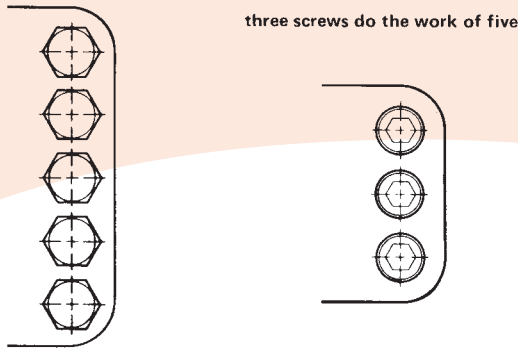
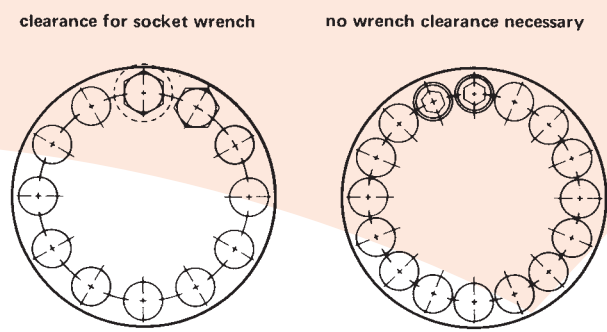


**FEWER HOLES TO DRILL AND TAP**



three screws do the work of five

**COMPACT SPACING**



clearance for socket wrench

no wrench clearance necessary

**old method**

5—M10 screws @ 800 N/mm<sup>2</sup> tensile  
 640 N/mm<sup>2</sup> yield =  
 5 x 640 x 58 =  
 186 kN max. load

**UNBRAKO method**

3—M10 screws @ 1300 N/mm<sup>2</sup> tensile  
 1170 N/mm<sup>2</sup> yield =  
 3 x 1170 x 58 =  
 204 kN max. load

**old method**

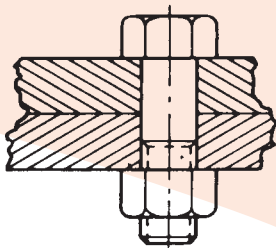
12—M16 hexagon head screws @ 800 N/mm<sup>2</sup> tensile strength  
 Total strength = 1206 kN

**UNBRAKO method**

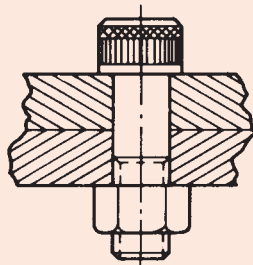
16—M16 socket head cap screws @ 1300 N/mm<sup>2</sup> tensile strength  
 Total strength = 2940 kN

**HIGH TENSILE AND YIELD STRENGTH**

ordinary bolts



socket head cap screws



**old method**

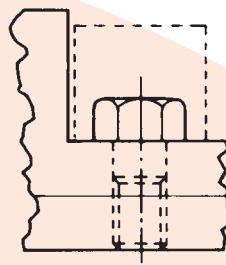
800 N/mm<sup>2</sup> M12 bolt  
 tensile = 67 kN  
 yield = 54 kN

**UNBRAKO method**

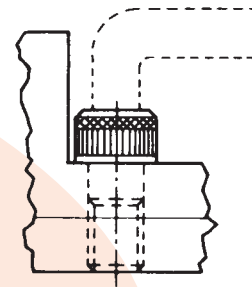
1300 N/mm<sup>2</sup> M12 UNBRAKO bolt  
 tensile = 110 kN  
 yield = 99 kN  
**Extra UNBRAKO joint strength:**  
 tensile – 64% increase  
 yield – 83% increase

**HIGH SHEAR STRENGTH**

ordinary bolts



socket head cap screw



**old method**

800 N/mm<sup>2</sup> M12 bolt  
 Shear strength = 40 kN

**UNBRAKO method**

1300 N/mm<sup>2</sup> M12 UNBRAKO bolt  
 Shear strength = 66 kN  
**Extra UNBRAKO shear strength = 26 kN less wrenching space needed**

**Example** (shown above)—against adjacent machine parts UNBRAKO screw requires 50% less space for clearance.

In counterbored screw application UNBRAKO screws require minimum counterbore since no wrench clearance is necessary.