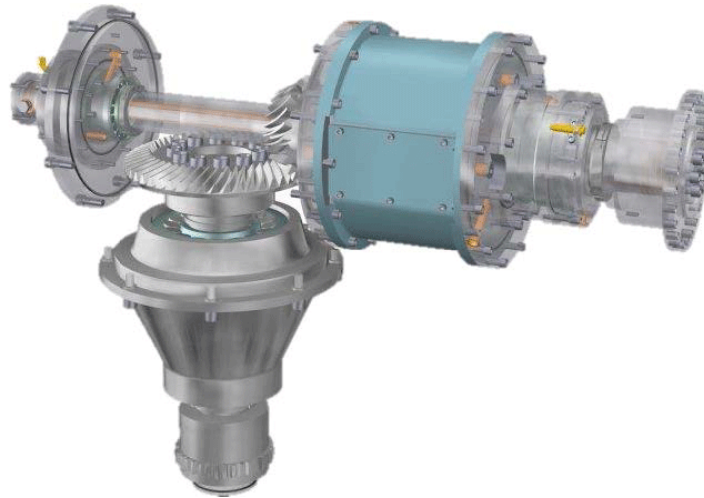




KONGSBERG

# US AZIMUTH THRUSTER FAMILY



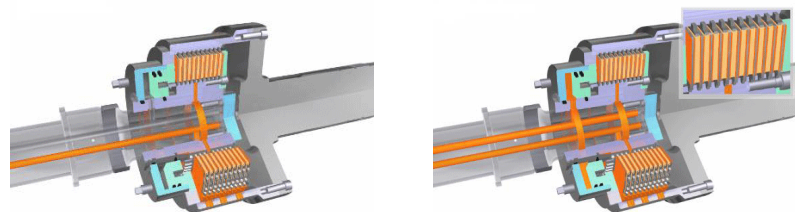
## KONGSBERG AZIMUTH THRUSTERS

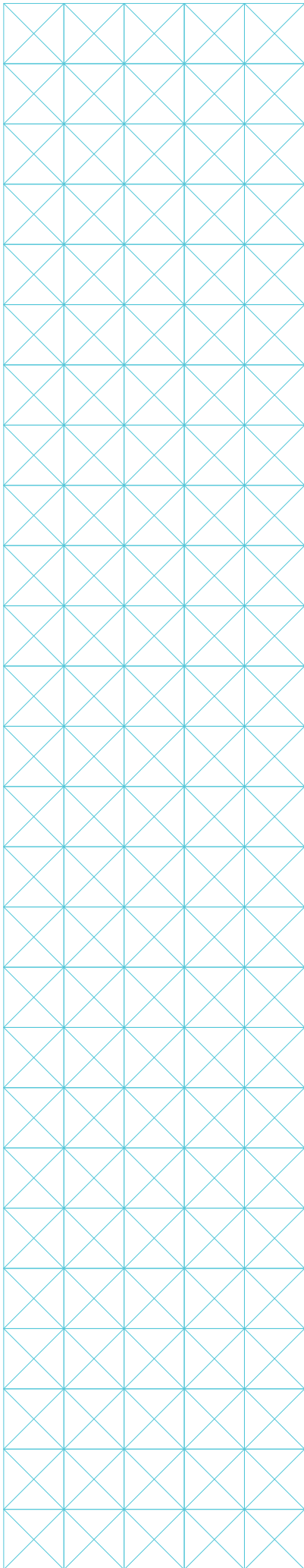
### Integrated low duty slipping clutch

The modulated multi-disc clutch with the slipping mode provides the smooth control for the propeller speed at the idle running of main engine and thus a slow speed operation for the vessels.

The multi-disc clutch is build-in type. The clutch elements are on the thruster input shaft inside the compact housing. There are two oil lines from pump via rotary coupling and borings:

- Pressure oil line for actuation of the piston. The piston compresses discs and so that the clutch is frictionally engaged
- Flushing oil line is for lubrication and cooling of clutch discs





In case of sudden electric power loss (during engaged/disengaged-mode) the clutch maintains the position. If the hydraulic pressure is lost the clutch disengages but it can be locked manually to engaged position.

### The clutch operates in two modes:

- Clutch with slipping function when the lever is 0-30% range. The prime mover is running at idle speed but the propeller speed is adjustable by sliding the clutch
- The clutch is engaged when the control lever is 30-100% range. The prime mover speed can be adjusted from idle speed to full speed

