

| Material                                                     | Tightening torque MA [Nm] |     |     |     |     |     |           |       | Preload force FV [N] |
|--------------------------------------------------------------|---------------------------|-----|-----|-----|-----|-----|-----------|-------|----------------------|
|                                                              | M10                       | M12 | M16 | M20 | M24 | M27 | 1 1/4-8UN | M33   |                      |
| C35E - 1.1181                                                | 20                        |     |     |     |     |     |           |       | 3.200                |
| X6CrNiMoTi17-22-2 - 1.4571;<br>ASME SA-193<br>Gr. B8M, cl. 1 | 10                        |     |     |     |     |     |           |       | 2.400                |
|                                                              |                           | 18  |     |     |     |     |           |       | 6.000                |
|                                                              |                           |     | 100 |     |     |     |           |       | 14.100               |
|                                                              |                           |     |     | 200 |     |     |           |       | 24.000               |
|                                                              |                           |     |     |     | 270 |     |           |       | 38.000               |
|                                                              |                           |     |     |     |     | 380 |           |       | 52.300               |
| 42CrMo4 - 1.7225;<br>ASME SA-193 Gr. B7 + B16                |                           | 52  |     |     |     |     |           |       | 12.780               |
|                                                              |                           |     | 100 |     |     |     |           |       | 35.400               |
|                                                              |                           |     |     | 320 |     |     |           |       | 57.900               |
|                                                              |                           |     |     |     | 400 |     |           |       | 70.600               |
|                                                              |                           |     |     |     |     | 650 |           |       | 114.000              |
|                                                              |                           |     |     |     |     |     | 850       |       | 101.000              |
|                                                              |                           |     |     |     |     |     |           | 1.300 | 156.000              |
| 25CrMo4 - 1.7218                                             |                           |     | 100 |     |     |     |           |       | 26.400               |
|                                                              |                           |     |     | 160 |     |     |           |       | 42.000               |
|                                                              |                           |     |     |     | 320 |     |           |       | 63.000               |
|                                                              |                           |     |     |     |     | 400 |           |       | 81.000               |

\* Lubricants Molykote/OKS280

The tightening torques, specified in the table for the prestressing forces, are mean values for oiled thread surfaces which are determined by experiments. It should be noted that by repeated tightening and other lubricants or surface treated threads, the tightening torques can be change. (Deviations of + / - 10% are possible).

On request, the torques are determined by experiments in our laboratory as a function of the biasing force (resulting from the kind and size of the seal) and the lubricant used by the pressure equipment manufacturer.