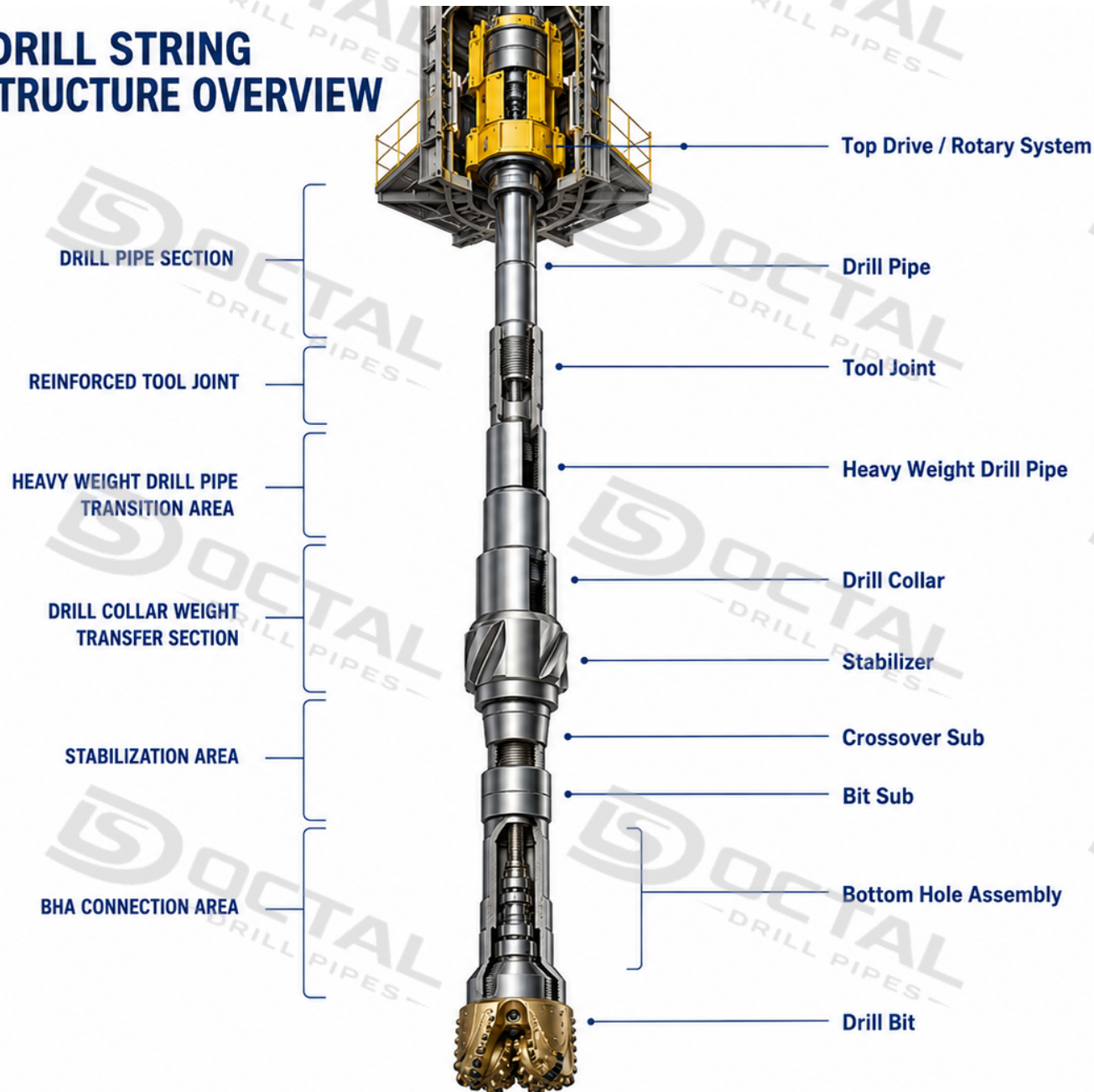


Complete Drill String Assembly Structure Overview

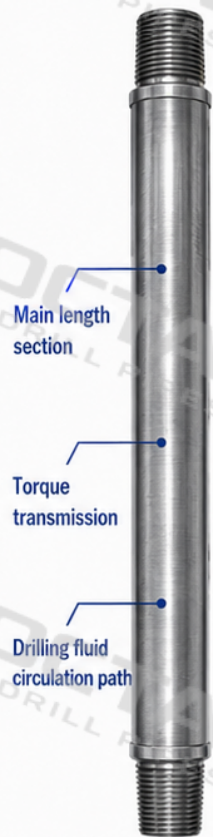
COMPLETE DRILL STRING ASSEMBLY STRUCTURE OVERVIEW



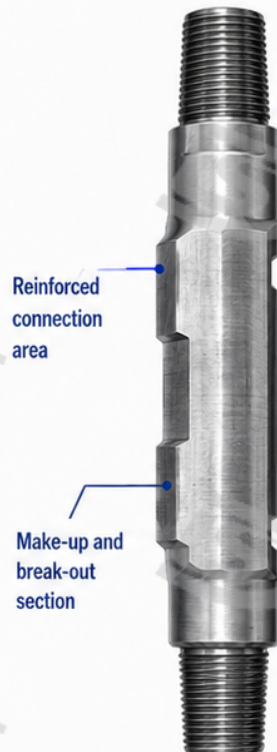
Drill String Components and Engineering Functions

DRILL STRING COMPONENTS AND ENGINEERING FUNCTIONS

DRILL PIPE



TOOL JOINT



HEAVY WEIGHT
DRILL PIPE



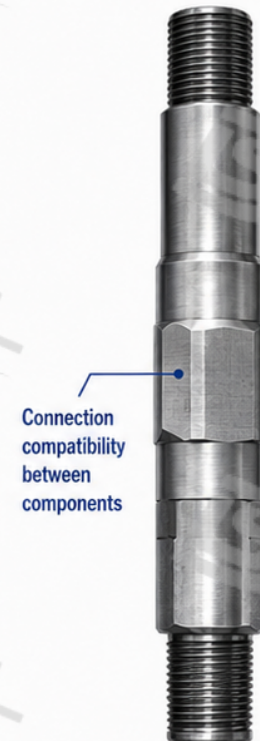
DRILL COLLAR



STABILIZER

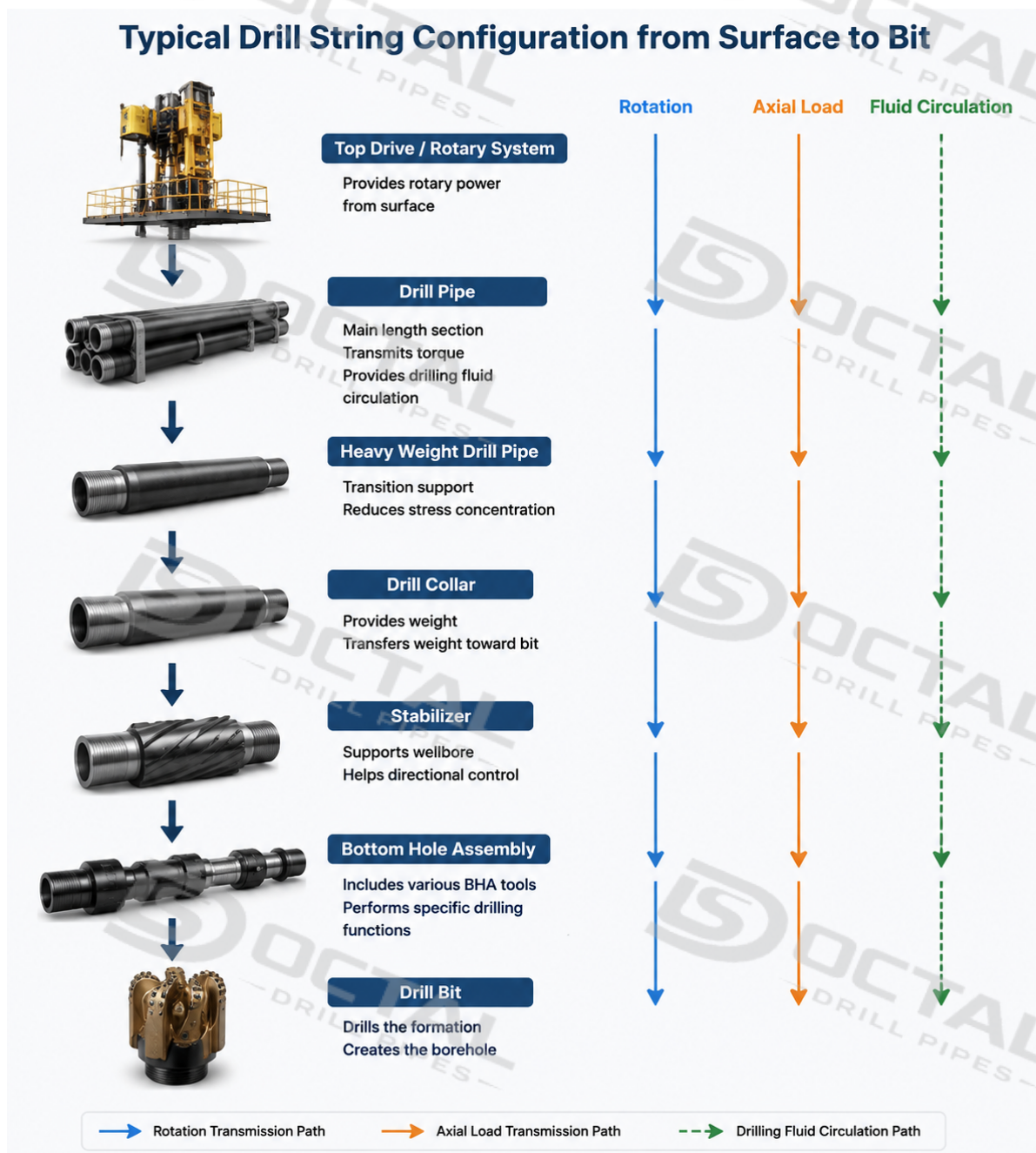


CROSSOVER SUB

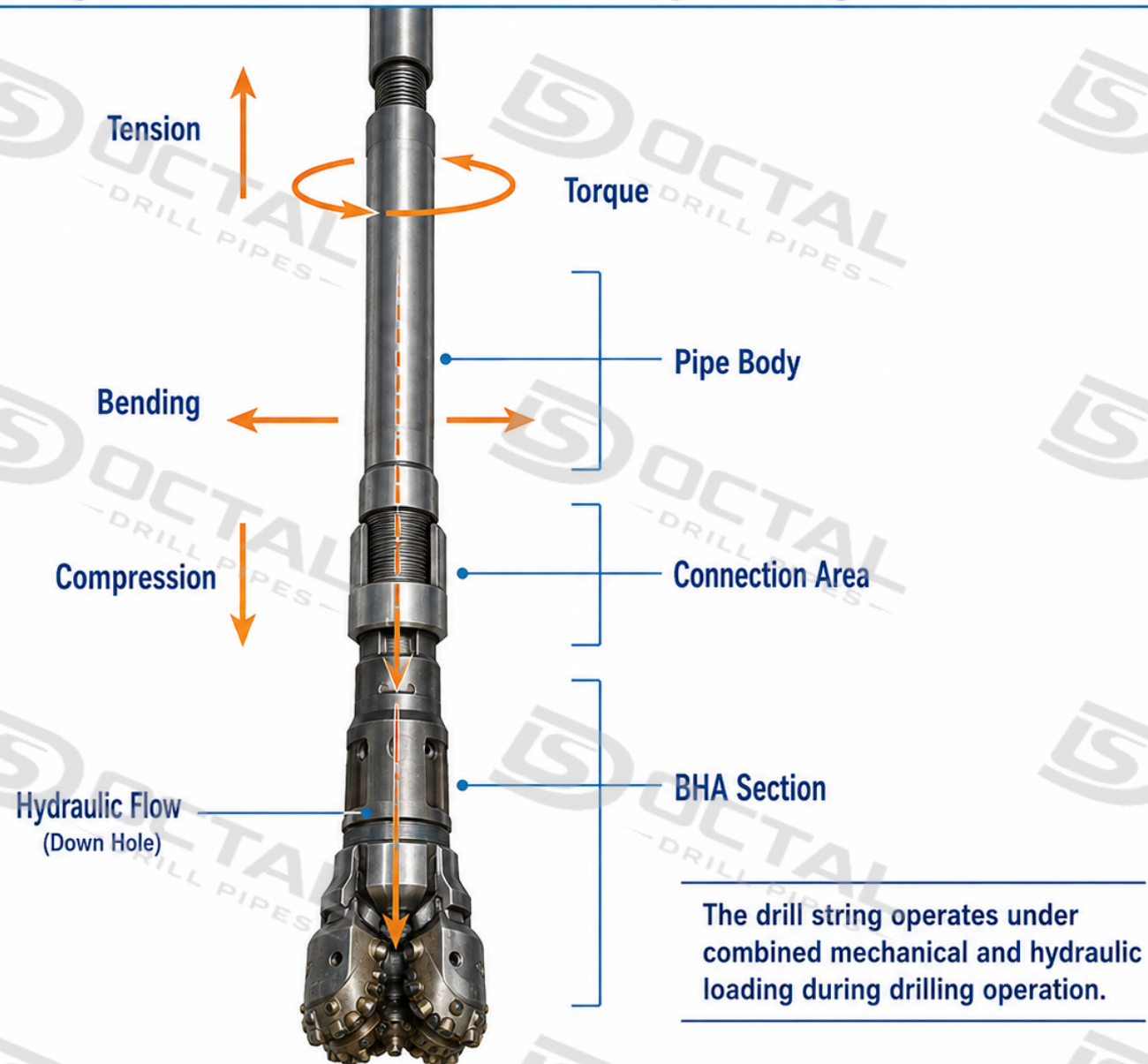


Typical Drill String Configuration from Surface to Bit

Typical Drill String Configuration from Surface to Bit



Drill String Load Transmission and Operating Conditions



Drill String Configuration Selection Factors

Balanced operating conditions and engineering requirements drive optimal drill string design.

