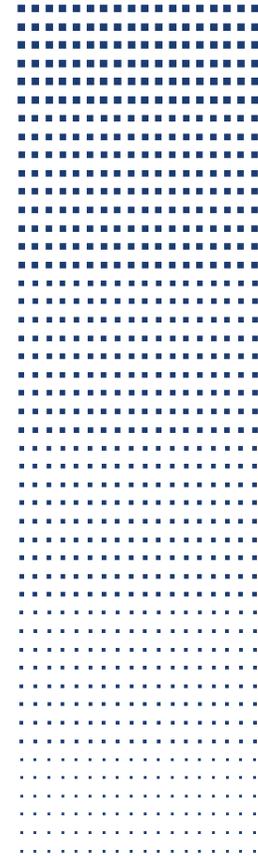
Our Vision

RINGFEDER POWER TRANSMISSION is the global market leader in niche markets in the power transmission industry, strongly preferred for its customised, need-based solutions that provide customers with outstanding and worry-free operation.



Our Mission

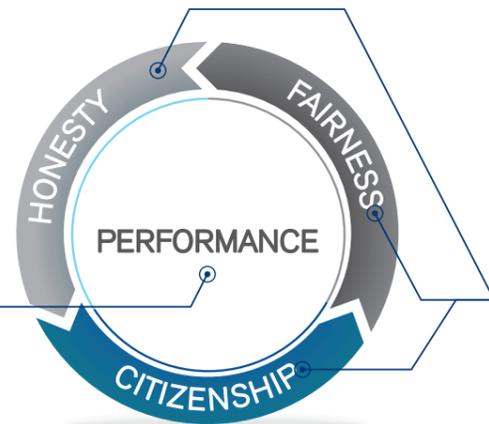
With all our energy we pursue the target to establish RINGFEDER POWER TRANSMISSION as the best solution on the market - wherever something is turning, moving or shaking.



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Our Core



Our Values

Our Slogan

Partner for Performance



ABOUT US

1

2.1 VARIABLE SPEED HYDRODYNAMIC COUPLINGS

The AHHVV variable speed hydrodynamic couplings are applied on drives which require reliability, efficiency and economy to the production. Since their utilization provide advantages such as energy savings, motor and driven equipment increased life and maintenance reduction, they guarantee the economical return of the project's investment.

TECHNICAL
INFORMATION

2

PRINCIPLES OF OPERATION

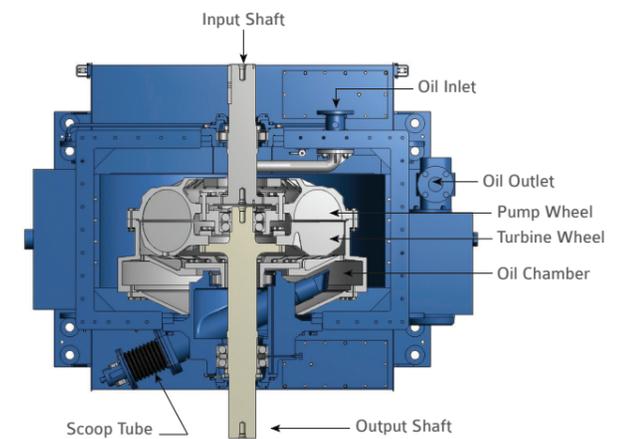
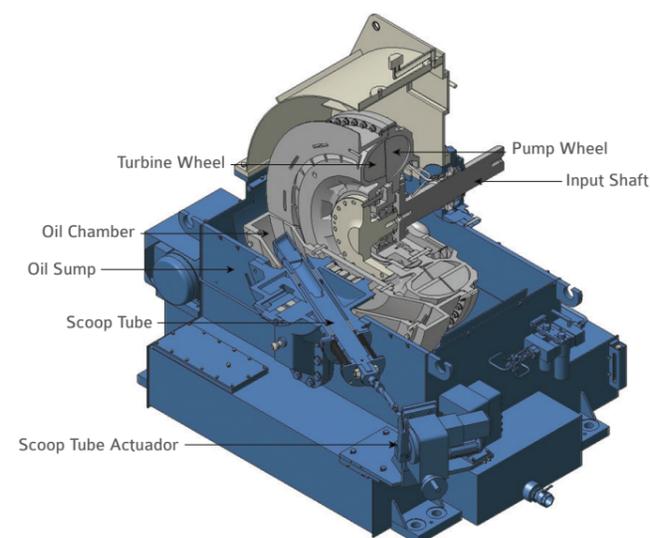
The AHHVV variable speed hydrodynamic couplings are applied connecting the prime mover (in most cases an electric motor) and the driven machine. They transmit power by means of the kinetic energy from the fluid circulating inside a working chamber which is between the pump wheel, connected to the input shaft, and the turbine wheel, connected to the output shaft.

The operating fluid flow transmits torque with no mechanical contact whatsoever and free of torsional vibrations that is resulted from the power input and output operations.

> **H**enfel develops and manufactures mechanical products for power transmission, such as flexible couplings, constant and variable speed hydrodynamic couplings, besides a complete line of bearing housings. The company serves the strictest industrial segments, such as mining, steel, cement, sugar and ethanol, pulp and paper, oil and gas, among others.

The company is a division of RINGFEDER Power Transmission division, which with its premium brands RINGFEDER and GERWAH, is one of the world leaders when it comes to locking assemblies, shrink discs, friction springs and industrial couplings and their applications.

The synergies that result of this alliance adds many competences to the group and it is an important step towards serving customers with a complete range of solutions for power transmission drive systems and braking systems.



2.2 MAIN APPLICATIONS

Power Plants	<ul style="list-style-type: none"> Fans Pumps 	Siderurgy	<ul style="list-style-type: none"> Fans Impulsors Air compressors Turbo-compressores
Mining	<ul style="list-style-type: none"> Slurry pipeline Belt conveyors 		<ul style="list-style-type: none"> Water supply pump Elevation pumps Sewage pumps
Chemical Industry	<ul style="list-style-type: none"> Fans Pumps Mixers Centrifuges 	Paper Industry	<ul style="list-style-type: none"> IDFan Water pumps Gas treatment fans
Petrochemical Industry	<ul style="list-style-type: none"> Pumps Compressors Oil pipelines 		

ADVANTAGES

- Adjustable speed control of the driven machine during the operation;
- Realization of special operational conditions, such as: load free start up, starting torque limitation, acceleration and deceleration limitation and precise rotation adjustments with no oscillations;
- Easy operation and low maintenance;
- Wear-free power transmission with no mechanical contact through hydrodynamic energy of the operating fluid;
- Smooth acceleration of heavy masses;
- Increase drive and driven machines service life;
- Suitable for a wide variety of climate conditions;
- Absorption of torsional vibrations and shock loads;
- Low investment cost;
- External control elements with easy maintenance;
- External low maintenance / low cost components, such as the fluid pump that has common motorization ;
- External control panel with IP66, with easy maintenance;
- Scoop tube control activated by 4 to 20 mA signal in IP 66, which provides easy maintenance conditions;
- Self supporting structure. They are connected to the machines by elastic shaft couplings.

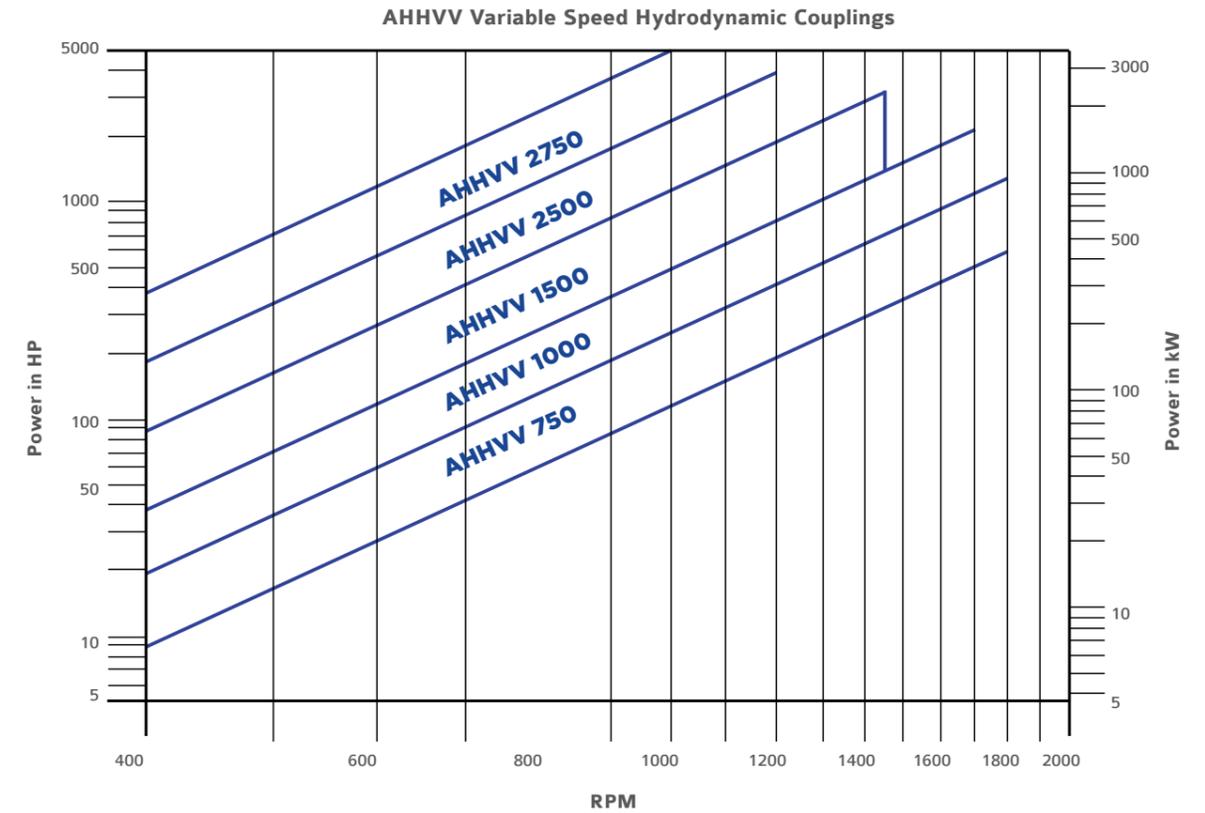
2.3 CHARACTERISTICS

DESCRIPTION

The AHHVV variable speed hydrodynamic couplings have split housing where the internal components are set, such as pump and turbine wheels and their shafts. The main motor and the driven machine are connected to it by elastic couplings. The fluid sump is integrated into the housing, and the oil is pumped by an external pump with independent drive motor. That contributes to simplify the maintenance whenever it is necessary. The shafts are supported by bearings that are continuously force lubricated and monitored. The oil cooler varies according to the application, and it can be Air-Oil type, Water-Oil Type, etc.

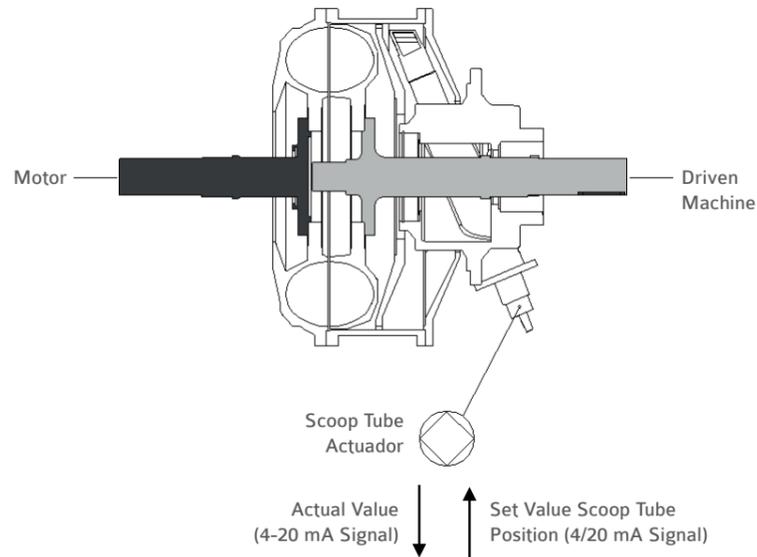
SELECTION GRAPH

The selection graphic presented below serves only as a pre-selection guide. The correct selection of the couplings depends of specific technical information of the application, which is provided by the customer. Please, contact HENFEL's application engineering department for an accurate selection.



Variable speed hydrodynamic couplings can control the speed of driven machines. In many cases, this control is automatically integrated to the system via PLC/SDCD, commanded by the user's process parameters.

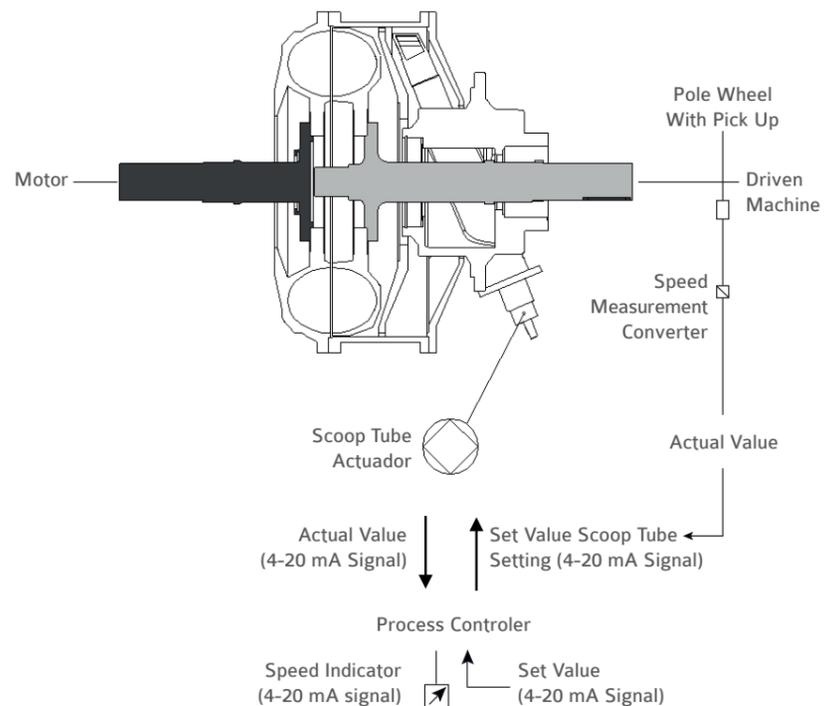
EXAMPLE 1: Position Control Circuit



Position of the Control Circuit Components:

- Scoop tube actuator including position control for continuous control operation

EXAMPLE 2: Process Control Circuit

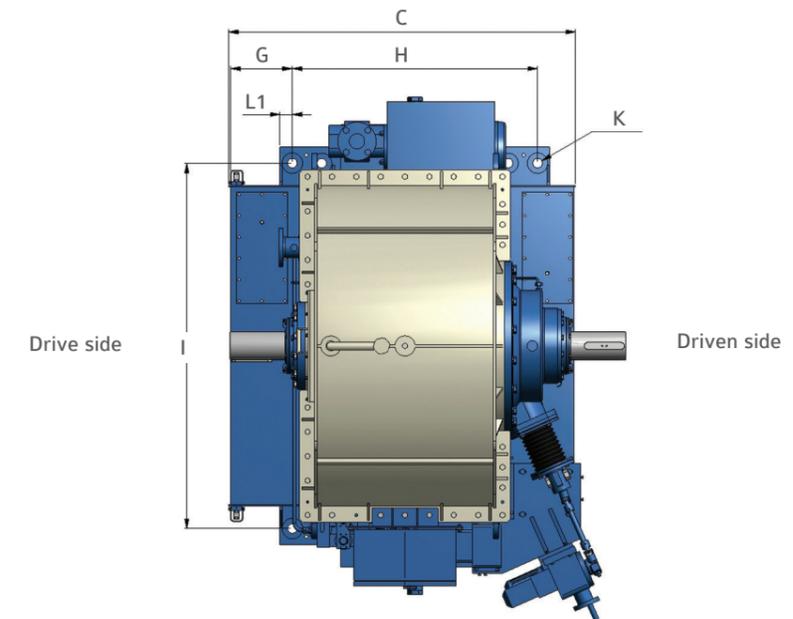
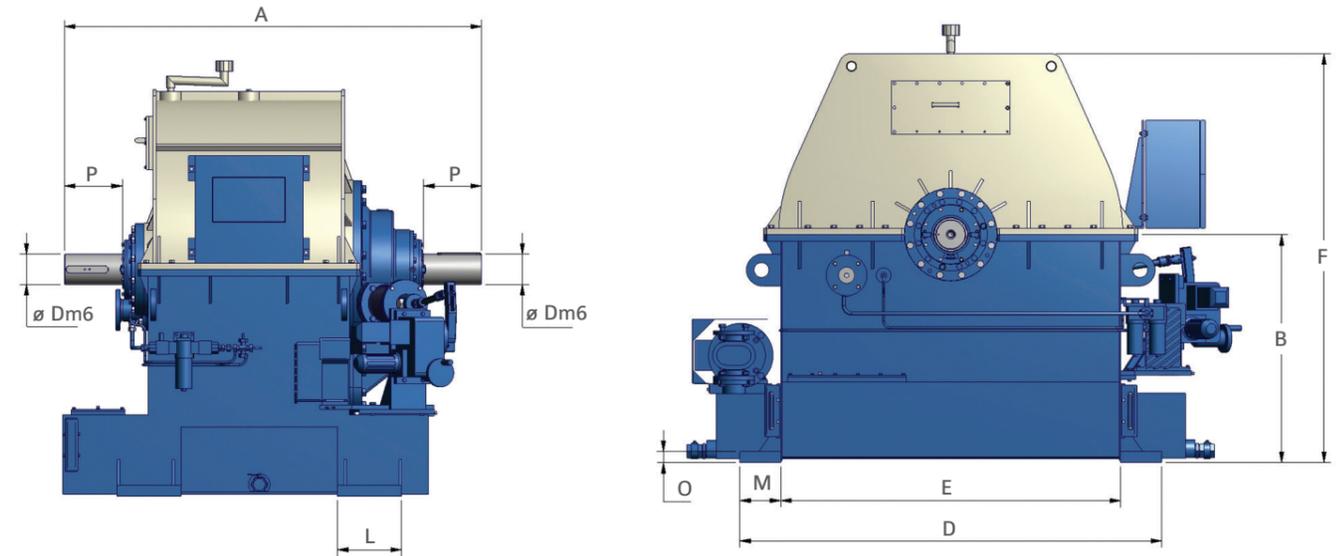


Process Control Circuit Components:

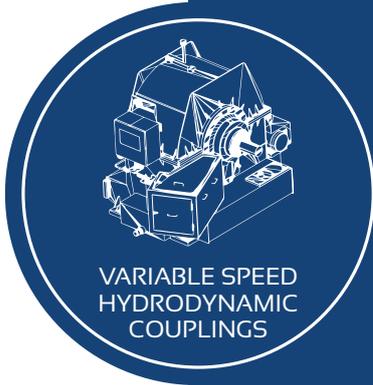
- Process controller
- Scoop tube actuator including position control for continuous control operation

If the speed is to be used as a process value, or if it is to be displayed or incorporated, a speed measuring device is required.

Similar to the speed, a process value (pressure, flow, etc.) can be incorporated into a control circuit. Then this process value can be used as set value.



COUPLING SIZE	WEIGHT WITHOUT OIL (Kg)	OIL LOAD (L)	A	B	C	øD	D	E	F	G	H	I	K	L	L1	M	O	P	DIN 6885 FEATHER KEY	FIXATION BOLT
750	1200	350	1325	725	1330	85m6	1350	1110	1317	238	740	1250	40	190	134,7	120	42	170	22 x 14	M36 X 630
1000	1300	350	1325	725	1330	85m6	1350	1110	1317	238	740	1250	40	190	134,7	120	42	170	22 x 14	M36 X 630
1500	2500	500	1750	850	1600	120m6	1500	1280	1540	325	930	1400	40	230	100	110	50	230	32 x 18	M36 X 630
2500	4000	780	1950	1060	1710	140m6	1960	1580	1900	380	1135	1800	48	300	138	190,5	50,8	270	36 x 20	M42 x 630
2750	4200	780	1950	1060	1710	140m6	1960	1580	1900	380	1135	1800	48	300	138	190,5	50,8	270	36 x 20	M42 x 630



MAIN ADVANTAGES:

- Fast adjustable speed control of the driven machine during the operation;
- Realization of special operational conditions, such as: load free start up, starting torque limitation, acceleration and deceleration limitation and precise rotation adjustments with no oscillations;
- Easy operation and low maintenance;
- Wear-free power transmission;
- Smooth acceleration of heavy masses;
- Increase drive and driven machines service life;
- Suitable for a wide variety of climate conditions;
- Absorption of torsional vibrations and shock loads;
- Low investment cost;
- External control elements with easy maintenance;
- External low maintenance / low cost components;
- External control panel with IP66, with easy maintenance;
- Scoop tube control activated by 4 to 20 mA signal in IP 66;
- Self supporting structure.

Partner for Performance



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