泥水平衡盾构机
Slurry Pressure Balance Shield

在主机的前部设置隔板形成泥水仓，向仓内注泥水并保持高压，使泥水向开挖面的泥土中渗透形成泥膜；利用仓内的泥水压力、刀盘面板的支撑和泥膜的联合作用，抵抗地下土压和水压，保持开挖面压力平衡；在此压力平衡状态下，刀盘对泥膜进行切削，切削下来的泥土进入仓内形成泥浆。同时，在压力作用下泥水不断渗透补充形成新的泥膜；将仓内泥浆输出，用设备使之分离成泥水和渣土，分离出的泥水再注回到仓内；推进盾构，安装管片，形成一个工作循环。大直径、高耐压的泥水盾构，尤其适用于挖掘穿越江河湖海底等高水压条件的长距离隧道。

There is a clapboard in the front of SPB to make a slurry room , charging slurry in and keeping high pressure, forcing slurry to soak into earth and become a soil membrane; the united pressure of slurry, cutter head plate and soil membrane, resists the pressure of earth and water, to get a pressure balance. In the pressure balance, the cutter head cuts soil membrane, soil gets off and dissolves into slurry, the slurry becomes mucous. In the same time, slurry continues soak into earth and becomes new membrane. Discharging mucous slurry, using equipment filtrate mucous slurry to soil and slurry, charging slurry back into slurry room. Advance SPB and installing segment, maks a operation cycle. Large diameter, high pressure SPB, is applicable to excavate long distance tunnel under through river, lake, and sea.

三一盾构有能力研制从Φ4m至Φ15m尺寸的泥水平衡盾构。

Sany provides many sizes of SPB from Φ4m to Φ15m.