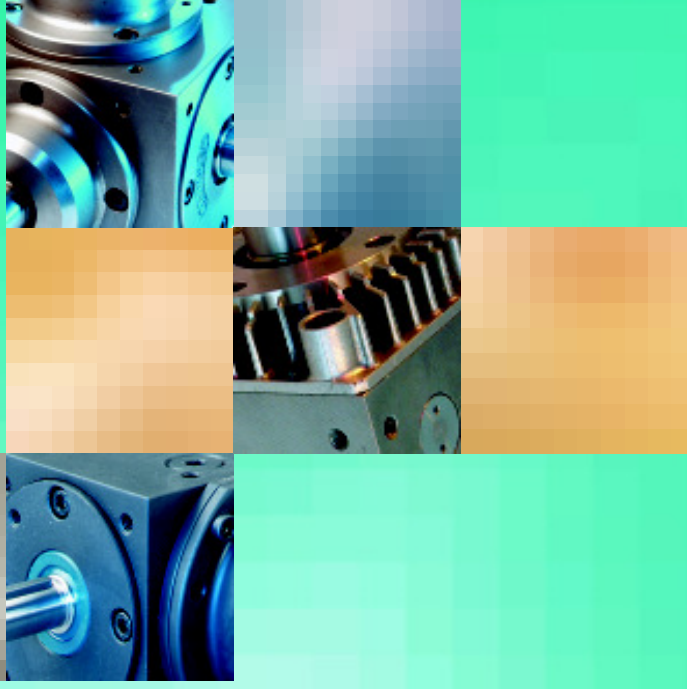
Range of gearboxes

Components and Special Design



Unlimited variety of combinations

TANDLER

Rich variety of combinations

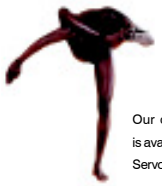
Super-efficient products for complex production processes

TANDLER multi-functional and versatile spiral bevel gearboxes can be tailored to meet the special demands made on them. There are two ways for you to obtain a complete engineering solution for your application:

1. You can put together the appropriate technical configuration required by your particular application as you would from a construction kit. An almost inexhaustible variety of combinations is possible.

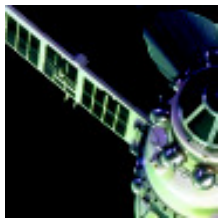
2. For particular individual problems we can also produce special solutions, tailor-made to suit your own requirements.

In both cases TANDLER gearboxes will provide you with high-performance products with mathematically exact transmissions for complex production processes where precision and durability are important.
If needed, servo technique can also be ordered from TANDLER.

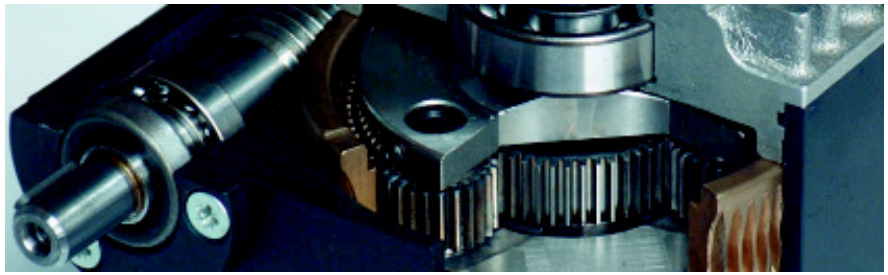


Our own special catalogue is available: TANDLER ServoFoxx® for servo motors.

Contents



Rich Variety • Precision • Durability



TANDLER puts you in the money

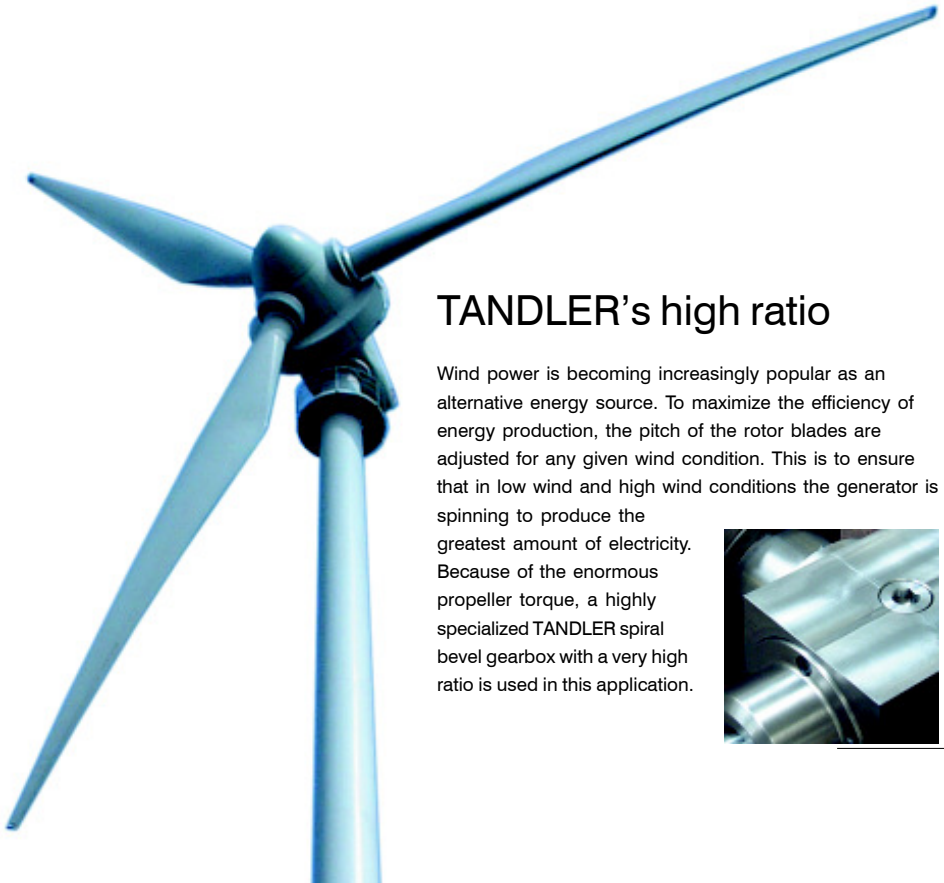
Just imagine - You check your lottery ticket and realise that you have matched all the numbers. Show me the money!! You take the ticket to the store where you bought it to confirm the win. It goes into the machine and can't be read - form classified invalid. Goodbye money. Lottery tickets must be produced with absolute precision so that they can be read without the possibility of error. The precision of TANDLER speed modulation gearboxes in the printing process contributes to the certainty that six correct numbers will indeed put you in the money.

Squeezed in the middle with TANDLER

Getting the filling squeezed between two biscuits is not as easy as you might think. The consistency of the filling is constantly changing with temperature, humidity, and other ingredient factors in the manufacturing process. To ensure that the same amount of filling is placed between the biscuits regardless of line speed or any other factor, TANDLER speed modulation gearboxes are used.

Cherry Chocolates with TANDLER

What do cherry filled chocolates have to do with TANDLER gearboxes you ask? Do you ever wonder how those cherries get into those chocolates. Well, it's a complex process requiring precise registration and positioning of the cherries as the chocolate cups move down the high speed conveyor belt. As the chocolate changes consistency with temperature and humidity, the TANDLER speed modulation gearboxes are used for positioning and belt speed matching so that the cherry goes exactly where it belongs - in the chocolate and not on the conveyor.



TANDLER's high ratio

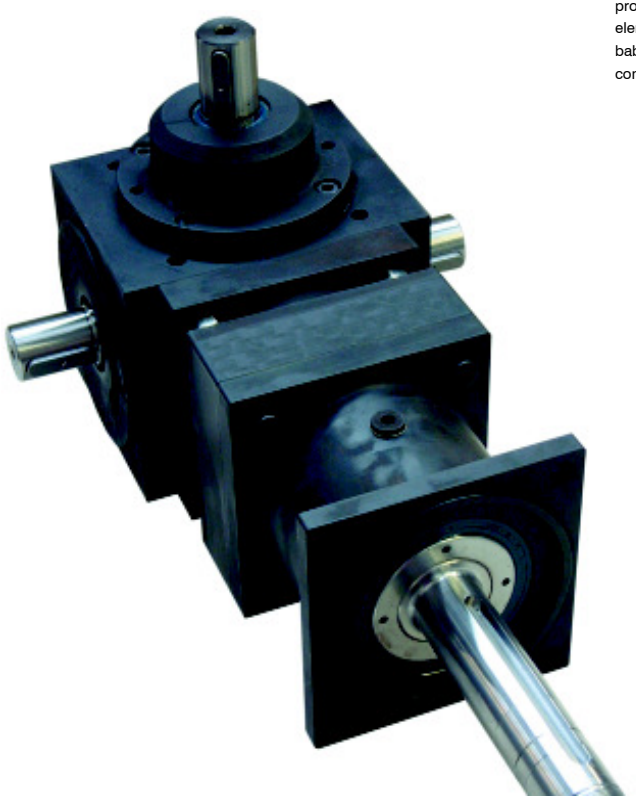
Wind power is becoming increasingly popular as an alternative energy source. To maximize the efficiency of energy production, the pitch of the rotor blades are adjusted for any given wind condition. This is to ensure that in low wind and high wind conditions the generator is spinning to produce the greatest amount of electricity. Because of the enormous propeller torque, a highly specialized TANDLER spiral bevel gearbox with a very high ratio is used in this application.

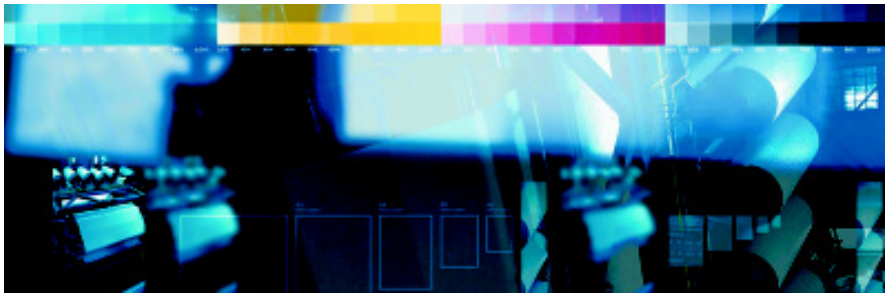
1,7619:1 1,95:1 1,833:1 2,07:1 2,4:1 2,2353:1 2,25:1 2,7647:1 2,642:1 3,125:1 2,8:1 3,15:1 3,333:1 3,1:1 3,2:1 4,714:1 4,111:1 3,75:1 1:1,03 3,5:1 1:1,0909 1:1,116 1:1,1 1:1,04

Baby Diapers and TANDLER

Diapers, which most people take for granted, have evolved dramatically over the years. Cotton cloth secured with safety pins has been replaced with a 10 component diaper with a breathable leak proof plastic outer layer, Velcro closures, a soft inner layer for comfort, and an absorbent section capable of absorbing a small lake all in a disposable unit for less cost than a cloth diaper. During the high speed manufacturing process each of the 10 components must be trimmed, positioned, and assembled with extreme consistency and accuracy. TANDLER gearboxes, known for their durability and precision, are used in diaper machines around the world to keep babies dry and comfortable.

The constant and precise production of different nappy elements is a precondition for babies being able to move in comfort.





TANDLER keeps your images clear

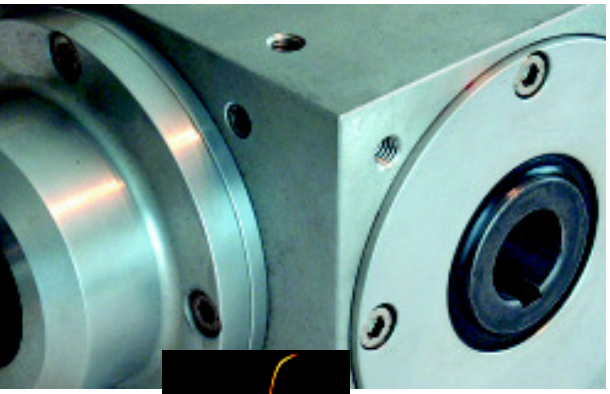
Do you ever wonder how a high speed 4 colour printing press keeps the images you see in magazines, or even this brochure, so crisp and clear? The answer is TANDLER speed modulation gearboxes used in the press registration system. Virtually all web type printing presses are driven with a main line shaft, many use a TANDLER speed modulating gearbox at each print station. This allows the operator to alter the position of the print forward or backwards relative to the previous print cylinder to make sure each successive colour is printed precisely on top of one another to create photo quality images at high speed.

TANDLER strikes Oil in Alaska

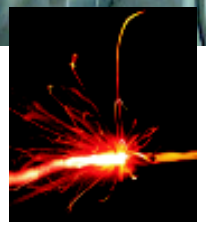
Used in oil extraction in Alaska. TANDLER hollow-splined shaft gearbox.

Different oil extraction techniques are used depending on the environment where the oil is found. In Alaska TANDLER gearboxes are used in the pumping of crude oil. A special internal lubrication is used to ensure continuous reliable operation under the most extreme temperature and weather conditions.

Rich Variety • Precision • Durability



Using explosives is always very dangerous, especially in demolition. When a timed detonation is called for, special fuses are used. The consistency of the rate of burn in the fuses is critical. This consistency is guaranteed by a precise system of wrapping and metering explosive compound into two cords to form a fuse. Two TANDLER splined gearboxes connected with a torque tube are used to wrap the cords with unwavering consistency. The result is spectacular controlled and safe explosions.



TANDLER's explosive connection

Fuses: Two TANDLER splined shaft gearboxes each twist two cords together.

TANDLER on the seven seas

Virtually all freight transported on the open seas is done so using "containers". Container ships are found in every major port around the world. They are loaded and unloaded using special bridge cranes. TANDLER gearboxes feed and take up cable as the crane car travels back and forth over the ship and dock, loading and unloading freight.

TANDLER gearboxes support trailing-cable bridges for the power supply of movable crane parts.

TANDLER at work 365 days a year

Modern industrial manufacturing is characterized by a high degree of factory automation and the most efficient use of production equipment. In today's competetive environment production schedules often run around the clock, seven days a week. To ensure continuous high quality, the production line is only shut down for brief periods to perform preventative maintenance. Down time, caused by equipment failure, can mean the difference between profit and serious loss. Tandler gearboxes have always been up to this challenge. They are unmatched for their trouble free operation under load, hour after hour, day after day, year after year.

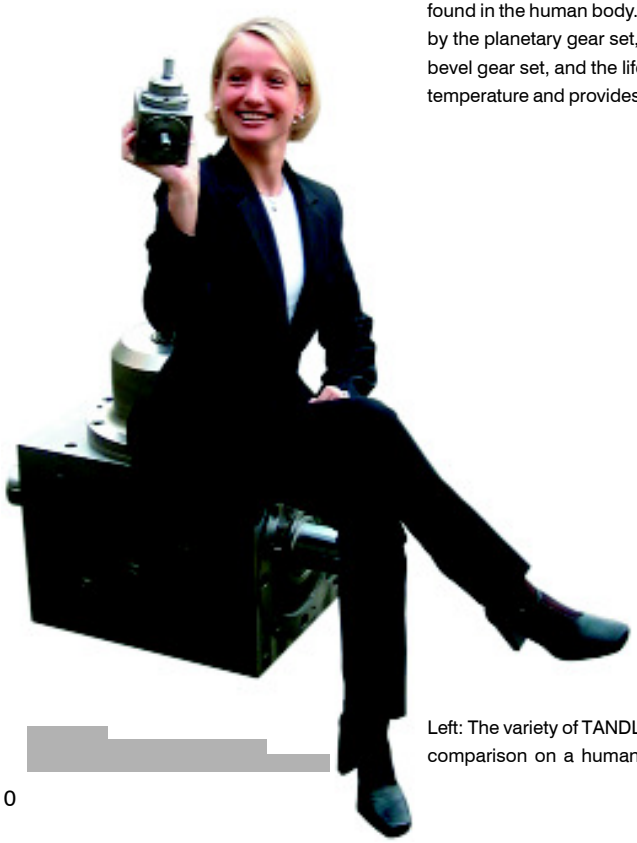
TANDLER spiral bevel gears receive a special graphite powder application for use in the different physical conditions found in space. The reduced weight of the aluminium housing helps to save expense at the launch.

TANDLER is everywhere

Even in space you will find a TANDLER gearbox. They are used to control the solar panels of satellites. When a rocket is launched every ounce of weight saved reduces launch costs. For this application TANDLER uses a special light weight Aluminum housing and a high tech graphite lubricant because of zero gravity and the extreme temperature variations. Normal seals also cannot withstand the rigors of space and are replaced with a uniquely designed 'labyrinth' seal to contain the graphite.

Rich Variety • Precision • Durability

Internal value: An acrylic model shows the more clearly construction of a TANDLER speed modulation gearbox. Its individual parts perform similar key functions to those found in the human body. The intelligence is performed by the planetary gear set, the heart of the unit is in the bevel gear set, and the life blood is the oil which regulates temperature and provides lubrication.



Left: The variety of TANDLER gearboxes allows for a size comparison on a human scale.

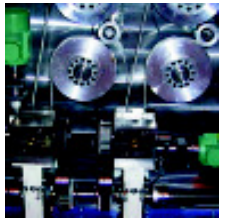
Engineered products for your application

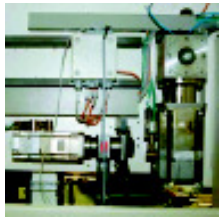
With TANDLER spiral bevel, speed modulation, and ServoFoxx® planetary gearboxes you receive a high performance product unmatched in the industry for precision, durability, and design variety. There are basically two ways to make an intelligent product selection.

Also available: ServoFoxx,® specially developed for servo motors.

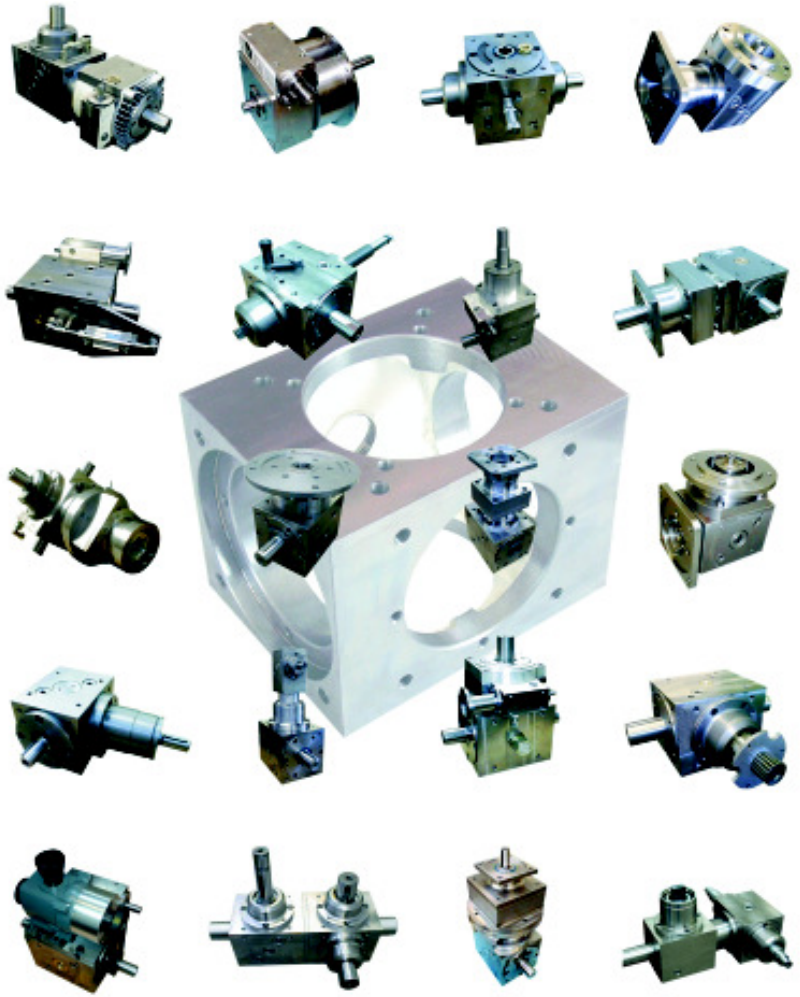
1. Choose from TANDLER's enormous variety of standard designs and ratios
Using Tandler's design catalogs and the technical data for for your application it is likely that a gearbox can be selected from the over 10,000 standard designs available.

2. Special designs for your special requirements
TANDLER can design and produce one-off gearboxes for your specific application tailor made to your special requirements.





Great variety of combinations



At TANDLER Specials are not Special: Special design gearboxes are the norm at TANDLER. With our enormous variety of standard components a specially designed and manufactured gearbox for your specific application is something we do every day.

Single-Stage Spiral Bevel Gearboxes

TANDLER Spiral Bevel Gearboxes (series Standard) have proven their versatility and value time after time for over 50 years. Every surface is machined for universal mounting capabilities, the power density is among the highest in the industry. They are extremely precise with very low backlash and very low transmission error. The **WV series** with a larger through shaft is commonly used in line shaft applications where only partial torques are taken off at various intervals. *For high-torque applications, TANDLER have recently launched the **PowerMaster** gearboxes.*

Hollow Shaft Gearboxes (series HW). A popular design because it eliminates the need for coupling between shafts or allows for custom shafts to be inserted. Four hollow shaft designs offer increased connection flexibility: key, shrink discs, spline, and involute spline profiles. *The two most common of these - hollow shaft and hollow shaft with shrink disk - are also offered with the new PowerMaster gearboxes.*

Flanged Gearboxes (series F and FS2). With different flange designs these gearboxes can be coupled with virtually any AC, DC or Servo motor available on the market. The F version uses a hollow pinion to accept an AC or DC motor shaft. The FS version is specifically designed for servo applications and uses a unique metal bellows coupling to mount the motor. This coupling eliminates any misalignment and bearing loads associated with machining tolerances, and is integrated inside the motor flange.

Switching Spiral Bevel Gearboxes (series S and AS). The AS version is a precision spiral bevel gearbox where the output shaft can be disengaged from the input shaft. The S version adds the capability to reverse the direction of the output shaft relative to the input shaft.

EA and ZA Auxiliary Drive Shaft Gearboxes. EA and ZA spiral bevel gearboxes allow for up to five additional drive shafts. In short, one input shaft and up to five output shafts - one on every side of the gearbox.

Rich Variety • Precision • Durability

Speed Modulation Gearboxes

SP2 planetary bevel modulation gearboxes. SP2 is a combination of spiral bevel, planetary, and worm gear technology to allow for changes in the angular position of the output shaft relative to and at right angles to the input shaft. They also provide the capability to vary the output speed within a narrow range. SP2 gearboxes are available in 7 sizes and 8 standard ratios.

The **PE2** is a **single stage planetary gearbox** used for in-line shaft phasing or narrow range speed control. The units are used as a 3:1 reducer or a 1:3 increaser depending on which shaft is used as the input. The PE2 is available in 7 standard sizes.

PD2 double-planetary speed modulation gearboxes. The PD2 is an in-line dual stage planetary gearbox with an overall ratio of 1:1. Like the gearboxes above a worm gear is used for narrow range speed control and precise shaft phasing. This unit is available in 7 standard sizes.

The inline **KD bevel differential modulation gearbox** can be used as a 1:2 speed increaser or a 2:1 reducer. Shaft phasing and narrow range speed control are effected by a worm gear mounted onto the bevel gear. The KD are available in 6 different sizes.

ServoFoxx® Gearboxes

ServoFoxx®PL2 FS. The TANDLER inline planetary gearbox offers the ultimate in motion control. With ground and matched set gearing, a revolutionary integrated bellows coupling motor mount, more ratios available than any other manufacturer, maximum performance is assured for servo applications.

ServoFoxx®PSK2 FS. This TANDLER right angle planetary bevel gearbox is one of the most versatile designs available on the market. It uses a revolutionary integrated bellows coupling motor mount on the input into a planetary system for speed reduction. The bevel section of this gearbox can be configured in any spiral bevel configuration TANDLER offers. The result is unmatched design flexibility, including auxiliary output shafts, a hollow output shaft, engage/disengage and reversing capabilities to name but a few.

ServoFoxx®SKP2 FS2. Combining the same features as the PSK2 FS, this version has the input into the bevel section first. This allows for greater output torques but has lower input speed constraints.

ServoFoxx®FS2. This TANDLER right angle bevel gearbox, designed for servo applications, incorporates a metal bellows coupling in the motor flange to eliminate bearing load and seperate the motor bearings from the pinion bearings. It also opens the user to the entire range of TANDLER bevel gearbox designs including auxiliary outputs shafts, reinforced through shaft and switching capabilities for example.

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