

The revolution in the magnetically coupled pump technology

The time has come.

Here it is, the world-wide first, absolutely safe to run dry magnetically coupled centrifugal pump BTMD-DR by Renner.

Others call there pumps:

- run dry capable
- extremely run dry capable
- run dry suitable
- partly run dry suitable

... we offer you...

- an absolutely run dry safe magnetically coupled centrifugal pump, without “ifs, ands, or buts”!

and even more...

We **guarantee** a run dry period of several hours.

Different from all other available magnetically coupled centrifugal pumps our product line BTMD-DR is ***absolutely run dry safe***.

Note: Patent pending!

The new product line BTMD-DR offers all advantages gained over decades of experience with our BTMD product line, *now with the ability to safely withstand running dry!*



Simple and reliable construction:

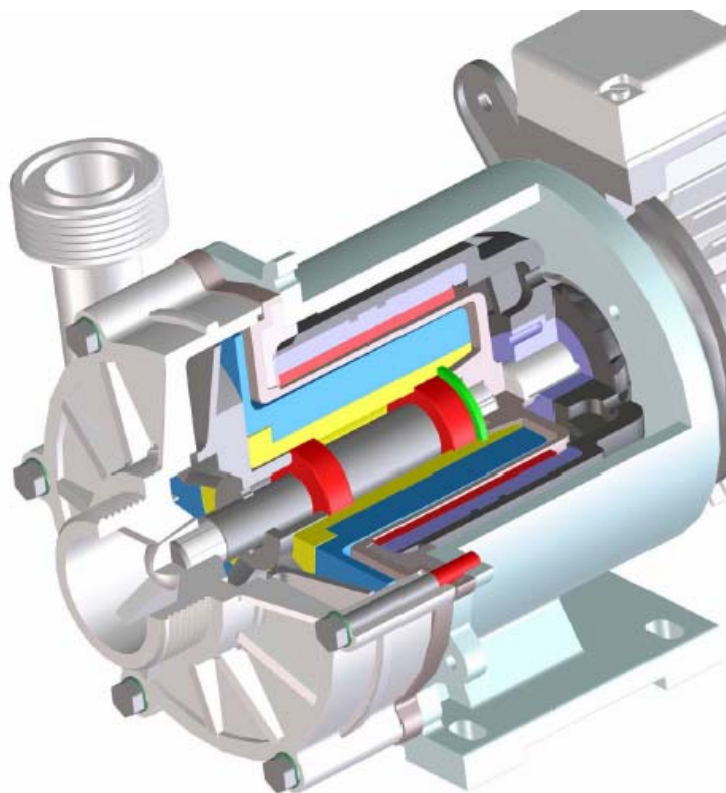


Fig.: Sectional view BTMD-DR

- **No slide bearings**
- **No magnetically axial thrust compensation**
- **No pin-point contact**
- **Excellent chemical resistance**
- **Operate at higher speeds.**
- **Efficiency improved by extremely low coefficient of friction.**

Advantage over slide bearing:

- Much lower coefficients of friction provide the lowest possible temperature rise (Note: The BTMD-DR bearing is so effective that the increase in temperature is case of running dry is max. 41° F (5°C) above ambient temperature).

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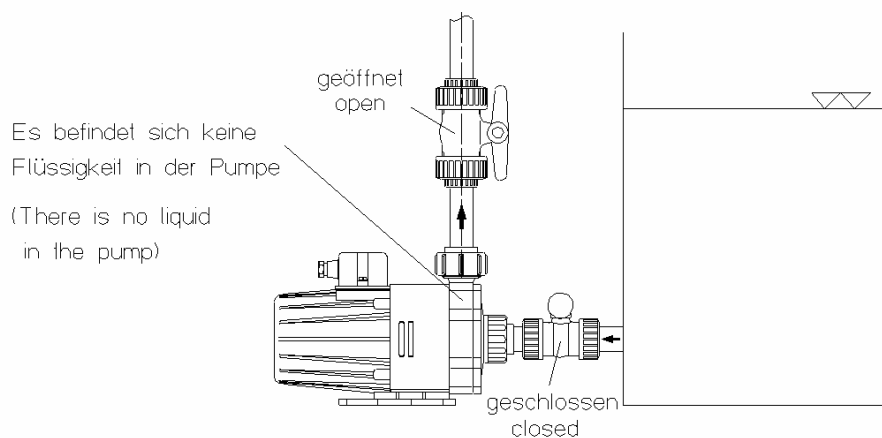


The difference between **running dry** and **running hot**: A short explanation

RUNNING DRY:

Definition:

We speak of “**running dry**” when no liquid is in the pump.



[Fig. 1: Centrifugal pump in “running dry” operation]

In this case the pump impeller does not produce any frictional heat; this emerges exclusively in the bearing of the pump. As this increase in temperature is so low (max. 41°F (5°C) see above) it can be ignored and the pump will not be damaged.



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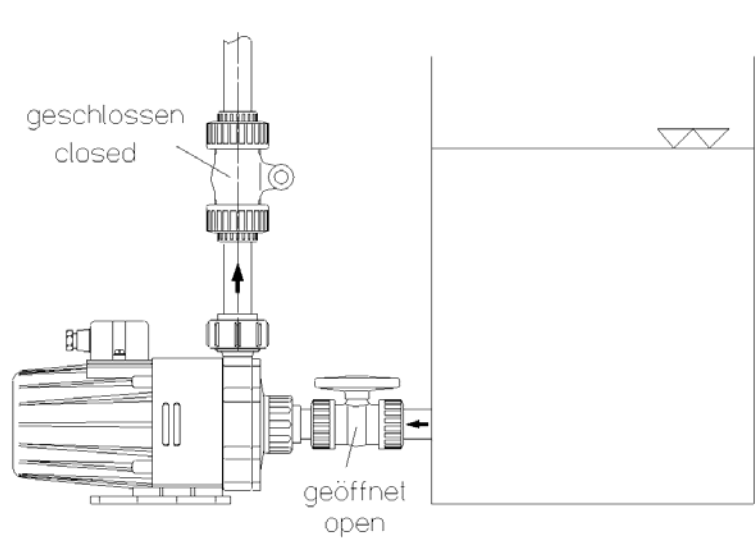
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RUNNING HOT:

Definition:

“Running hot” describes the increase in temperature of the pumped liquid caused by closed (non-vented) suction and/or discharge piping. Liquid is in the pump, but trapped. The liquid is re-circulated within the pump housing and is heated. This increase in temperature can be so high that it damages pump components.



The heat can **only** be carried off by open suction and discharge piping by venting, meaning any valves must be in the open position.

In order to avoid “running hot” and subsequent increase in temperature, a marginal opening of the discharge valve is sufficient (an opening equal to a flow of 0.15 gpm (0.5l/min) .

If “running hot” cannot be avoided, the pump can be equipped additional electronic protection.



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Safe to run dry product lines:

BTMD10 – DR
 BTMD15 – DR
 BTMD20 – DR
 BTMD30 – DR
 RM40 – DR
 RM45 – DR
 RM50 – DR

Capacities:

Hmax: 197 ft.
 Qmax: 397 GPM

Motor outputs:

1/10 HP up to 20 HP

Comparison of ‘standard’ configuration Mag-Dive pumps and the BTMD-DR pumps configured for “Dry Running”

Running dry conditions:	Effects on traditional magnetically coupled centrifugal pumps	Effects on the new safe to run dry BTMD-DR
The mechanic/installer is examining the direction of rotation without liquid in the pump housing.	Depending on the size of the pump and the length of the examination run of the direction of rotation, the pumps are often damaged or destroyed simply by installing them.	NONE !!! As soon as liquid is available the pump will operate without damage.
When starting the operation the valve in the suction pipe is closed.	Depending on the pump size and the length of time the valve is closed the pump is often damaged or even destroyed.	NONE !! As soon as the valve is opened the pump will operate without any damage.

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Running dry conditions:	Effects on traditional magnetically coupled centrifugal pumps	Effects on the new safe to run dry BTMD-DR
The tank on the suction side becomes empty and the level control switch is defective or even non-existent. The pump is running dry continuously until the empty tank is noticed by the operator.	Depending on the pump size and the length of time the pump is operating without liquid, the pump will sooner or later be damaged or destroyed.	NONE !! As soon as liquid is available again, the pump will operate without damage.
Suction and discharge piping which cannot be vented.	Depending on the size of the pumps, they are often damaged or destroyed when installing them.	NONE !! Even difficult operating conditions are no problem. The pump will operate perfectly.

Protection of the facility process

In order to protect the process facility, it may be necessary to indicate when the tank has run empty, for example. In these cases we recommend you consider our electronic pump protection. It is available in different types. To suit many requirements.

Please call with any questions, comments, and of course whenever we can help with challenging pump applications!



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