



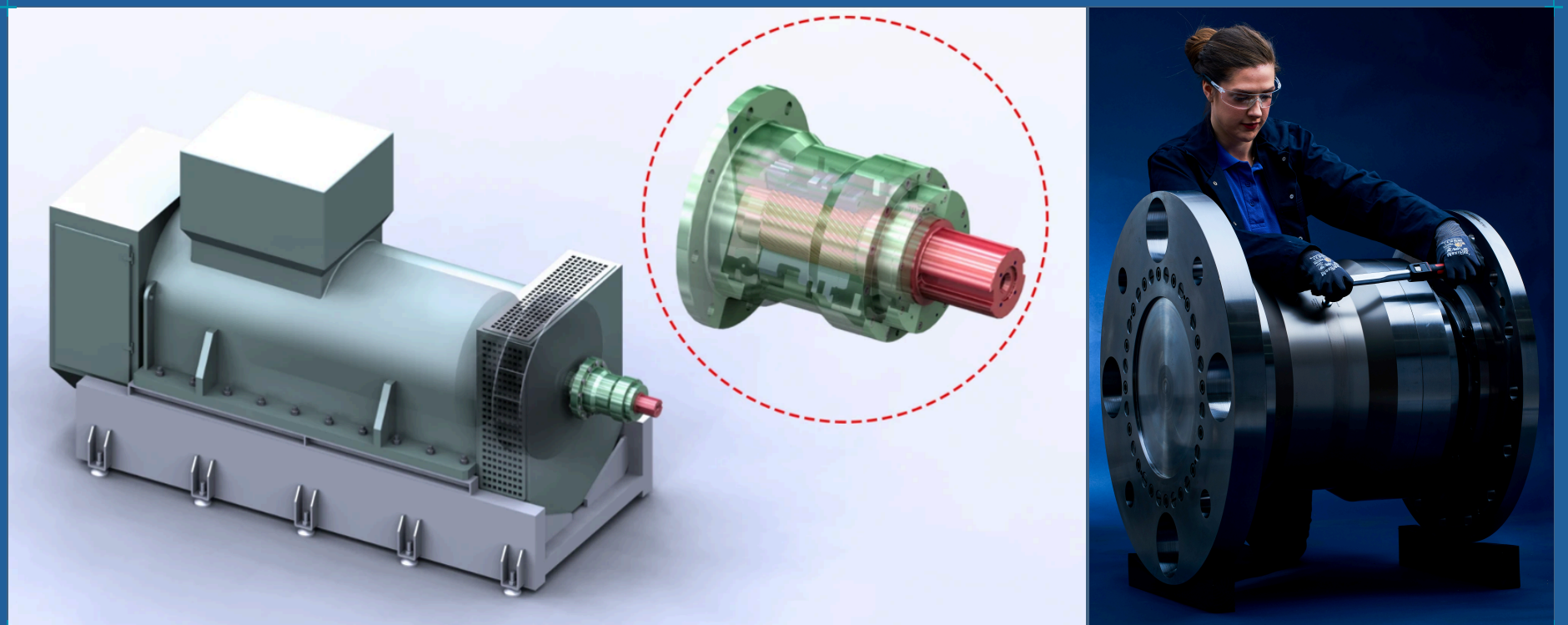
SSS® Gears Limited
SSS® Clutch Company, Inc.

01 / 05

BEHIND-THE-METER GENERATION

Grid Stability for AI Data Centers with SSS® Clutches

Synchronous condensing and Grid inertia with SSS® Clutches



SWIPE →

AI loads swing faster than simple generation can react

The load

GPU clusters can swing hundreds of megawatts in under a second. On a behind-the-meter island there is no utility grid to absorb it, so frequency and voltage move fast.

The idle asset

Uptime targets mean N+1 or 2N redundancy. Backup generators are already installed on site, mostly sitting idle.

With SSS[®] Clutches the backups stabilize the grid while they wait!!!

SWIPE →



Idle generators become synchronous condensers

An SSS[®] Clutch disconnects the generator from its prime mover. The generator stays synchronized and supports the grid with the prime mover shut down.

01 Inertia

Spinning mass slows the rate of change of frequency (RoCoF) during AI load swings.

02 Reactive power

Holds voltage steady as load steps rise and fall.

03 Fault current

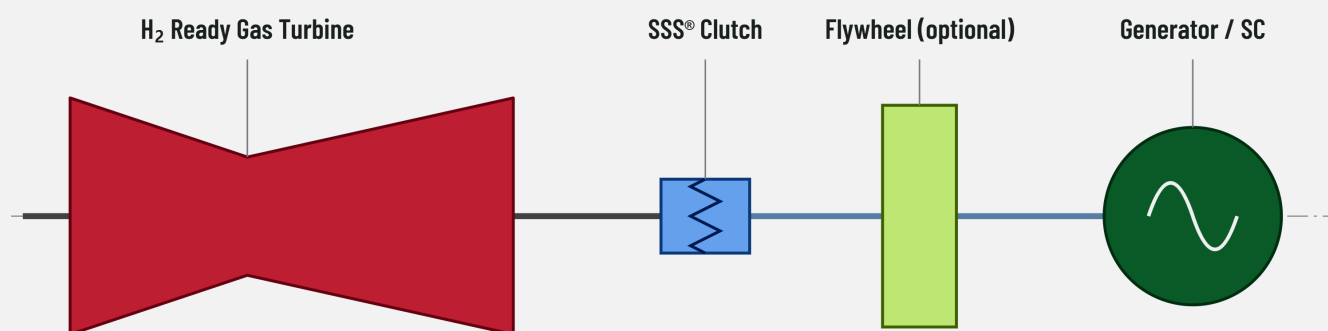
Short-circuit current for protection systems, beyond battery inverter capability.

SWIPE →

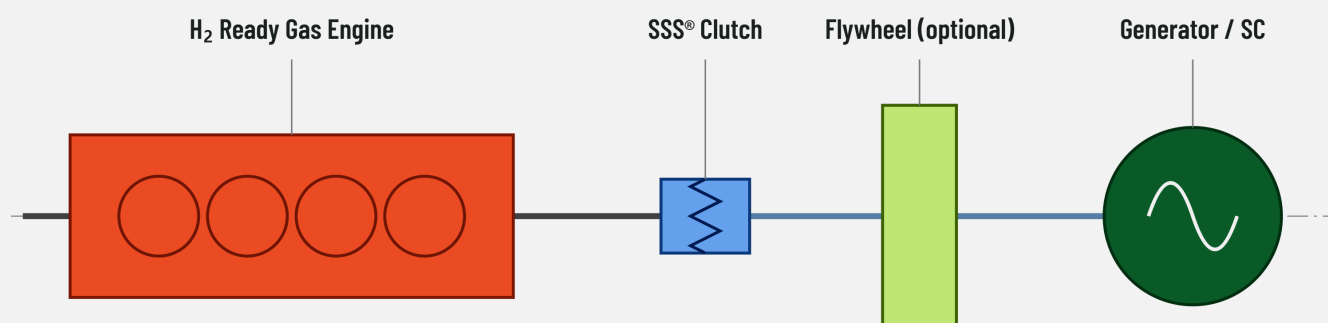


One machine arrangement, Two modes

Gas Turbine Drive



Gas/Diesel Engine Drive



SYNCHRONOUS CONDENSER MODE

Prime mover stopped. The clutch disengages and the generator stays synchronized to support the grid.

GENERATING MODE

The prime mover starts. When shaft speeds match, the SSS® Clutch engages automatically and the generator carries load.

SWIPE →





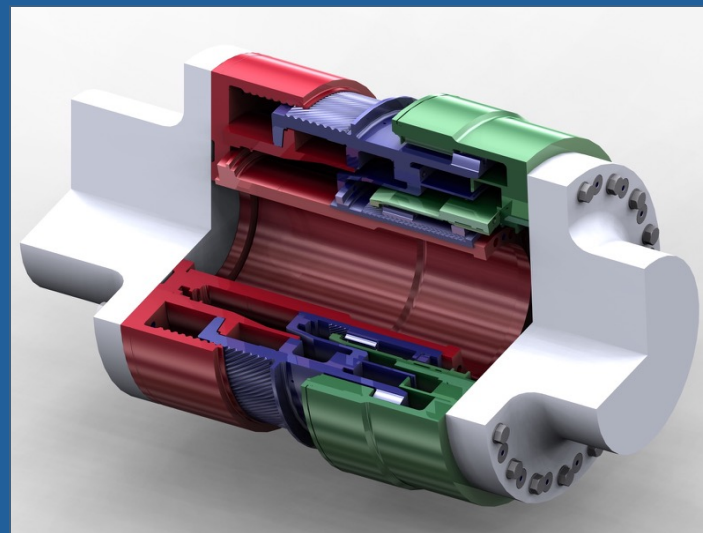
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**Intrigued?
Contact us to learn more.**

Over 50,000 Clutches sold!

Scaling up to 400MW or 17,000 rpm across purpose-built designs.



Engineering@SSSClutch.com

Engineering@SSSGears.co.uk

www.sssclutch.com · www.sssgears.co.uk