

|                                                                                     |                            |                              |                               |                       |                          |                 |                                      |
|-------------------------------------------------------------------------------------|----------------------------|------------------------------|-------------------------------|-----------------------|--------------------------|-----------------|--------------------------------------|
| Quality                                                                             | X17CrNi16-2                |                              |                               |                       |                          |                 |                                      |
| According to Standard                                                               | EN 10088-3:2005 (E)        |                              |                               |                       |                          |                 |                                      |
| Number                                                                              | 1.4057                     |                              |                               |                       |                          |                 |                                      |
|  |                            |                              |                               |                       |                          |                 |                                      |
| Comparable Standards                                                                | EN                         | W.N.                         | AISI                          |                       |                          |                 |                                      |
|                                                                                     | X17CrNi16-2                | 1.4057                       | 431                           |                       |                          |                 |                                      |
| Chemical Analysis                                                                   | C %                        | Si % max                     | Mn %                          | P% max                | S%                       | Cr %            |                                      |
|                                                                                     | 0.12 - 0.22                | 1.00                         | ≤ 1.50                        | 0.04                  | ≤ 0.030 <sup>b</sup>     | 15.0 - 17.0     |                                      |
|                                                                                     | Cu                         | Mo %                         | Nb                            | Ni %                  | Others                   |                 |                                      |
|                                                                                     | —                          | —                            | —                             | 1.50 - 2.50           | —                        |                 |                                      |
| Hot Work and Heat Treatment Temperatures                                            |                            |                              |                               |                       |                          |                 |                                      |
| Heat Treatment Symbol                                                               | Hot Forming Temperature °C | Type of cooling              | Annealing Temperature °C      | Type of cooling       | Quenching Temperature °C | Type of cooling | Tempering Temperature °C             |
| +A <sup>c</sup>                                                                     | 1100 to 800                | slow cooling                 | 680 to 800                    | furn.,air             | —                        | —               | —                                    |
| +QT 800 <sup>d</sup>                                                                | 1100 to 800                | slow cooling                 | —                             | —                     | 950 to 1050              | oil, air        | 750 to 800 + 650 to 700 <sup>d</sup> |
| +QT 900                                                                             | 1101 to 800                | slow cooling                 | —                             | —                     | 950 to 1050              | oil, air        | 600 to 650                           |
| Mechanical Properties at Room Temperature                                           |                            |                              |                               |                       |                          |                 |                                      |
| Heat Treatment Condition                                                            | Ø mm.                      | Hardness HB <sup>c</sup> max | Rp0,2 <sup>d</sup> min. N/mm2 | Rm <sup>d</sup> N/mm2 | A <sup>d</sup> min. %    | KV min. J       |                                      |
| +A                                                                                  | —                          | 295                          | —                             | max 950               | —                        | —               |                                      |
| +QT 800                                                                             | ≤ 60<br>60 < t ≤ 160       | —                            | 600                           | 800 to 950            | 14<br>12                 | 25<br>20        |                                      |
| +QT 900                                                                             | ≤ 60<br>60 < t ≤ 160       | —                            | 700                           | 900 to 1050           | 12<br>10                 | 20<br>15        |                                      |