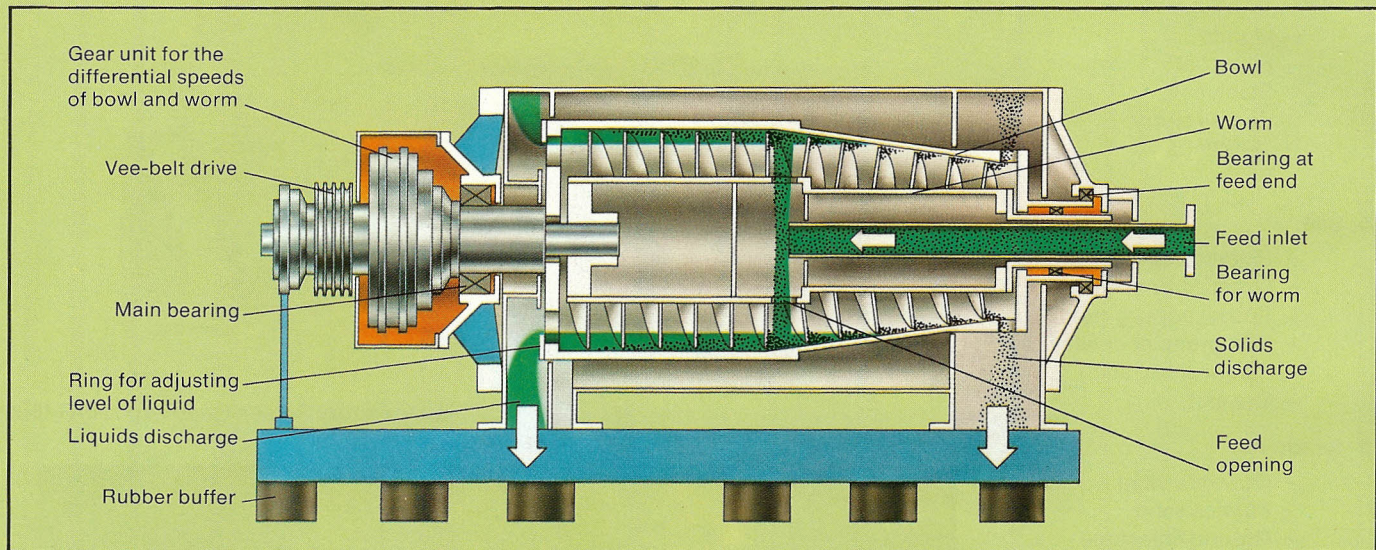


# Decanter Centrifuges

● TS ● TSE ● TSS



## Description

Often the solids are too fine to be dewatered satisfactorily in the filtering screen/worm centrifuge. They can then be separated in solid bowl centrifuges provided their sedimentation speed in the mother liquid is sufficient. The sinking speed which is determined by particle size, particle shape, difference in density between solids and liquids as well as their viscosity, can be decidedly improved by conditioning e.g. by heating or adding flocculation agents.

In decanter centrifuges the clearing of the liquid takes place in the cylindrical part whereas the dewatering of the solids by filtration or compression of the filter cake takes place in the conical part of the bowl. The geometry of the bowl, especially the relation between length and diameter, must be adapted to each different application. In most cases good results are obtained at a length relation of 2:1, as per our **type TS**. For

difficult problems e.g. the clearing of waste water and dewatering very fine slurry a length relation of about 1:2.8 as per our **type TSE**, is required.

Apart from clearing liquids and dewatering solids, decanters can also be used for wet classification of small particles in the range of 1–10 microns. By controlling the flow speed of the liquids between the worm flights and the centrifugal force, the particle split is variable in a wide range.

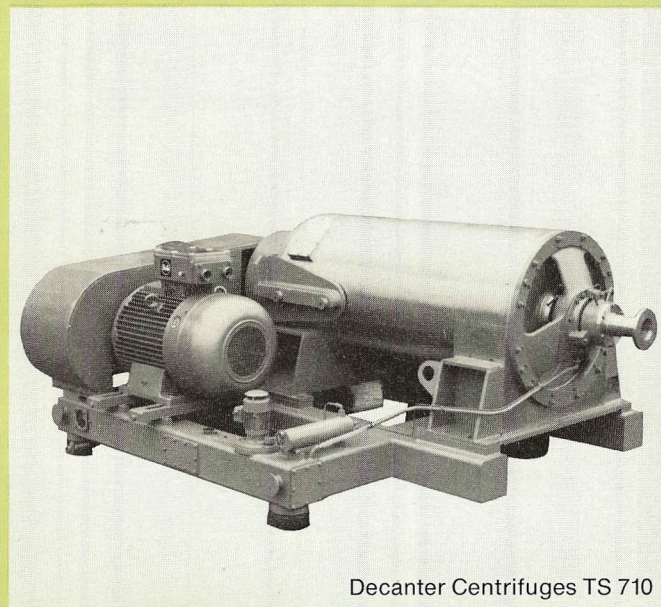
When very low final moistures are required our Decanter Centrifuges can, in certain cases, be fitted with a screening area, as per our **type TSS**. This execution is generally known as a Screen/Bowl Centrifuge. The screen portion can be fitted with segments that are interchangeable without dismantling the centrifuge.

## Standard executions

Type		140 F	210 F	360 F	300	360	420	500	600	710	850	1000
Feed capacity <sup>1)</sup>	abt. m <sup>3</sup> /h	1	2	10	10	20	25	35	45	65	95	140
Drive motor	abt. kW	2.2	5.5	15–22	10–22	18.5–30	18.5–45	22–55	30–90	45–110	55–160	120–200
Length TS	abt. mm	800	1000	1650	1450	2000	1850	2010	2800	3000	3500	4570
Length TSE, TSS	abt. mm				1700	2350	2200	2510	3300	3500	4000	5370
Width TS, TSE, TSS	abt. mm	800	1000	1600	1150	1500	1450	1700	1800	2500	2700	3160
Height TS, TSE, TSS	abt. mm	520	700	1050	750	980	950	1100	1150	1250	1600	1660
Weight TS	abt. kg	200	500	1500	900	1200	1800	2500	2900	5000	7000	10000
Weight TSE, TSS	abt. kg				1100	1500	2100	3000	3400	6000	8300	12000

<sup>1)</sup> The actual capacities depend on the properties of the material and their separation characteristics.

We reserve the right to make changes which serve technical progress.



Decanter Centrifuges TS 710

## Construction

Our decanters work according to the so-called counter-current principle. The suspension is fed in about the middle of the bowl where the separated solids are conveyed into the direction of the small diameter through the worm, which runs at a speed different from that of the bowl, whereas the cleared liquids flow over the opposite end. The level of the liquid in the bowl and thus the relation between wet and dry part is adjustable within wide limits. This enables an optimum adaption of the machine to the separation problem.

The speed differential between bowl and worm is produced via Cyclon-gears which have been designed for many years of trouble-free continuous operation. By selecting the right

gear ratio and, where necessary, by changing the speed of the eccentric shaft which is driven by a vee-belt, the speed differential is adapted as required. The centrifuge is driven by a standard 3-phase squirrel-cage motor via vee-belts so that the speed of the basket can also be adapted easily to the conditions.

In order to restrict operational costs and wear, the speed of the bowl should be as low as possible i.e. must be only as high as absolutely necessary for the separation. In many cases e.g. when using flocculation agents, lower speeds also give better process-technical results.

## Special executions

- Sealing of housing by means of:
  - Gas Labyrinth
  - PTFE seals
  - Sliding ring seal
- Overhung rotating parts
- CIP cleaning
- Friction drive for CIP cleaning
- Filtrate cyclone
- Filtrate scoop discharge
- 3 Zone separation
- Flocculent facility
- Solids mixer
- Discharge device
- Variable differential speed either hydraulically or mechanically operated
- Drive motor above centrifuge

## Materials of Construction

The contact parts are made from Austenitic Steel, special Bronze, Hastelloy, Nickel, Titanium or similar depending on the application. With abrasive materials, the vulnerable zones are protected by abrasion resistant materials.