



Maschinentechnik

Our centrifugal force creates dynamism



# Offering transmission solutions - since 1982.



Susanne Weritz  
Director of the company



Siegfried Schal  
Business manager

## Powerful clutches don't know slippage – centrifugal force is our objective

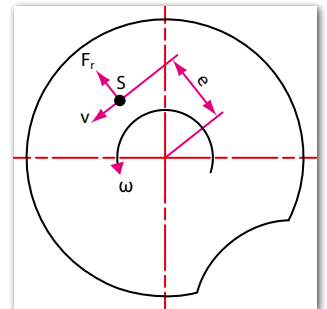
**Amsbeck-Maschinentechnik GmbH is the leading manufacturer of clutches and brakes the design principal of which is based upon the elementary and proven principle of centrifugal force.**

The technical basis behind our product is that derived by Christian Huygens in 1669 that radial forces ( $F_r$ ) will be generated when a mass is rotated and in accordance with the formula

$$T = F_r * \mu * r \text{ [Nm]}$$

we provide torque.

The engagement and disengagement of our clutches and brakes is solely determined by the speed of the revolutions and is automatic. There is no requirement for electrical, hydraulic or pneumatic supply or the control systems to support them.



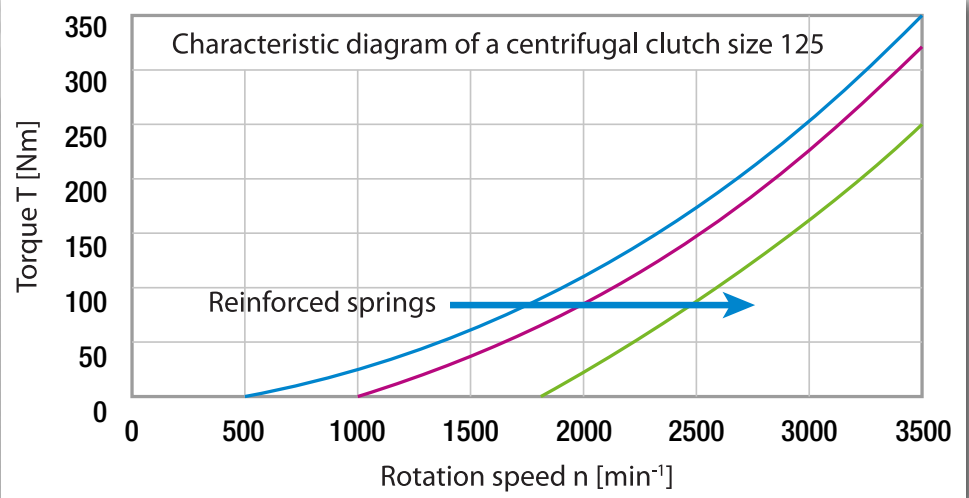
Since 1982 we have developed and supplied a large volume and very diverse range of clutches and brakes for power transmission applications.

Our team of approximately 30 employees work to produce and market worldwide 80 up to 100 thousand items per year. The current range have sizes ranging from 60 to 200 mm diameter capable of transmitting torques from 2 to 2000 Nm.

We are continually developing products for immerging markets and innovative applications that require reliability and cost effective solutions.

Our products meet the safety and dynamic requirements

Provide us with your clutch or brake problem and we shall find the perfect solution.



Torque v Speed diagram of a 125 clutch fitted with three alternative spring options to provide engagement speed choice.



Since 1982 our team in Everswinkel located in the heart of Münsterland have been designing and supplying innovative solutions for

## clutch and brake applications based on the principals of centrifugal force.

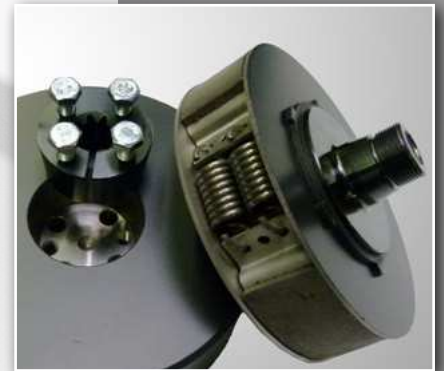
### Operating principal:

Elements of mass known as flyweights are held in place by spring force. Under rotating conditions a centrifugal force is developed, as the speed increases the force of the springs is overcome. The flyweights come into contact with the bore of the surrounding drum and start to accelerate the load, the higher the speed the greater the centrifugal force and resulting torque is transmitted.

Used as a brake the drum is a fixed component which controls the maximum speed of the load. The centrifugal force, flyweight radius, coefficient of friction of the linings determine the torque capacity. (diagram no 1).

By adjusting the combination of spring tension, number of flyweights, friction material, size, running speed and engagement speed the torque capacity can be reached to meet individual requirements.

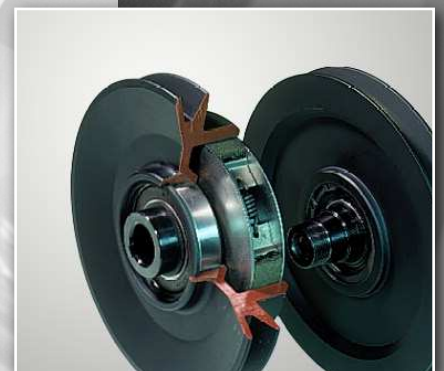
Whenever the centrifugal force is less than the spring force the clutch or brake will be free to rotate without transmitting torque.



Centrifugal clutch offering direct engine flywheel mounting



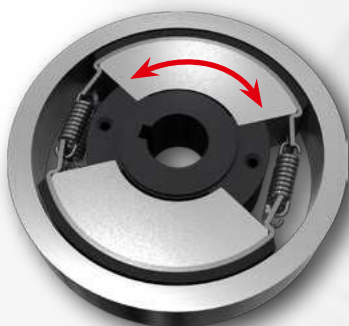
Centrifugal clutch offering manual belt tightening option



Centrifugal clutch with vee belt pulley drive



Centrifugal clutch combined with high flexibility coupling



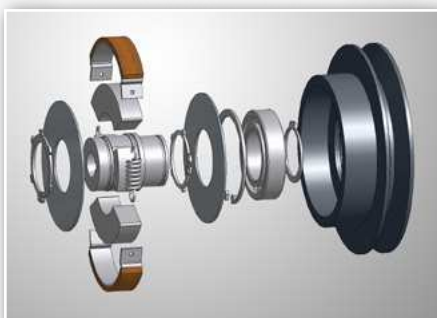
Basic version with dovetailed flyweights



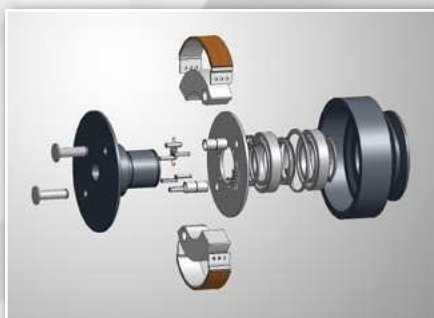
Pivoting flyweight version

In the **basic version** the centrifugal flyweights are sat in a dovetailed seat machined into the hub. Torque is transmitted in either direction of rotation. The friction material is glued onto steel linings which fit closely around the flyweights and held in place by the springs. At the designated speed the whole of the friction lining is in contact with the surrounding drum.

In the **"Pivot" version** of clutch the flyweights are located at one end on hardened steel pins which allow the flyweight to pivot as the centrifugal force increases. The pins are located in a mounting plate of substantial design increasing the mass of the complete clutch ensuring silent, vibration free operation. Full torque capacity can only be reached in one direction of Rotation, in the reverse direction the torque is limited to 40-50% which is useful for some braking applications.



Exploded view of basic version



Exploded view of pivoting flyweight version





Cooling and compressor technology



On and Off track racing



Municipal units and vehicles



Construction and agriculture machines



Clutches



Brakes



Leisure and fun sport



Renewables and energy recovery



Rescue and safety technology







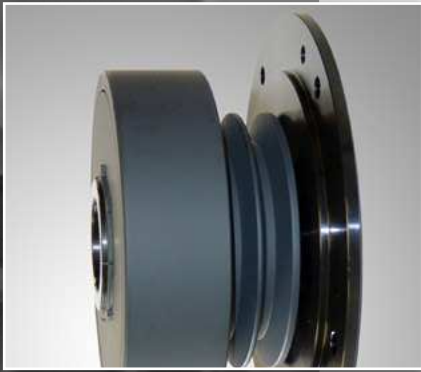
Centrifugal clutch combined with torsionally flexible coupling



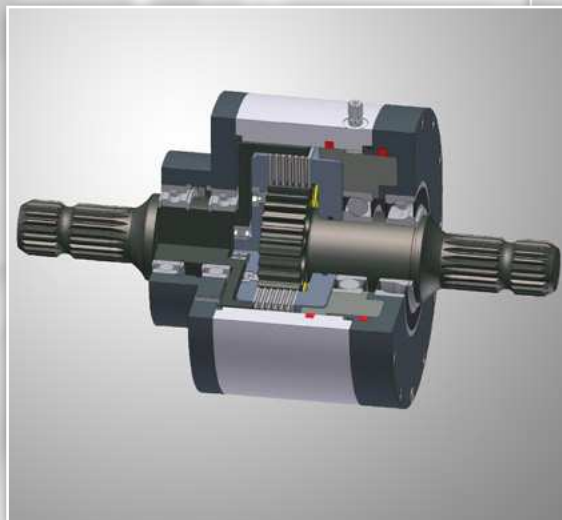
Special gearboxes for shaft or SAE flange mounting.

Do you require special solutions?

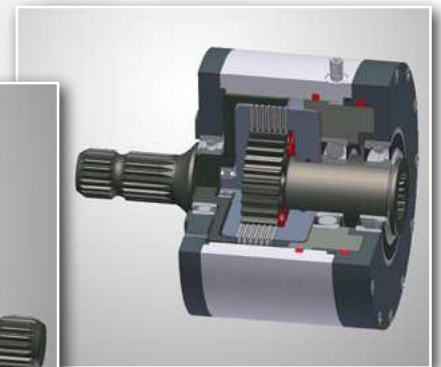
We gladly face up to and welcome new challenges – simply ask us!



Centrifugal clutch with vee belt pulley and flange for direct mounting to the engine flywheel



Hydr. activated multi disc clutch with radial pressure input port and housing



Centrifugal clutch for refrigeration application

**Amsbeck Maschinenteknik GmbH**

Boschweg 15  
D-48351 Everswinkel  
Germany

Tel.: +49 (0)2582 66812-0  
Fax: +49 (0)2582 66812-101  
E-Mail: [info@amsbeck-mt.de](mailto:info@amsbeck-mt.de)  
Internet: [www.amsbeck-mt.de](http://www.amsbeck-mt.de)

**Certificates:**

We are certified according to ISO 9001:2008  
Certificate-reg.-no.: 09 100 50 59



Centrifugal clutch with automatic belt tensioning device