

Hansen Transmissions commits to be a pioneering innovator. The production of high performance gear units stems from an interactive partnership with our clients, the end users and the actively engaged manpower of our global enterprise. Embracing design, manufacturing and customer services, Hansen Transmissions has grown into a world leader in its field. Today, we set standards for both product and working environment, inciting a knowing environment to seize all new and inspiring technologies.

See our worldwide sales & service network at [www.hansentransmissions.com](http://www.hansentransmissions.com)



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# powerful solutions for cooling towers and air cooled condensers





## COMPLETE AND POWERFUL SOLUTIONS FOR COOLING TOWERS

Because of the severe demands placed on cooling tower fan drives, Hansen Transmissions' drives are specially equipped to withstand exacting operating conditions, while still using a maximum of standard components. Taking these operating conditions into account, several accessories are included as standard. Hansen Transmissions designs, creates and services flexible gear units that can be adapted to specific requirements. This way Hansen Transmissions created a range of drive solutions suitable for the international cooling tower market. Proof of the products' reliability is the ISO 9001 quality certificate, showing outstanding quality, supported by an international network of after-sales Services Centres. Using standard components, we offer a range of gear units fully customised to the specific needs of the industry applications.

# cooling tower industry

### ■ HANSEN P4: BEVEL HELICAL GEAR UNIT

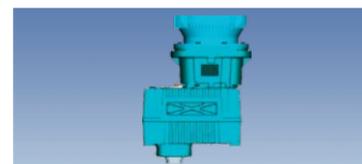
For vertical housings, the extended bearing span of the low speed shaft has been standardised to meet the particular needs of the cooling tower industry: the extended bearing span increases the dynamic stability of the gear unit. The increased distance between the propeller and the high speed input shaft reduces vibrations. A motor can be connected to the outside of the cooling tower using an all-metal disc coupling at the high-speed shaft.



### ■ HANSEN M4 ACC HELICAL GEAR UNIT

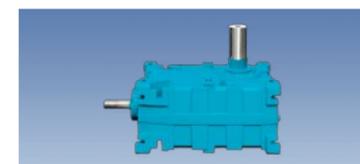
Based upon Hansen P4 and Hansen M4 technology, a dedicated design has been developed. Applying the same high quality standards, this gear unit offers a cost efficient solution with optimised gear geometry for lower noise levels. The monobloc concept ensures higher stiffness of the housing. As a standard, these units come with a lantern housing that allows for connection of a motor on the top of the gear unit.

This model is used mainly in air-cooled steam condensation plants which are ideal in dry environments where water resources are scarce. The cooling fan's motor is located in the air stream of the air-cooled refrigerant condenser.



### ■ HANSEN M-SERIES

With the Hansen M-Series for wet cooling tower drives, Hansen offers a truly functional solution in a range of 8 gearbox sizes up to 100 kNm with a number of options (refer to factory for options). This allows a more accurate selection of the gearbox. Like all Hansen gearboxes, they are well protected for operation in a very humid environment and are designed to handle the high axial loads, i.e. the axial thrust from the fan on the low speed shaft. This range also guarantees low noise levels and with no external piping the risk of oil leakage is avoided. The lubrication system is adapted to very low operating speeds and to windmilling conditions. The Hansen M-Series makes use of a robust monobloc housing and proven Hansen P4 gearing. The standardized rigid pinion shafts and housings provide better lateral load distribution and the bearing concept allows high external loads. The overall design of this series of gearboxes fully complies with the Cooling Tower Institute specifications.



### WHY HANSEN?

- Hansen matches the drive to the application and offers proven reliability under the most severe conditions.
- Carburised and ground gearing of both bevel and helical gears excels in strength, torque capacity, surface durability and low noise performance.
- Large overhung load capacity of the gear unit.
- A wide range of bearing configurations meet any application requirement, while still providing a cost effective solution.
- Bearings and shafts are dimensioned to go the distance, ensuring long bearing life under heavy loads.
- Continuous oil circulation through the bearings ensures a long, trouble-free working life for the gear unit.
- Hansen P4's unique Oil-Lock™ and Oil-Guard™ systems offer a maintenance-free sealing on high-speed shaft extensions as a standard.
- A greased labyrinth seal on the low speed shaft prevents water and moisture from entering the housing of the gear unit.
- The drywell, available on all models, prevents oil leakage on vertical down shafts. (Hansen P4)
- The internal construction of the gear unit housing allows for simple and complete oil drainage.
- Positioning of the aerating, drainage and filling plugs makes it easy to connect service piping towards the outside of the cooling tower.
- The larger units can be easily inspected and serviced on the spot, thanks to covers above the oil level. (Hansen P4)
- One-stop-shopping for complete drive package solutions.
- In-depth engineering support and complete documentation before and after the order.
- Hansen's global service capability significantly reduces downtime.