



The proven leader in energy efficiency  
for whole stillage separation

**FLOTTWEG DDGS DECANTERS**  
for bioethanol production

# Bioethanol production

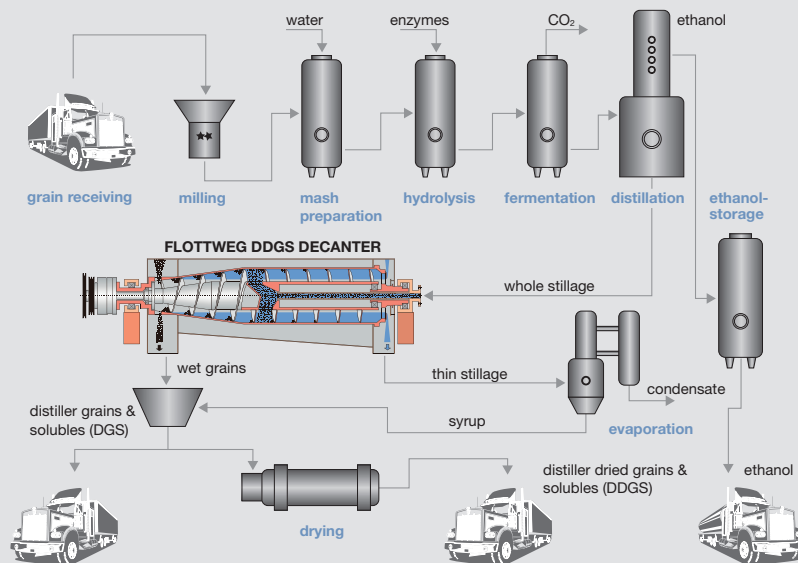
Ethanol has been produced from a variety of biomass feedstocks for a number of years. The growth of ethanol is fueled by the desire to reduce dependence on fossil fuels and at the same time reduce carbon dioxide greenhouse gas emissions. Every industrialized nation is making an effort to utilize ethanol as a fuel. Efficient ethanol production is a prime concern.

Advanced biotechnology is applied to optimize yields in

the hydrolysis and fermentation process. Following distillation, the whole stillage is separated by decanter centrifuges into wet grains and thin stillage. The thin stillage is concentrated into syrup by evaporation and this syrup is blended with the wet grains prior to thermal drying. The wet grains or the DDGS are utilized as protein enriched animal feed.

FLOTTWEG manufactures decanter centrifuges specially

designed to meet the whole stillage separation requirements for the ethanol industry. These centrifuges are called FLOTTWEG DDGS DECANTERS. FLOTTWEG makes DDGS decanters in sizes that can handle feed rates associated with 5, 10, 15, and 20 MMGY of ethanol production per decanter giving the end user the largest selection available for true DDGS decanter technology.



Bioethanol production process

## Benefits of FLOTTWEG DDGS DECANTER centrifuge for bioethanol production

- Utilizing FLOTTWEG DDGS DECANTER centrifuges increases wet grain dryness thereby reducing drying energy requirements and natural gas costs.
- With high solids recovery, FLOTTWEG DDGS DECANTERS increase evaporator efficiency and subsequently reduce evaporator maintenance costs.
- FLOTTWEG DDGS DECANTER centrifuges have lower power utilization compared to conventional decanter designs and can save the end user 20–40% in operating power and 20–50% in lower installed horsepower.

# Special features of the FLOTTWEG DDGS DECANTER

- **FLOTTWEG SIMP-DRIVE®**

The FLOTTWEG SIMP-DRIVE® automatically controls the scroll differential speed according to the torque load that the feed stream generates. Thus, the decanter adapts itself to varying operating conditions, such as solids load and feed rate, resulting in optimum cake dryness. Our VFDs deliver power directly to the scroll while other decanter manufacturers' VFDs utilize the motor as a generator brake. This "direct power in" philosophy

enables us to utilize standard "off-the-shelf" VFDs and smaller motors, which will save the end user money during installation and on operating power over the lifetime of the equipment.

- **Air/Oil Lubrication System**

FLOTTWEG's simple, compact, and effective air/oil (droplet) lubrication system guarantees that the main bearings are continuously delivered the optimal amount of fresh, non-recycled oil, thereby, minimizing bearing temperature and maximizing

bearing life while reducing energy consumption and requiring virtually no maintenance.

- **Compact Design**

FLOTTWEG DECANTERS have the most compact machine and required machine maintenance footprints allowing the end user to maximize plant space utilization. In conjunction with the compact layout, the FLOTTWEG DDGS DECANTERS have design features that make it the most ergonomic, maintenance friendly, and accessible

decanter available.

- **Unique Wear Protection**

All wear exposed parts are protected by a collection of proven wear elements that are design/task specific to maximize element life and minimize replacement costs and down time. These include a proprietary heat applied tungsten carbide spray, tungsten carbide tiles, tungsten/stainless steel housing inserts, silica carbide wear inserts, and ceramic paste.



FLOTTWEG Z6E-4/454 DDGS DECANTER



® = registered trademark in various countries

# FLOTTWEG DDGS DECANTERS for bioethanol production



FLOTTWEG has been developing and manufacturing decanters for over 50 years and is one of the world's leading decanter manufacturers.

FLOTTWEG DDGS DECANTERS are operating at major ethanol producers in Europe, North America, and Asia.

FLOTTWEG DDGS DECANTER technology is used for whole stillage separation of

- Corn
- Milo
- Wheat / barley
- Rice

## • ISO Certification

FLOTTWEG is ISO 9001 certified and manufactures all products in compliance with all current technical standards.

## • Service

FLOTTWEG provides 24-hour turn-around on shipment of parts and offers a scroll loaner/exchange program.



**FLOTTWEG products are designed and manufactured in GERMANY!**

## Technical data

	Z4E-4	Z5E-4	Z6E-4	Z73-4
<b>Bowl diameter</b>	16.5" (420 mm)	21" (530 mm)	24.5" (620 mm)	28.5" (730 mm)
<b>Bowl speed</b>	4200 rpm (4115 g-force)	3500 rpm (3610 g-force)	3200 rpm (3530 g-force)	2800 rpm (3160 g-force)
<b>Material of construction</b>	All product wetted parts are made of high quality stainless steel (AISI 316 or better)			
<b>Overall dimensions* (L x W x H)</b>	137" x 40" x 47" (3493 x 1000 x 1200 mm)	165" x 61" x 45" (4180 x 1560 x 1140 mm)	189" x 57" x 51" (4804 x 1440 x 1290 mm)	190" x 93" x 57" (4815 x 2350 x 1450 mm)
<b>Gross weight*</b>	6615 lb (3000 kg)	13225 lb (6200 kg)	20350 lb (9230 kg)	23150 lb (10500 kg)
<b>Main drive motor size</b>	30 HP (22 kW)	75 HP (55 kW)	150 HP (110 kW)	150 HP (110 kW)
<b>Back drive motor size (FLOTTWEG SIMP-DRIVE®)</b>	5 HP (4 kW)	20 HP (15 kW)	30 HP (22 kW)	40 HP (30 kW)
<b>Capacity**</b>	55 – 88 gpm (12 – 20 m <sup>3</sup> /h)	90 – 175 gpm (20 – 40 m <sup>3</sup> /h)	200 – 325 gpm (45 – 74 m <sup>3</sup> /h)	240 – 375 (55 – 85 m <sup>3</sup> /h)

\* to be understood as guidelines

\*\* actual capacity depends on type and composition of raw material

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