



## **FLOTTWEG CENTRIFUGES FOR WINE PRODUCTION**

Maximum Purity, Improved Quality, Higher Yields



# FLOTTWEG DECANTER CENTRIFUGES AND DISC STACK CENTRIFUGES FOR THE WINE INDUSTRY

## Optimum Yield, Improved Product Quality

Wine is a cultural asset. The grape vine is one of the oldest cultivated plants of the world. And its success story is continuing dramatically. Lifestyle and consumption habits are changing all over the world. Quick urbanization and raising incomes are resulting in increased wine consumption, thus leading to a positive development of the wine industry.

And it is still a challenge. The wine production process depends on the relatively short harvesting period. When it really matters, the vintner needs reliable and efficient equipment.

Wine yield and quality are subject to the grape type and the cultivation region as well as increasingly varying climatic conditions. Clarifying processes play an important role during the entire wine production process. Therefore, choosing the right separation technology is critical for the yield, purity and taste.

Flottweg Decanter Centrifuges and Disc Stack Centrifuges have been used in wineries for many years. No matter if it's must clarification, trub processing or fine clarification – Flottweg Centrifuges help the vintner produce great wines efficiently.





# OVERVIEW: FLOTTWEG SEPARATION TECHNOLOGY FOR RED WINE PRODUCTION

## Advantages of Flottweg Centrifuges in the wine industry

### Decanter centrifuge for must clarification

- Quick processing of must and must residues, even in case of a high solids content
- Closed discharge of the clarified must reduces oxygen pick-up/oxidation
- Hygienic design and complete CIP capability for efficient cleaning, thus high product quality
- Adjustable impeller for optimum adjustment of the separation zone. Continuously high yields also in case of varying grape quality
- Continuous must clarification/grape extraction; alternative to the traditional wine press, which does not work continuously

### Flottweg Disc Stack Centrifuge for fine clarification

- Positive impact on quality thanks to optimum must clarification
- Flottweg Soft Shot® discharge system offers flexible partial and total discharges, thus increased yields thanks to dry solids

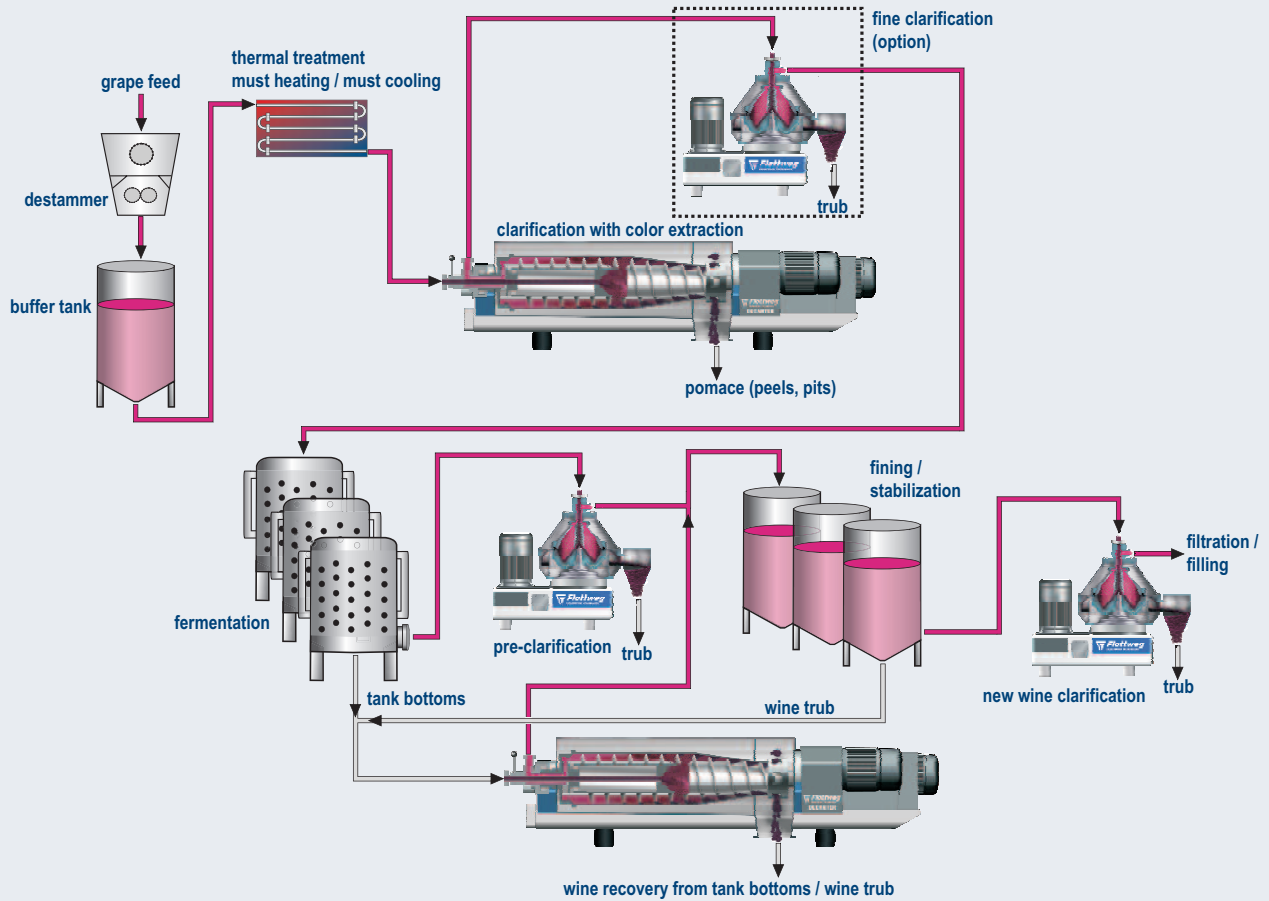
Flottweg's industrial centrifuges excel in excellent yields, sturdy design and relatively low operating costs.



# FLOTTWEG SEPARATION TECHNOLOGY IN RED WINE PRODUCTION

## Overview

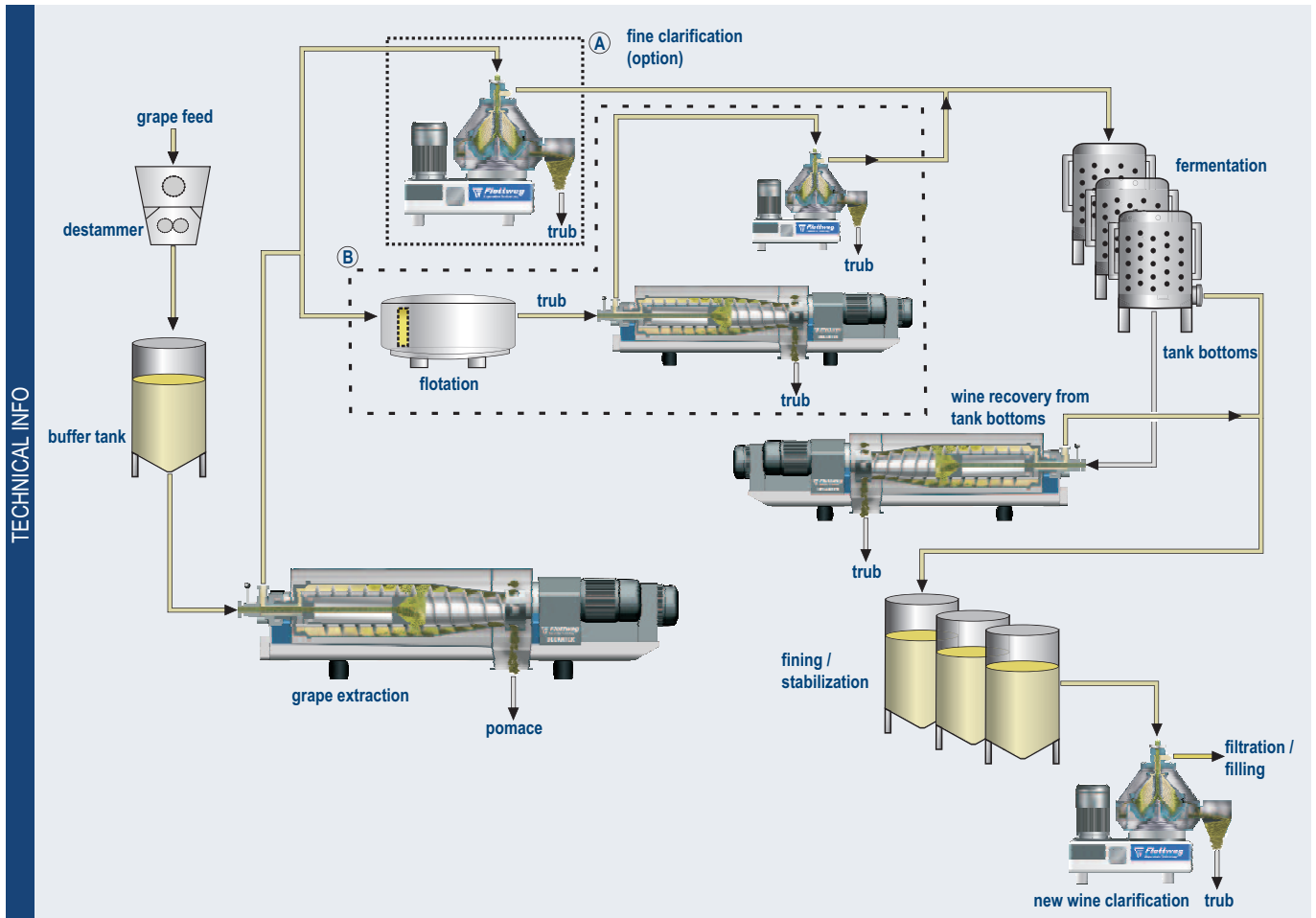
TECHNICAL INFO





# FLOTTWEG SEPARATION TECHNOLOGY IN WHITE WINE PRODUCTION

## Overview





# MUST PRE-CLARIFICATION AND TANK BOTTOMS PROCESSING

## Using the Flottweg Decanter

Everywhere that liquids containing a high solids content have to be clarified, decanter centrifuges are used. One of these applications is must pre-clarification. The specific construction of the Flottweg Decanter not only offers economic, but also quality advantages in must processing. For every vintner, it is essential to assure high wine quality and high yields.

The trub content of the grape must depends on the grapes' pre-treatment. Harvesting technology as well as the grape transport impact the composition of the must. In regions with high temperatures (e.g. Australia, South Africa, California), only mechanical harvesting is possible in order to protect humans and grapes. As a matter of fact it can be said that mechanically harvested grapes have a higher trub content than manually harvested grapes because of the higher mechanical load. The press system used has also a considerable impact on trub generation. Scroll presses tend to generate higher trub contents in the must than membrane presses.

Therefore efficient must clarification is critical for the further production process. The Flottweg Decanter offers several advantages compared to traditional must clarification.

### INCREASING QUALITY

The machine separates trub particles from must within seconds, thus reducing the contact time considerably. Due to their high phenol content, trub particles may have negative impacts on must quality in case of long contact times (e.g. static sedimentation). The clarified must is discharged from the machine in a gentle way using an adjustable impeller. Due to this special discharge system, the precious liquid is discharged free of foam and under pressure. Must contact with oxygen and thus oxidation processes are minimized.

### OPTIMUM CLARIFICATION, HIGH YIELD

The heart of the machine, the rotor together with the conveyor scroll, has been specifically adapted for efficient must and wine clarification. Thanks to the adjustable impeller, the separation zone within the machine can be optimally adjusted to the raw product. Even in the event of different trub contents of the grape must (different kinds of grapes, harvest season, harvest method etc.), the best clarification result may be obtained. In general, the discharged must only contains a solids content of < 1 %. Thanks to the Simp Drive® System, the differential speed of scroll and decanter bowl can be optimally adjusted, thus optimizing the solids residence time (pressing of the solids within the bowl cone). The yield of clarified must is considerably increased. The decanter can be flexibly used in wine production within different processes and is therefore real multi-function equipment for efficient trub management.





## MUST CLARIFICATION ZONE

- High clarifying efficiency of the Flottweg Decanter thanks to the optimum adjustment of bowl and scroll to the requirements of the wine industry
- Flexible adjustment of the separation zone using the adjustable impeller; that means optimum clearing results, even in case of varying feed conditions



## EXTRACTION ZONE

- Pressing of the solids in the bowl cone area, thus optimum adjustment of differential speed
- High dry substance content in the separated solids, high must yields

discharge of the clarified must under pressure

feed must

discharge pomace / trub particles



## FLOTTWEG ADJUSTABLE IMPELLER

- Closed discharge of the clarified must under pressure; thus prevention of foam, minimized oxidation, higher quality in the final product
- Thanks to liquid discharge under pressure, no supply pump is required, which would normally be necessary
- Optimized CIP process
- Option for automation



## FLOTTWEG SIMP DRIVE®

- Torque-controlled adjustment of differential speed; thus continuously high dry substance content in the separated solids
- High creation of value thanks to an increased overall yield of grape must
- Gear box located outside the product zone
- Lubricants used in compliance with NSF H1

Picture shows the scroll in the decanter bowl

## FINE CLARIFICATION

### Using the Flottweg Disc Stack Centrifuge

Clarifying processes not only play an important role in must processing. During the entire wine production process, efficient clarification may have a significant impact on the taste of the wine and thus on its market value.

In wineries, some fine particles cannot be separated from the liquid using a decanter centrifuge due to their low density difference. This is where disc stack centrifuges are used. These liquid-orientated machines operate with a higher centrifugal acceleration due to their construction. Even very fine particles can be separated, thus clarifying must and (young) wine efficiently.

#### IMPROVED QUALITY

Early clarifying using disc stack centrifuges helps removing very fine trub particles, which could have a negative impact on the taste of the wine during additional production stages. Moreover, further fermentation is more consistent and can be better controlled. The development of the wine is optimized.

#### ECONOMIC ADVANTAGES

Wine made of finely separated must can be stabilized better and in a more economic way. Filter life time becomes longer, which results in cost savings for filter aids. Separation of trub particles in the must phase reduces the amount of sulfur dioxide to be added in additional production stages.





# FUNCTIONAL PRINCIPLE OF THE Flottweg Disc Stack Centrifuge



## FLOTTWEG SOFT SHOT® SYSTEM

- Accurate total or partial discharges in any combination. Discharge times can be precisely adjusted; thus higher yields in wine and must thanks to more compact solids
- Material-friendly, silent, nearly inaudible solids discharge
- Option: "self-thinking" machine with turbidity monitoring



## WEAR PROTECTION

- High wear resistance thanks to specific wear protection components
- Easy mounting and dismantling
- Longer service lifetime of the bowl of the disc stack centrifuge in must clarification (sand residues) or clarification after fining (bentonite residues)



## THE BOWL OF THE DISC STACK CENTRIFUGE

- Compact and sturdy design
- Easy mounting and dismantling
- Reduced number of components and seals for low operating costs



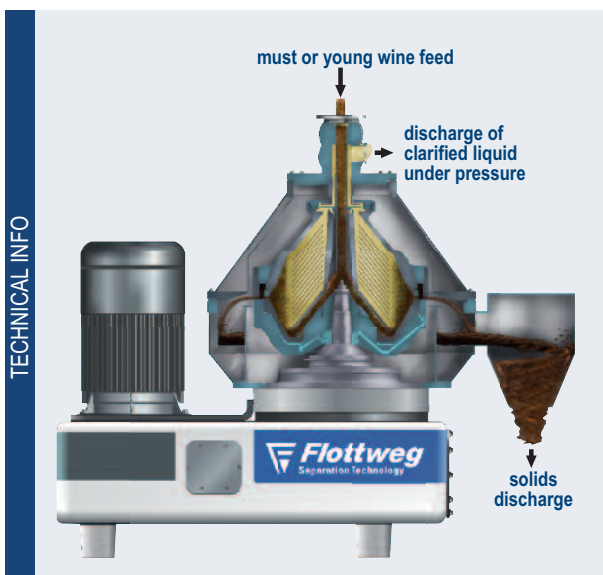
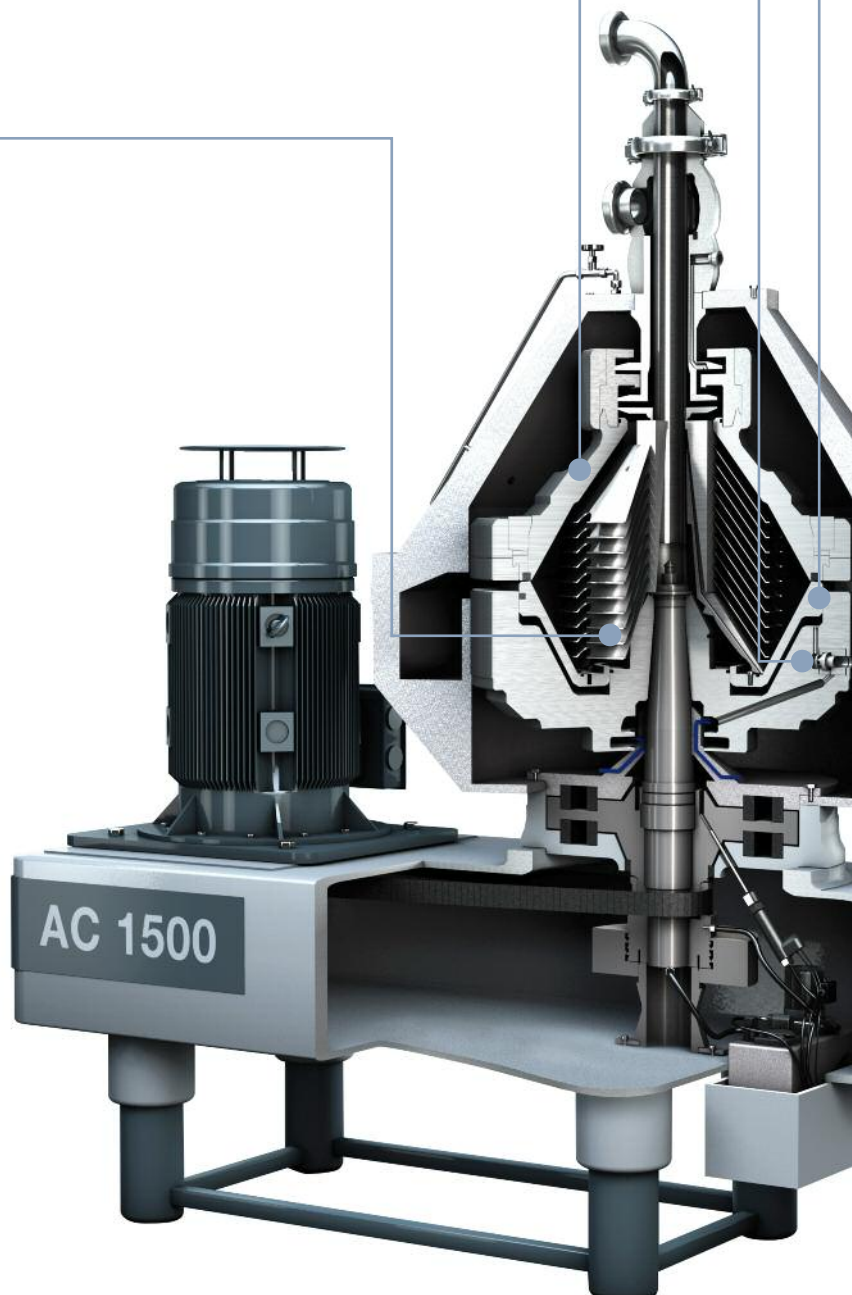
## DISC STACK AND DISTRIBUTOR

### Gentle

- Gentle acceleration of the liquid thanks to an optimized design of the distributor, thus gentle product treatment

### Efficient

- Highly efficient solids separation and fine separation thanks to the large clarifying zone of the discs



# CAPACITIES OF THE DECANTER / DISC STACK CENTRIFUGE IN THE WINE INDUSTRY



CAPACITIES [m <sup>3</sup> /h] OF THE FLOTTWEG DECANTER IN THE WINE INDUSTRY					
Type	Z3E	Z4E	Z5E	Z6E	Z8E
<b>Must<sup>1</sup></b>	up to 4	up to 12	up to 25	up to 30	up to 40
<b>Sedimentation trub / tank bottom<sup>2</sup></b>	1,8	up to 4	up to 6	–	–

<sup>1)</sup> subject to vintage and type of wine

<sup>2)</sup> capacity depending on the solids charge in the feed



CAPACITIES [l/h] OF THE FLOTTWEG DISC STACK CENTRIFUGE IN THE WINE INDUSTRY					
Type	AC1000	AC1200	AC1500	AC2000	AC2500
<b>Must<sup>1</sup></b>	800	2000	4000	8000	15000
<b>Wine<sup>2</sup></b>	1000	2500	5000	12000	25000

<sup>1)</sup> subject to vintage and type of wine

<sup>2)</sup> The listed figures are guidelines to be used for information only and may differ according to the process and the pre-treatment





## HIGH AVAILABILITY IS OUR STRENGTH

Application-based project planning, high-quality manufacturing and professional after-sales service are prerequisites for a trouble-free operation. Experienced and reliable engineers from our customer service department are ready to respond quickly if needed. The Flottweg Service Group is also available to perform preventive maintenance in order to avoid interruptions in production.



## “MADE IN GERMANY” QUALITY

Flottweg is ISO 9001-certified and manufactures its products in compliance with the latest technical standards.

## Flottweg Services include

- Experienced advice about separation processes
- Pilot tests on-site or at the Flottweg Laboratory and Test Center
- Selection and sizing of appropriate equipment
- Customer-specific automation/control systems and process integration
- Design and construction of complete process systems
- Installation, commissioning, maintenance, repair and spare parts service worldwide



## FLOTTWEG WORLDWIDE

Flottweg is headquartered in Vilsbiburg (near Munich), Germany, and has branch offices in Cologne and Leipzig as well as subsidiaries in Australia, Brazil, Canada, China, France, Italy, Mexico, Peru, Poland, Russia, and the United States, along with representatives in nearly all countries worldwide.

Check out our website at [www.flottweg.com](http://www.flottweg.com) to find a competent contact person.



# Flottweg Separation Technology – Engineered For Your Success



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