

# TECHNICAL INFORMATION TECHNISCHE AUSKÜNFTE

|   |               |
|---|---------------|
| Reference list of materials<br>Werkstoffliste | <b>K02-07</b> |
| Alphanumeric index<br>Alphanumerischer Inhalt | <b>K08-15</b> |
| General information<br>Allgemeine Auskunft    | <b>K16</b>    |
| Safety regulations<br>Sicherheitsvorschriften | <b>K17-18</b> |

**Reference list of materials (Steels)**  
**Werkstoffliste (Stähle)**

| ISO   | Germany<br>Deutschland |            | U.S.A           | Japan          | Spain<br>Spanien | U.K.            |       | Sweden<br>Schweden | France<br>Frankreich | Italy<br>Italien |
|---|------------------------|------------|-----------------|----------------|------------------|-----------------|-------|--------------------|----------------------|------------------|
|   | W.-nr.                 | DIN        | AISI/SAE        | JIS            | UNE              | BS              | EN    | SS                 | AFNOR                | UNI              |
| <b>P</b><br>Unalloyed steel<br>Unlegierter Stahl        | 1.0038                 | RSt.37-2   | A570.36         | STKM 12A;C     | -                | 4360 40 C       | -     | 1311               | E 24-2 Ne            | -                |
|   | 1.0038                 | GS-CK16    | 1115            | -              | -                | 030A04          | 1A    | 1325               | -                    | -                |
|   | 1.0116                 | St.37-3    | A573-81 65      | -              | F.111            | 4360 40 B       | -     | 1312               | E 24-U               | Fe37-3           |
|   | 1.0401                 | C15        | 1015            | -              | F.112            | 080M15          | -     | 1350               | CC12                 | C15C16           |
|   | 1.0402                 | C22        | 1020            | -              | 11SMn28          | 050A20          | 2C/2D | 1450               | CC20                 | C20C21           |
|   | 1.0715                 | 9SMn28     | 1213            | SUM22          | 11SMnPb28        | 230M07          | -     | 1912               | S250                 | CF9SMn28         |
|   | 1.0718                 | 9SMnPb28   | 12L13           | SUM22L         | 10SPb20          | -               | -     | 1914               | S250Pb               | CF9SMnPb28       |
|   | 1.0722                 | 10SPb20    | -               | -              | 12SMn35          | -               | -     | -                  | 10PbF2               | CF10Pb20         |
|   | 1.0736                 | 9SMn36     | 1215            | -              | 12SMnPb36        | 240M07          | 1B    | -                  | S300                 | CF9SMn36         |
|   | 1.0737                 | 9SMnPb36   | 12L14           | -              | C15K             | -               | -     | 1926               | S300Pb               | CF9MnPb36        |
|   | 1.1141                 | Ck15       | 1015            | S15C           | -                | 080M15          | 32C   | 1370               | XC12                 | C16              |
|   | 1.1158                 | Ck25       | 1025            | S25C           | -                | -               | -     | -                  | -                    | -                |
|   | 1.8900                 | StE 380    | A572-60         | -              | -                | 4360 55 E       | -     | 2145               | -                    | FeE390KG         |
|   | -                      | 17 MnV 6   | A572-60         | -              | -                | 4360 55 E       | -     | 2142               | NFA 35-501 E36       | -                |
|   | 1.0501                 | C35        | 1035            | -              | F.113            | 060A35          | -     | 1550               | CC35                 | C35              |
|   | 1.0503                 | C45        | 1045            | -              | F.114            | 080M46          | -     | 1650               | CC45                 | C45              |
|   | 1.0726                 | 35S20      | 1140            | -              | F210G            | 212M36          | 8M    | 1657               | 35MF4                | -                |
|   | 1.1157                 | 40Mn4      | 1039            | -              | -                | 150M36          | 15    | -                  | 35M5                 | -                |
|   | 1.1167                 | 36Mn5      | 1335            | SMn438(H)      | 36Mn5            | -               | -     | 2120               | 40M5                 | -                |
|   | 1.1170                 | 28Mn6      | 1330            | SCMn1          | -                | 150M28          | 14A   | -                  | 20M5                 | C28Mn            |
|   | 1.1183                 | Cf35       | 1035            | S35C           | -                | 060A35          | -     | 1572               | XC38TS               | C36              |
|   | 1.1191                 | Ck45       | 1045            | S45C           | C45K             | 080M46          | -     | 1672               | CX42                 | C45              |
|   | 1.1213                 | Cf53       | 1050            | S50C           | -                | 060A52          | -     | 1674               | XC48TS               | C53              |
|   | 1.0535                 | C55        | 1055            | -              | -                | 070M55          | -     | 1655               | -                    | C55              |
|   | 1.0601                 | C60        | 1060            | -              | -                | 080A62          | 43D   | -                  | CC55                 | C60              |
|   | 1.1203                 | Ck55       | 1055            | S55c           | C55K             | 070M55          | -     | -                  | XC55                 | C50              |
|   | 1.1221                 | Ck60       | 1060            | S58C           | -                | 080A62          | 43D   | 1678               | XC60                 | C60              |
|   | 1.1274                 | CK 101     | 1095            | -              | F-5117           | 060A96          | -     | 1870               | XC100                | -                |
|   | 1.1545                 | C105W1     | W 1             | SK 3           | F-5118           | BW1A            | -     | 1880               | Y105                 | C36KU            |
|   | 1.1545                 | C105W1     | W210            | SUP4           | F.515            | BW2             | -     | 2900               | Y120                 | C120KU           |
| <b>P</b><br>Low alloyed steel<br>Niedriglegierter Stahl | 1.0144                 | St.44-2    | A573-81         | SM400A;B;C     | -                | 4360 43C        | -     | 1412               | E28-3                | -                |
|   | 1.0570                 | St.52-3    | -               | SM490A;B;YA;YB | -                | 4360 50B        | -     | 2132               | E36-3                | Fe52BFN/Fe52CFN  |
|   | 1.0841                 | St.52-3    | 5120            | -              | F-431            | 150 M 19        | -     | 2172               | 20 MC 5              | Fe52             |
|   | 1.0904                 | 55Si7      | 9255            | -              | 56Si7            | 250A53          | 45    | 2085               | 55S7                 | 55Si8            |
|   | 1.0961                 | 60SiCr7    | 9262            | -              | 60SiCr8          | -               | -     | -                  | 60SC7                | 60SiCr8          |
|   | 1.3505                 | 100Cr      | 52100           | SUJ2           | F.131            | 534A99          | 31    | 2258               | 100C6                | 100Cr6           |
|   | 1.5415                 | 15Mo3      | ASTM A204Gr.A   | -              | 16Mo3            | 1501-240        | -     | 2912               | 15D3                 | 16Mo3KW          |
|   | 1.5423                 | 16Mo5      | 4520            | -              | 16Mo5            | 1503-245-420    | -     | -                  | -                    | 16Mo5            |
|   | 1.5622                 | 14Ni6      | ASTM A350LF5    | -              | 15Ni6            | -               | -     | -                  | 16N6                 | 14Ni6            |
|   | 1.6523                 | 21NiCrMo2  | 8620            | SNCM220(H)     | 20NiCrMo2        | 805M20          | 362   | 2506               | 20NCD2               | 20NiCrMo2        |
|   | 1.6546                 | 40NiCrMo22 | 8740            | SNCM240        | 40NiCrMo2        | 311-Type7       | -     | -                  | -                    | 40NiCrMo2(KB)    |
|   | 1.6587                 | 17CrNiMo6  | -               | -              | 14NiCrMo13       | 820A16          | -     | -                  | 18NCD6               | -                |
|   | 1.7015                 | 15Cr3      | 5015            | SCr415(H)      | -                | 523M15          | -     | -                  | 12C3                 | -                |
|   | 1.7045                 | 42Cr4      | 5140            | SCr440         | 42Cr4            | -               | -     | 2245               | -                    | -                |
|   | 1.7176                 | 55Cr3      | 5155            | SUP9(A)        | -                | 527A60          | 48    | -                  | 55C3                 | -                |
|   | 1.7262                 | 15CrMo5    | -               | SCM415(H)      | 12CrMo4          | -               | -     | 2216               | 12CD4                | -                |
|   | 1.7335                 | 13CrMo4 4  | ASTMA182F11;F12 | -              | 14CrMo45         | 1501-620Gr27    | -     | -                  | 15CD3.5              | 14CrMo4 5        |
|   | 1.7380                 | 10CrMo9 10 | ASTMA182F.22    | -              | TU.H             | 1501-622Gr31;45 | -     | 2218               | 12CD9, 10            | 12CrMo9, 10      |

**Reference list of materials (Steels)**  
**Werkstoffliste (Stähle)**

| ISO   | Germany<br>Deutschland |              | U.S.A     | Japan           | Spain<br>Spanien | U.K.         |      | Sweden<br>Schweden | France<br>Frankreich | Italy<br>Italien |
|---|------------------------|--------------|-----------|-----------------|------------------|--------------|------|--------------------|----------------------|------------------|
|   | W.-nr.                 | DIN          | AISI/SAE  | JIS             | UNE              | BS           | EN   | SS                 | AFNOR                | UNI              |
| <b>P</b><br>Low alloyed steel<br>Niedriglegierter Stahl | 1.7715                 | 14MoV6 3     | -         | -               | 13MoCrV6         | 1503-660-440 | -    | -                  | -                    | -                |
|   | 1.8515                 | 31 CeMo 12   | -         | -               | F-1712           | 722 M 24     | -    | 2240               | -                    | 30CrMo12         |
|   | 1.8523                 | 39CrMoV13 9  | -         | -               | -                | 897M39       | -    | -                  | 30 CD 12             | 36CrMoV12        |
|   | 1.7039                 | 34MoCrS4 G   | L1        | -               | -                | 524A14       | 40C  | 2092               | -                    | 105WCR 5         |
|   | 1.5419                 | 20MoCrS4     | 8620      | -               | F520.S           | 605A32       | -    | 2108               | -                    | -                |
|   | 1.7228                 | 55NiCrMoV6G  | -         | -               | -                | 823M30       | -    | 2512               | -                    | 653M31           |
|   | 1.7139                 | 16MnCr5      | -         | -               | -                | -            | 33   | 2127               | -                    | -                |
|   | -                      | 31NiCrMo134  | -         | -               | F-1270           | 830M31       | -    | 2534               | -                    | -                |
|   | 1.271                  | 50NiCr13     | L6        | -               | F-528            | -            | -    | 2550               | 55NCV6               | -                |
|   | 1.5710                 | 36NiCr6      | 3135      | SNC236          | -                | 640A35       | 111A | -                  | 35NC6                | -                |
|   | 1.5732                 | 14NiCr10     | 3415      | SNC415(H)       | 15NiCr11         | -            | -    | -                  | 14NC11               | 16NiCr11         |
|   | 1.5752                 | 14NiCr14     | 3415;3310 | SNC815(H)       | -                | 655M13;A12   | 36A  | -                  | 12NC15               | -                |
|   | 1.0904                 | 55Si7        | 9255      | -               | -                | -            | -    | 2090               | 55S7                 | -                |
|   | 1.6511                 | 36CrNiMo4    | 9840      | -               | 35NiCrMo4        | 816M40       | 110  | -                  | 40NCD3               | 38NiCrMo4(KB)    |
|   | 1.6582                 | 35CrNiMo6    | 4340      | -               | -                | 817M40       | 24   | 2541               | 35NCD6               | 35NiCrMo6(KB)    |
|   | 1.7033                 | 34Cr4        | 5132      | SCr430(H)       | 35Cr4            | 530A32       | 18B  | -                  | 32C4                 | 34Cr4(KB)        |
|   | 1.7035                 | 41Cr4        | 5140      | SCr440(H)       | 42Cr4            | 530A40       | 18   | -                  | 42C4                 | 41Cr4            |
|   | 1.7131                 | 16MnCr5      | 5115      | -               | 16MnCr5          | (527M20)     | -    | 2511               | 16MC5                | 16MnCr5          |
|   | 1.7218                 | 25CrMo4      | 4130      | SCM420;SCM430   | 55Cr3            | 1717CDS110   | -    | 2225               | 25CD4                | 25CrMo4(KB)      |
|   | 1.7220                 | 34CrMo4      | 4137;4135 | SCM432;SCCRM3   | 34CrMo4          | 708A37       | 19B  | 2234               | 35CD4                | 35CrMo4          |
|   | 1.7223                 | 41CrMo4      | 4140;4142 | SCM440          | 42CrMo4          | 708M40       | 19A  | 2244               | 42CD4TS              | 41CrMo4          |
|   | 1.7225                 | 42CrMo4      | 4140      | SCM440(H)       | 42CrMo4          | 708M40       | 19A  | 2244               | 42CD4                | 42CrMo4          |
|   | 1.7361                 | 32CrMo12     | -         | -               | F.124.A          | 722M24       | 40B  | 2240               | 30CD12               | 32CrMo12         |
|   | 1.8159                 | 50CrV4       | 6150      | SUP10           | 51CrV4           | 735A50       | 47   | 2230               | 50CV4                | 50CrV4           |
|   | 1.8509                 | 41CrAlMo7    | -         | -               | 41CrAlMo7        | 905M39       | 41B  | 2940               | 40CAD6,12            | 41CrAlMo7        |
|   | 1.2067                 | 100Cr6       | L3        | -               | 100Cr6           | BL3          | -    | -                  | Y100C6               | -                |
|   | 1.2419                 | 105WCr6      | -         | SKS31,SKS2,SKS3 | 105WCr5          | -            | -    | 2140               | 105WC13              | 10WCr6           |
| 1.2713  | 55NiCrMoV6             | L6           | SKT4      | F.520.S         | -                | -            | -    | 55NCDV7            | -                    |                  |
| <b>P</b><br>High alloyed steel<br>Hochlegierter Stahl   | 1.5662                 | X8Ni9        | ASTM A353 | -               | XBNI09           | 1501-509;510 | -    | -                  | -                    | X10Ni9           |
|   | 1.5680                 | 12Ni19       | 2515      | -               | -                | -            | -    | -                  | Z18N5                | -                |
|   | 1.6657                 | 14NiCrMo134  | -         | -               | 14NiCrMo131      | 832M13       | 36C  | -                  | -                    | 15NiCrMo131      |
|   | 1.2.080                | X210Cr12     | D3        | SKD1            | X210Cr12         | BD3          | -    | -                  | Z200C12              | X210Cr13KU       |
|   | 1.2083                 | -            | -         | -               | -                | -            | -    | 2314               | -                    | X250Cr12KU       |
|   | 1.2344                 | X40CrMoV5 1  | H13       | SKD61           | X40CrMoV5        | BH13         | -    | 2242               | Z40CDV5              | X35CrMoV05KU     |
|   | 1.2363                 | X100CrMoV5 1 | A2        | SKD12           | X100CrMoV5       | BA2          | -    | 2260               | Z100CDV5             | X40CrMoV511KU    |
|   | 1.2436                 | X210CrW12    | -         | SKD2            | X210CrW12        | -            | -    | 2312               | -                    | X100CrMoV51KU    |
|   | 1.2542                 | 45WCrV7      | S1        | -               | 45WCrSi8         | BS1          | -    | 2710               | -                    | X215CrW12 1KU    |
|   | 1.2581                 | X30wCrV9 3   | H21       | SKD5            | X30WCrV9         | BH21         | -    | -                  | Z30WCV9              | 45WCrV8KU        |
|   | 1.2601                 | X165CrMoV 12 | -         | -               | X160CrMoV12      | -            | -    | 2310               | -                    | X28W09KU         |
|   | 1.4718                 | X45GrSi93    | HW3       | SUH1            | F322             | 401S45       | 52   | -                  | Z45CS9               | X160CrMoV12      |
|   | 1.3343                 | S6-5-2       | D3        | SUH3            | -                | 4959BA2      | -    | 2715               | Z40CSD10             | F322             |
|   | 1.3343                 | S6/5/2       | M 2       | SKH 51          | F-5603           | BM 2         | -    | 2722               | Z 85 WDCV            | -                |
|   | 1.3243                 | S6/5/2/5     | M 35      | SKH 55          | F-5613           | BM 35        | -    | 2723               | 6-5-2-5              | F-5603           |
|   | 1.3348                 | S2/9/2       | M 7       | -               | F-5607           | -            | -    | 2782               | -                    | F-5607           |
| 1.2379  | X210Cr12 G             | HNV3         | -         | -               | -                | -            | 2736 | -                  | -                    |                  |
| <b>P</b><br>Steel castings<br>Stahlguss                 | -                      | -            | -         | -               | -                | -            | -    | 2223               | -                    | -                |
|   | 1.3401                 | G-X210Mn12   | -         | SCMnH/1         | X120Mn12         | Z120M12      | -    | -                  | Z120M12              | XG120Mn12        |
|   | 1.3401                 | -            | -         | SEMn H1         | F-8251           | BW 10        | -    | 2183               | 2120 M12             | Gx120 Mn12       |

**Reference list of materials (Stainless steels)**  
**Werkstoffliste (Rostfreie Stähle)**

| ISO   | Germany<br>Deutschland |                | U.S.A       | Japan        | Spain<br>Spanien | U.K.     |      | Sweden<br>Schweden | France<br>Frankreich | Italy<br>Italien |
|---|------------------------|----------------|-------------|--------------|------------------|----------|------|--------------------|----------------------|------------------|
|   | W.-nr.                 | DIN            | AISI/SAE    | JIS          | UNE              | BS       | EN   | SS                 | AFNOR                | UNI              |
| <b>M</b><br>Stainless steel (Ferritic / martensitic)<br>Rostfreier Stahl (Ferritisch / Martensitisch) | 1.4000                 | X7Cr13         | 403         | SUS403       | F.3110           | 403S17   | -    | 2301               | Z6Cr13               | X6Cr13           |
|   | 1.4001                 | X7Cr14         | -           | -            | F.8401           | -        | -    | -                  | -                    | -                |
|   | 1.4005                 | X12CrS13       | 416         | SUS416       | F-3411           | 416 S 21 | -    | 2380               | Z11CF13              | X12 CrS 13       |
|   | 1.4016                 | X8Cr17         | 430         | SUS430       | F3113            | 430S15   | 960  | 2320               | Z8C17                | X8Cr17           |
|   | 1.4006                 | X10Cr13        | 410         | SUS410       | F.3401           | 410S21   | 56A  | 2302               | Z10C14               | X12Cr13          |
|   | -                      | X8Cr17         | 430         | SUS430       | F.3113           | 430S17   | 60   | 2320               | Z8C17                | X8Cr17           |
|   | 1.4034                 | X46Cr13        | -           | SUS420J2     | F.3405           | 420S45   | 56D  | 2304               | Z40CM                | X40Cr14          |
|   | -                      | -              | -           | -            | -                | -        | -    | -                  | Z38C13M              | -                |
|   | 1.4003                 | -              | 405         | -            | -                | 405S17   | -    | -                  | Z8CA12               | X6CrAl13         |
|   | 1.4021                 | -              | 420         | -            | -                | 420S37   | -    | 2303               | Z20C13               | X20Cr13          |
|   | 1.4057                 | X22CrNi17      | 431         | SUS431       | F.3427           | 431S29   | 57   | 2321               | Z15CNi6.02           | X16CrNi16        |
|   | 1.4104                 | X12CrMoS17     | 430F        | SUS430F      | F.3117           | -        | -    | 2383               | Z10CF17              | X10CrS17         |
|   | 1.4113                 | X6CrMo17       | 434         | SUS434       | -                | 434S17   | -    | 2325               | Z8CD17.01            | X8CrMo17         |
|   | 1.4313                 | X5CrNi13 4     | CA6-NM      | SCS5         | -                | 425C11   | -    | 2385               | Z4CND13.4M           | (G)X6CrNi304     |
|   | 1.4724                 | X10CrA113      | 405         | SUS405       | F.311            | 403S17   | -    | -                  | Z10C13               | X10CrA112        |
|   | 1.4742                 | X10CrA118      | 430         | SUS430       | F.3113           | 430S15   | 60   | -                  | Z10CAS18             | X8Cr17           |
|   | 1.4747                 | X80CrNiSi20    | HNV6        | SUH4         | F.320B           | 443S65   | 59   | -                  | Z80CSN20.02          | X80CrSiNi20      |
|   | 1.4762                 | X10CrA124      | 446         | SUH446       | -                | -        | -    | 2322               | Z10CAS24             | X16Cr26          |
|   | 1.4871                 | X53CrMnNiN21 9 | EV8         | SUH35, SUH36 | -                | 349S54   | -    | -                  | Z52CMN21.09          | X53CrMnNiN219    |
|   | 1.4521                 | X1CrMoTi18 2   | S44400      | -            | -                | -        | -    | 2326               | -                    | -                |
| 1.4922  | X20CrMoV12-1           | -              | -           | -            | -                | -        | 2317 | -                  | X20CrMoNi 12 01      |                  |
| 1.4542/<br>1.4548   | -                      | 630            | -           | -            | -                | -        | -    | Z7CNU17-04         | -                    |                  |
| <b>M</b><br>Stainless steel (Austenitic)<br>Rostfreier Stahl (Austenitisch)                           | 1.4306                 | -              | 304L        | -            | -                | 304S11   | -    | 2352               | Z2CrNi18 11          | X2CrNi18 11      |
|   | 1.4350                 | X5CrNi189      | 304         | SUS304       | F.3551           | 304S31   | 58E  | 2332/2333          | Z6CN18.09            | X5CrNi18 10      |
|   | -                      | -              | -           | -            | F.3541           | -        | -    | -                  | -                    | -                |
|   | -                      | -              | -           | -            | F.3504           | -        | -    | -                  | -                    | -                |
|   | 1.4305                 | X12CrNiS18 8   | 303         | SUS303       | F.3508           | 303S21   | 58M  | 2346               | Z10CNF 18.09         | X10CrNiS 18.09   |
|   | 1.4301                 | X5CrNi189      | 304         | SUS304       | F.3551           | 304S15   | 58E  | 2332               | Z6CN18.09            | X5CrNi18 10      |
|   | -                      | -              | -           | SUS304L      | -                | 304C12   | -    | 2333               | Z3CN19.10            | -                |
|   | 1.4306                 | X2CrNi18 9     | 304L        | SCS19        | F.3503           | 304S12   | -    | 2352               | Z2CrNi18 10          | X2CrNi18 11      |
|   | 1.4310                 | X12CrNi17 7    | 301         | SUS301       | F.3517           | -        | -    | 2331               | Z12CN17.07           | X12CrNi17 07     |
|   | 1.4311                 | X2CrNiN18 10   | 304LN       | SUS304LN     | -                | 304S62   | -    | 2371               | Z2CN18.10            | -                |
|   | 1.4401                 | X5CrNiMo18 10  | 316         | SUS316       | F.3543           | 316S16   | 58J  | 2347               | Z6CND17.11           | X5CrNiMo17 12    |
|   | 1.4429                 | X2CrNiMoN18 13 | 316LN       | SUS316LN     | -                | -        | -    | 2375               | Z2CND17.13           | -                |
|   | 1.4404                 | -              | 316L        | -            | -                | 316S13   | -    | 2348               | Z2CND17-12           | X2CrNiMo1712     |
|   | 1.4435                 | X2CrNiMo18 12  | 316L        | SCS16        | -                | 316S13   | -    | 2353               | Z2CND17.12           | X2CrNiMo17 12    |
|   | -                      | -              | -           | SUS316L      | -                | -        | -    | -                  | -                    | -                |
|   | 1.4436                 | -              | 316         | -            | -                | 316S33   | -    | 2343               | Z6CND18-12-03        | X8CrNiMo1713     |
|   | -                      | -              | -           | -            | -                | -        | -    | 2347               | -                    | -                |
|   | 1.4438                 | X2CrNiMo18 16  | 317L        | SUS317L      | -                | 317S12   | -    | 2367               | Z2 NCDU25-20         | X2CrNiMo18 16    |
|   | 1.4539                 | X1NiCrMo       | UNS V 0890A | -            | -                | -        | -    | 2562               | Z6CNT18.10           | -                |
|   | 1.4541                 | X10CrNiTi18 9  | 321         | SUS321       | F.3553           | 321S12   | 58B  | 2337               | -                    | X6CrNiTi18 11    |
|   | -                      | -              | -           | -            | F.3523           | -        | -    | -                  | Z6CNNb18.10          | -                |
|   | 1.4550                 | X10CrNiNb18 9  | 347         | SUS347       | F.3552           | 347S17   | 58F  | 2338               | -                    | X6CrNiNb18 11    |
|   | -                      | -              | -           | -            | F.3524           | -        | -    | -                  | -                    | -                |
| 1.4571  | X10CrNiMoTi18 10       | 316Ti          | -           | F.3535       | 320S17           | 58J      | 2350 | Z6NDT17.12         | X6CrNiMoNb17 13      |                  |
| 1.4583  | X10CrNiMoNb 18 12      | 318            | -           | -            | -                | -        | -    | Z6CNDNb17 13B      | -                    |                  |
| 1.4828  | X15CrNiSi20 12         | 309            | SUH309      | -            | 309S24           | -        | -    | Z15CNS20.12        | X6CrNi25 20          |                  |

**Reference list of materials (Stainless steels)**  
**Werkstoffliste (Rostfreie Stähle)**

| ISO   | Germany<br>Deutschland |                | U.S.A    | Japan  | Spain<br>Spanien | U.K.    |     | Sweden<br>Schweden | France<br>Frankreich | Italy<br>Italien |
|---|------------------------|----------------|----------|--------|------------------|---------|-----|--------------------|----------------------|------------------|
|   | W.-nr.                 | DIN            | AISI/SAE | JIS    | UNE              | BS      | EN  | SS                 | AFNOR                | UNI              |
| <b>M</b><br>Stainless steel (Austenitic)<br>Rostfreier Stahl (Austenitisch)   | 1.4845                 | X12CrNi25 21   | 310S     | SUH310 | F.331            | 310S24  | -   | 2361               | Z12CN25 20           | -                |
|   | 1.4406                 | X10CrNi18.08   | 308      | SCS17  | F.8414           | 301S21  | 58C | 2370               | Z1NCUDU25.20         | -                |
|   | 1.4418                 | X4 CrNiMo16 5  | -        | -      | -                | -       | -   | 2387               | Z6CND16-04-01        | X2CrNiMo1712     |
|   | 1.4568/<br>1.4504      | -              | 17-7PH   | -      | -                | 316S111 | -   | -                  | Z8CNA17-07           | -                |
|   | 1.4563                 | -              | NO8028   | -      | -                | -       | -   | 2584               | Z1NCUDU31-27-03      | -                |
|   | -                      | -              | S31254   | -      | -                | -       | -   | 2378               | Z1CNDU20-18-06AZ     | -                |
| <b>M</b><br>Stainless steel (Austenitic / ferritic (duplex))<br>Rostfreier Stahl (Austenitisch / Ferritisch (duplex)) | 1.4417                 | X2CrNiMoSi19 5 | S31500   | -      | -                | -       | -   | 2376               | -                    | -                |
|   | -                      | X8CrNiMo27 5   | S32900   | -      | -                | -       | -   | 2324               | -                    | -                |
|   | -                      | X2CrNiN23 4    | S322304  | -      | -                | -       | -   | 2327               | Z2CN23-04AZ          | -                |
|   | -                      | -              | -        | -      | -                | -       | -   | 2328               | -                    | -                |
|   | -                      | X2CrNiMoN22 53 | S31803   | -      | -                | -       | -   | 2377               | Z2CND22-05-03        | -                |

**Reference list of materials (Castings)**  
**Werkstoffliste (Stahlguß)**

| ISO   | Germany<br>Deutschland |             | U.S.A       | Japan   | Spain<br>Spanien | U.K.        |    | Sweden<br>Schweden | France<br>Frankreich | Italy<br>Italien |
|---|------------------------|-------------|-------------|---------|------------------|-------------|----|--------------------|----------------------|------------------|
|   | W.-nr.                 | DIN         | AISI/SAE    | JIS     | UNE              | BS          | EN | SS                 | AFNOR                | UNI              |
| <b>K</b><br>Malleable cast iron<br>Temperguß      | -                      | -           | -           | FCMB310 | -                | 8 290/6     | -  | 0814               | MN 32-8              | -                |
|   | -                      | GTS-35      | 32510       | FCMW330 | -                | B 340/12    | -  | 0815               | MN 35-10             | -                |
|   | 0.8145                 | GTS-45      | 40010       | FCMW370 | -                | P 440/7     | -  | 0852               | Mn 450               | GMN 45           |
|   | 0.8155                 | GTS-55      | 50005       | FCMP490 | -                | P 510/4     | -  | 0854               | MP 50-5              | GMN 55           |
|   | -                      | GTS-65      | 70003       | FCMP540 | -                | P 570/3     | -  | 0858               | MP 60-3              | -                |
|   | 0.8165                 | GTS-65-02   | A220-70003  | FCMP590 | -                | P570/3      | -  | 0856               | Mn 650-3             | GMN 65           |
|   | 0.8170                 | GTS-70-02   | A220-80002  | FCMP690 | -                | P690/2      | -  | 0862               | Mn700-2              | GMN 70           |
| <b>K</b><br>Cast iron<br>Gratguß                  | -                      | -           | -           | -       | -                | -           | -  | 0100               | -                    | -                |
|   | -                      | GG10        | No 20 B     | FC100   | -                | -           | -  | 0110               | Ft 10 D              | -                |
|   | 0.6015                 | GG15        | No 25 B     | FC150   | FG 15            | Grade 150   | -  | 0115               | Ft 15 D              | G 15             |
|   | 0.6020                 | GG20        | No 30 B     | FC200   | -                | Grade 220   | -  | 0120               | Ft 20 D              | G 20             |
|   | 0.6025                 | GG25        | No 35 B     | FC250   | FG25             | Grade 260   | -  | 0125               | Ft 25 D              | G 25             |
|   | -                      | -           | No 40 B     | -       | -                | -           | -  | -                  | -                    | -                |
|   | 0.6030                 | GG30        | No 45 B     | FC300   | FG30             | Grade 300   | -  | 0130               | Ft 30D               | G 30             |
|   | 0.6035                 | GG35        | No 50 B     | FC350   | FG35             | Grade 350   | -  | 0135               | Ft 35 D              | G 35             |
|   | 0.6040                 | GG40        | No 55 B     | -       | -                | Grade 400   | -  | 0140               | Ft 40 D              | -                |
|   | 0.6660                 | GGL-NiCr202 | A436 Type 2 | -       | -                | L-NiCuCr202 | -  | 0523               | L-NC 202             | -                |
| <b>K</b><br>Nodular SG iron<br>Kugelgraphitguß SG | 0.7040                 | GGG 40      | 60-40-18    | FCD400  | FGE 38-17        | SNG 420/12  | -  | 0717-02            | FCS 400-12           | GS 370-17        |
|   | -                      | GGG 40.3    | -           | -       | -                | SNG 370/17  | -  | 0717-12            | FGS 370-17           | -                |
|   | 0.7033                 | GGG 35.3    | -           | -       | -                | -           | -  | 0717-15            | -                    | -                |
|   | 0.7050                 | GGG 50      | 80-55-06    | FCD500  | FGE 50-7         | SNG 500/7   | -  | 0727-02            | FGS 500-7            | GS 500           |
|   | 0.7660                 | GGG-NiCr202 | A43D2       | -       | -                | Grade S6    | -  | 0776               | S-NC 202             | -                |
|   | -                      | GGG 60      | -           | FCD600  | -                | SNG 600/3   | -  | 0732-03            | FGS 600-3            | -                |
|   | 0.7070                 | GGG 70      | 100-70-03   | FCD700  | FGS 70-2         | SNG 700/2   | -  | 0737-01            | FGS 700-2            | GS 700-2         |

**Reference list of materials (Non ferrous materials)**  
**Werkstoffliste (Nichteisen-Metalle)**

| ISO   | Germany<br>Deutschland |                | U.S.A     | Japan | Spain<br>Spanien | U.K. |    | Sweden<br>Schweden | France<br>Frankreich | Italy<br>Italien |
|---|------------------------|----------------|-----------|-------|------------------|------|----|--------------------|----------------------|------------------|
|   | W.-nr.                 | DIN            | AISI/SAE  | JIS   | UNE              | BS   | EN | SS                 | AFNOR                | UNI              |
| <b>N</b><br>Non ferrous materials<br>Nichteisen-Metalle | 3.2373                 | G-AISI9MGWA    | SC64D     | C4BS  | -                | -    | -  | 4251               | A-STG                | -                |
|   | -                      | G-ALMG5        | GD-AISI12 | AC4A  | -                | LM5  | -  | 4252               | A-SU12               | -                |
|   | -                      | -              | 356.1     | A5052 | -                | LM25 | -  | 4244               | -                    | -                |
|   | -                      | GD-AISI12      | A413.0    | A6061 | -                | -    | -  | 4247               | -                    | -                |
|   | -                      | GD-AISI8Cu3    | A380.1    | A7075 | -                | LM24 | -  | 4250               | -                    | -                |
|   | -                      | G-AISI12(Cu)   | A413.1    | ADC12 | -                | LM20 | -  | 4260               | -                    | -                |
|   | -                      | G-AISI12       | A413.2    | -     | -                | LM6  | -  | 4261               | -                    | -                |
|   | -                      | G-AISI10Mg(Cu) | A360.2    | -     | -                | LM9  | -  | 4253               | -                    | -                |



**Reference list of materials (Heat resistant super-alloys)**  
**Werkstoffliste (Hitzebeständige Super-Legierungen)**

| ISO  | Germany<br>Deutschland |                  | U.S.A      | Japan  | Spain<br>Spanien | U.K.         |    | Sweden<br>Schweden | France<br>Frankreich | Italy<br>Italien |
|--|------------------------|------------------|------------|--------|------------------|--------------|----|--------------------|----------------------|------------------|
|  | W.-nr.                 | DIN              | AISI/SAE   | JIS    | UNE              | BS           | EN | SS                 | AFNOR                | UNI              |
| <b>S</b><br>Heat resistant super-alloys<br>Hitzebeständige Super-Legierungen | 1.4864                 | X12NiCrSi36 16   | 330        | SUH330 | -                | -            | -  | -                  | Z12NCS35.16          | F-3313           |
|  | 1.4865                 | G-X40NiCrSi38 18 | -          | SCH15  | -                | 330C11       | -  | -                  | -                    | XG50NiCr39 19    |
|  | 2.4603                 | -                | 5390A      | -      | -                | -            | -  | -                  | NC22FeD              | -                |
|  | 2.4856                 | NiCr22Mo9Nb      | 5666       | -      | -                | -            | -  | -                  | NC22FeDNB            | -                |
|  | 2.4630                 | NiCr20Ti         | -          | -      | -                | HR5,203-4    | -  | -                  | NC20T                | -                |
|  | LW2.4662               | NiFe35Cr14MoTi   | 5660       | -      | -                | -            | -  | -                  | ZSNCDT42             | -                |
|  | LW2.4670               | S-NiCr13A16MoNb  | 5391       | -      | -                | 3146-3       | -  | -                  | NC12AD               | -                |
|  | LW2.4668               | NiCr19Fe19NbMo   | 5383       | -      | -                | HR8          | -  | -                  | NC19eNB              | -                |
|  | 2.4375                 | NiCu30Al         | 4676       | -      | -                | 3072-76      | -  | -                  | -                    | -                |
|  | 2.4631                 | NiCr20TiAk       | -          | -      | -                | Hr401,601    | -  | -                  | NC20TA               | -                |
|  | 2.4973                 | NiCr19Co11MoTi   | AMS 5399   | -      | -                | -            | -  | -                  | NC19KDT              | -                |
|  | LW2.4668               | NiCr19Fe19NbMo   | AMS 5544   | -      | -                | -            | -  | -                  | NC20K14              | -                |
|  | LW2.4674               | NiCo15Cr10MoAlTi | AMS 5397   | -      | -                | -            | -  | -                  | -                    | -                |
|  | LW2.4964               | CoCr20W15Ni      | 5537C      | -      | -                | -            | -  | -                  | KC20WN               | -                |
|  | -                      | CoCr22W14Ni      | AMS 5772   | -      | -                | -            | -  | -                  | KC22WN               | -                |
| <b>S</b><br>Titanium alloys<br>Titanium-Legierungen                          | -                      | TiAl5Sn2.5       | AMS R54520 | -      | -                | TA14/17      | -  | -                  | T-A5E                | -                |
|  | -                      | TiAl6V4          | AMS R56400 | -      | -                | TA10-13/TA28 | -  | -                  | T-A6V                | -                |
|  | -                      | TiAl6V4ELI       | AMS R56401 | -      | -                | TA11         | -  | -                  | -                    | -                |
|  | -                      | TiAl4MoSn4Si0.5  | -          | -      | -                | -            | -  | -                  | -                    | -                |

**Reference list of materials (Hardened materials)**  
**Werkstoffliste (Gehärtete Materialien)**

| ISO   | Germany<br>Deutschland |             | U.S.A    | Japan | Spain<br>Spanien | U.K. |    | Sweden<br>Schweden | France<br>Frankreich | Italy<br>Italien |
|---|------------------------|-------------|----------|-------|------------------|------|----|--------------------|----------------------|------------------|
|   | W.-nr.                 | DIN         | AISI/SAE | JIS   | UNE              | BS   | EN | SS                 | AFNOR                | UNI              |
| <b>H</b><br>Hardened materials<br>Gehärtete Materialien | 1.4108                 | X100CrMo13  | 440A     | C4BS  | -                | -    | -  | -                  | -                    | -                |
|   | 1.4111                 | X110CrMoV15 | 610      | AC4A  | -                | -    | -  | -                  | -                    | -                |
|   | -                      | X65CrMo14   | 0-2      | AC4A  | -                | -    | -  | -                  | -                    | -                |
|   |                        |             |          |       |                  |      |    |                    |                      |                  |
|   |                        |             |          |       |                  |      |    |                    |                      |                  |
|   |                        |             |          |       |                  |      |    |                    |                      |                  |
|   |                        |             |          |       |                  |      |    |                    |                      |                  |
|   |                        |             |          |       |                  |      |    |                    |                      |                  |
|   |                        |             |          |       |                  |      |    |                    |                      |                  |

**Turning inserts**  
**Drehwendeschneidplatten**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| ADMT-R           | A30          |
| CCGT-AL          | A30          |
| CCGT-AP          | A31          |
| CCMT             | A31          |
| CCMW             | A31          |
| CNGP             | A32          |
| CNMA             | A32          |
| CNMG-CC          | A32          |
| CNMG-FC          | A32          |
| CNMG-FMC         | A32          |
| CNMG-KC          | A33          |
| CNMG-MC          | A33          |
| CNMG-MFC         | A33          |
| CNMG-MHC         | A33          |
| CNMG-RC          | A33          |
| CNMG-TC          | A34          |
| CNMM             | A34          |
| DCGT-AL          | A35          |
| DCGT-AP          | A35          |
| DCMT             | A35          |
| DCMW             | A35          |
| DNGP             | A36          |
| DNMA             | A36          |
| DNMG-FC          | A36          |
| DNMG-FMC         | A36          |
| DNMG-KC          | A36          |
| DNMG-MC          | A37          |
| DNMG-MFC         | A37          |
| DNMG-MHC         | A37          |
| DNMG-TC          | A37          |
| DNMX             | A37          |
| KNUX             | A38          |
| RCGT-AL          | A38          |
| RCGT-AP          | A38          |
| RCMT             | A39          |
| RNMG             | A39          |
| SCGT-AL          | A40          |
| SCMT             | A40          |
| SCMT-39          | A40          |
| SCMW             | A40          |
| SNMG-FMC         | A41          |
| SNMG-KC          | A41          |
| SNMG-MHC         | A41          |
| SNMG-RC          | A41          |
| SNMG-TC          | A42          |
| SNMM             | A42          |
| SPMR             | A43          |
| SPUN             | A43          |
| TCGT-AL          | A44          |
| TCMT             | A44          |
| TCMW             | A44          |
| TNMA             | A45          |
| TNMG-CC          | A45          |
| TNMG-FC          | A45          |

**Turning inserts**  
**Drehwendeschneidplatten**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| TNMG-FMC         | A45          |
| TNMG-KC          | A45          |
| TNMG-MC          | A46          |
| TNMG-MFC         | A46          |
| TNMG-MHC         | A46          |
| TNMG-TC          | A46          |
| TNMX             | A46          |
| TPMN             | A47          |
| TPMR             | A47          |
| TPUN             | A47          |
| TPUX             | A47          |
| VBMT             | A48          |
| VCGT-AL          | A48          |
| VCGT-AP          | A48          |
| VCMT             | A48          |
| VNGP             | A49          |
| VNMG             | A49          |
| VNMG-TC          | A49          |
| WNMA             | A50          |
| WNMG-FC          | A50          |
| WNMG-FMC         | A50          |
| WNMG-KC          | A50          |
| WNMG-MC          | A50          |
| WNMG-MFC         | A51          |
| WNMG-MHC         | A51          |
| WNMG-TC          | A51          |

**Ceramic inserts**  
**Keramik-Wendepplatten**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| CNGA             | A54          |
| CNGN             | A54          |
| CNGX             | A54          |
| DNGA             | A54          |
| DNGN             | A54          |
| DNGX             | A55          |
| GWG              | A55          |
| RCGX             | A55          |
| RNGN             | A55          |
| RPGN             | A56          |
| SNGA             | A56          |
| SNGN             | A56          |
| SNGX             | A57          |
| TNGA             | A57          |
| TNGN             | A57          |
| VNGA             | A57          |
| WNGA             | A58          |

**CBN/PCD inserts**  
**CBN/PCD Wendeschneidplatten**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| CCMW             | A59          |
| CNGA             | A59          |
| DCMW             | A59          |
| DNGA             | A59          |
| SNGA             | A59          |
| TCMW             | A60          |
| TNGA             | A60          |
| TPMN             | A60          |

**Inserts for parting and grooving**  
**Ab- und Einstechwendepplatten**

| Reference / Bez.               | Page / Seite |
|--------------------------------|--------------|
| GIGP                           | B06          |
| GIGW                           | B06          |
| GISG                           | B06          |
| GIST                           | B06          |
| LS/RS <small>Microturn</small> | B11-15       |
| MRCN                           | B08          |
| NG                             | B09          |
| NR                             | B10          |
| NT                             | B10          |
| PTNT                           | B08          |
| WDMG                           | B07          |
| WDMP                           | B07          |
| WDMR                           | B07          |
| WDMT                           | B07          |

**Threading inserts**  
**WSP zum Gewindedrehen**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| EL-60°/55°       | C03          |
| EL-ISO           | C05          |
| EL-LG            | C10          |
| EL-W             | C08          |
| ER-60°/55°       | C03          |
| ER-60°/55° TD    | C03          |
| ER-ISO           | C05          |
| ER-LG            | C10          |
| ER-W             | C08          |
| NL-60°/55        | C04          |
| NL-ISO           | C07          |
| NL-W             | C10          |
| NR-60°/55°       | C04          |
| NR-60°/55° TD    | C04          |
| NR-ISO           | C06          |
| NR-W             | C09          |
| TNMC             | C10          |
| TPMC             | C10          |



**Toolholders  
Klemmhalter**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| CKJN 93°         | A114         |
| CKNN 63°         | A115         |
| CSBP 75°         | A116         |
| CSDP 45°         | A117         |
| CSKP 75°         | A118         |
| CSSP 45°         | A119         |
| CSTP 60°         | A120         |
| CTBP 75°         | A121         |
| CTCPN 90°        | A122         |
| CTCP 90°         | A123         |
| CTDP 45°         | A124         |
| CTFP 90°         | A125         |
| CTGP 90°         | A126         |
| CTTP 60°         | A127         |
| DCLN 95°-A       | A69          |
| DCLN 95°-N       | A68          |
| DDJN 93°-A       | A71          |
| DDJN 93°-N       | A70          |
| DSSN 45°-A       | A73          |
| DSSN 45°-N       | A72          |
| DTGN 90°-N       | A74          |
| DTJN 93°-A       | A75          |
| DVJN 93°-A       | A77          |
| DVJN 93°-N       | A76          |
| DWLN 95°-A       | A79          |
| DWLN 95°-N       | A78          |
| MCLN 95°         | A80          |
| MCLN-K 95°       | A81          |
| MDJN-K 93°       | A82          |
| MSSN 45°         | A84          |
| MSSN-K 45°       | A83          |
| MTEN 60°         | A85          |
| MTJN 93°         | A86          |
| MTJN-K 93°       | A87          |
| MTNN 63°         | A88          |
| MVJN-K 93°       | A89          |
| MVQN-K 117°30'   | A90          |
| MVVN-K 72°30'    | A91          |
| MWLN 95°         | A92          |
| MWLN-K 95°       | A93          |
| PCBN 75°         | A94          |
| PCFN 90°         | A95          |
| PCKN 75°         | A96          |
| PCLN 95°         | A97          |
| PCMN 50°         | A98          |
| PCSN 45°         | A99          |
| PDJN 93°         | A100         |
| PDNN 63°         | A101         |
| PRDC             | A102         |
| PRSC             | A103         |
| PRSN             | A104         |
| PSBN 75°         | A105         |
| PSDN 45°         | A106         |
| PSKN 75°         | A107         |

**Toolholders  
Klemmhalter**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| PSSN 45°         | A108         |
| PTDN 90°         | A109         |
| PTFN 90°         | A110         |
| PTGN 90°         | A111         |
| PTTN 60°         | A112         |
| PWLN 95°         | A113         |
| SAGD 90°         | A129         |
| SCAC 90°         | A130-131     |
| SCLC 95°         | A132,134     |
| SCLC 95°-A       | A133         |
| SDAC 90°         | A135         |
| SDHC 107,5°      | A136         |
| SDJC 93°         | A137,139     |
| SDJC 93°-A       | A138         |
| SDNC 62°30'      | A140-141     |
| SRDC             | A142         |
| SSBC 75°         | A143         |
| SSDC 45°         | A144         |
| SSSC 45°         | A145         |
| STAC 90°         | A146         |
| STDC 45°         | A147         |
| STFC 90°         | A148         |
| STGC 90°         | A149         |
| STHE             | A128         |
| STJC 93°         | A150-151     |
| STTC 60°         | A152         |
| STXC 10°-80°     | A153         |
| SVAC 90°         | A154         |
| SVHC 107°30'     | A155         |
| SVJB 93°         | A156         |
| SVJC 93°         | A157,159     |
| SVJC 93°-A       | A158         |
| SVLC 95°         | A160         |
| SVVB 72°30'      | A161         |
| SVVC 72°30'      | A162-163     |
| SVXC 113°        | A164         |
| SVZC 100°        | A165         |

**Boring bars  
Bohrstangen**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| A-PCLN 95°       | A189         |
| A-PDUN 93°       | A191         |
| A-PSKN 75°       | A194         |
| A-PSSN 45°       | A195         |
| A-PTFN 90°       | A197         |
| A-PWLN 95°       | A199         |
| A-SCLC 95°       | A208         |
| A-SDQC 107°30'   | A214         |
| A-SDUC 93°       | A218         |
| A-SDUC 93°-EX    | A222         |
| A-SSSC 45°       | A224         |
| A-STFC 90°       | A226         |
| A-SVJC 93°       | A230         |

**Boring bars  
Bohrstangen**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| A-SVQC 107°30'   | A233         |
| A-SVUC 93°       | A236         |
| A..X-MTUN 93°-N  | A238         |
| A..X-PCLN 95°-N  | A239         |
| A..X-PDUN 93°-N  | A240         |
| A..X-PWLN 95°-N  | A241         |
| A..X-SCLC 95°-N  | A242         |
| A..X-SDUC 93°-N  | A243         |
| A..X-STFC 90°-N  | A244         |
| A..X-STXN 90°-N  | A245         |
| CKUN 93°         | A200         |
| CSKP 75°         | A201         |
| CTFP 90°         | A202         |
| CTUP 93°         | A203         |
| DCLN 95°-N       | A176         |
| DDUN 93°-N       | A177         |
| E-SCLC 95°       | A210         |
| E-SDQC 107°30'   | A216         |
| E-SDUC 93°       | A220         |
| E-STFC 90°       | A228         |
| J.. / J..-A..    | A237,246     |
| MCLN-K 95°       | A178         |
| MDUN-K 93°       | A179         |
| MSKN-K 75°       | A180         |
| MTFN 90°         | A181         |
| MTFN-K 90°       | A182         |
| MTUN 93°         | A183         |
| MVUN-K 93°       | A184         |
| MWLN 95°         | A185         |
| MWLN-K 95°       | A186         |
| PCKN 75°         | A187         |
| PCLN 95°         | A188         |
| PDUN 93°         | A190         |
| PDUN 93°-EX      | A192         |
| PSKN 75°         | A193         |
| PTFN 90°         | A196         |
| PWLN 95°         | A198         |
| SCLC 95°         | A207         |
| SCLCN 95°        | A212         |
| SDQC 107°30'     | A213         |
| SDUC 93°         | A217         |
| SDUC 93°-EX      | A221         |
| SET SCLC 95°     | A209         |
| SET SDQC 107°30' | A215         |
| SET SDUC 93°     | A219         |
| SET STFC 90°     | A227         |
| SSKC 75°         | A223         |
| STFC 90°         | A225         |
| STUC 93°         | A229         |
| SVQC 107°30'     | A232         |
| SVUB 93°         | A234         |
| SVUC 93°         | A235         |
| 00.30            | A204         |
| 608.00           | A206         |

**Cartridges**  
**Kurzklemmhalter**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| CSKP 75°         | A259         |
| CSSP 45°         | A259         |
| CTFP 90°         | A260         |
| CTGP 90°         | A260         |
| CTSP 45°         | A261         |
| CTTP 60°         | A261         |
| CTWP 30°         | A262         |
| PCFN 90°         | A254         |
| PCLN 95°         | A254         |
| PSKN 75°         | A255         |
| PSRN 75°         | A255         |
| PSSN 45°         | A256         |
| PTFN 90°         | A256         |
| PTGN 90°         | A257         |
| PTSN 45°         | A257         |
| PTTN 60°         | A258         |
| PTWN 30°         | A258         |
| SCFC 90°         | A263         |
| SCLC 95°         | A263         |
| SSKC 75°         | A264         |
| SSSC 45°         | A264         |
| STFC 90°         | A265         |
| STGC 90°         | A265         |
| STSC 45°         | A266         |
| STTC 60°         | A266         |
| STWC 60°         | A267         |

**Brazed tools**  
**HM-Gelötete Werkzeuge**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| ISO 2 45°        | A272         |
| ISO 6 90°        | A272         |
| ISO 7 90°        | A273         |
| ISO 9 90°        | A275         |
| ISO 351 80°      | A273         |
| UI 30 60°        | A274         |
| UI 40 60°        | A275         |
| UI 50 90°        | A276         |

**Parting and grooving**  
**Ab- und Einstechdrehen**

| Reference / Bez.   | Page / Seite |
|--|--------------|
| CPTS   | B48          |
| CRCFN  | B49          |
| CZCB   | B41          |
| CZCD   | B21          |
| CZDP   | B20          |
| CZDPN  | B48          |
| CZFD   | B25          |
| CZFD <small>Modular blades<br/>Modulare Stechschwerter</small> | B23-24       |
| CZGB   | B47          |
| CZGD   | B22          |
| DPTS   | B48          |

**Parting and grooving**  
**Ab- und Einstechdrehen**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| NE 93°           | B52          |
| NNTO 93°         | B55          |
| NR 45°           | B53          |
| NS 93°           | B54          |
| STHE             | B18          |
| XLCF             | B43          |
| XLCFN            | B49          |
| XLCTN            | B50          |
| XLCTN-HSS        | B51          |
| 608.00           | B44          |

**Threading**  
**Gewindedrehen**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| CTAN 90°         | C12          |
| CTXN 90°         | C13          |
| STAN 90°         | C14          |
| STCN 90°         | C16          |
| STXN 90°         | C15          |
| S.. CTXN 90°     | C17          |
| S.. STGN 90°     | C19          |
| S.. STGP 90°     | C20          |
| S.. STXN 90°     | C18          |

**Ceramic milling cutters**  
**Fräser für Keramik-WSP**

| Reference / Bez.      | Page / Seite |
|-----------------------|--------------|
| 1242.90 88°           | D10          |
| 1442.90 75°           | D11          |
| 5540.90               | D12          |
| 55 <sup>2</sup> 40.06 | D13          |
| 5542.90               | D14          |

**Ceramic tools**  
**Werkzeuge für Keramik-WSP**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| CCBN 75°         | D16          |
| CCKN 75°         | D17          |
| CCLN 95°         | D18          |
| CDJN 93°         | D19          |
| CELN 97°30'      | D20          |
| CRDC             | D21          |
| CRDN             | D22          |
| CRSN             | D23          |
| CSDN 45°         | D24          |
| CSKN 75°         | D25          |
| CSRN 75°         | D26          |
| CSSN 45°         | D27          |
| CSXN 85°         | D28          |
| CSYN 85°         | D29          |
| CTFN 90°         | D30          |

**Ceramic tools**  
**Werkzeuge für Keramik-WSP**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| CTGN 90°         | D31          |
| CVJN 93°         | D32          |
| CVVN 62°30'      | D33          |
| S.. CCLN 95°     | D34          |
| S.. CDQN 107°30' | D35          |
| S.. CDUN 93°     | D36          |
| S.. CELN 97°30'  | D37          |
| S.. CSKN 75°     | D38          |
| S.. CSSN 45°     | D39          |
| S.. CSYN 85°     | D40          |

**PSC Ceramic**  
**PSC Keramikhalter**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| CCKN 75°         | D42          |
| CCLN 95°         | D43          |
| CCRN 75°         | D44          |
| CDHN 107°30'     | D45          |
| CDJN 93°         | D46          |
| CDNN 63°         | D47          |
| CDUN 93°         | D48          |
| CRSN             | D49          |
| CSDN 45°         | D50          |
| CSKN 75°         | D51          |
| CSRN 75°         | D52          |
| CSSN 45°         | D53          |

**PSC Toolholders**  
**PSC Klemmhalter**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| DCKN 75°         | E06          |
| DCLN 95°         | E07          |
| DCMN 50°         | E08          |
| DCRN 75°         | E09          |
| DDHN 107°30'     | E10          |
| DDJN 93°         | E11          |
| DDMN 48°         | E12          |
| DDNN 63°         | E13          |
| DDUN 93°         | E14          |
| DRSN             | E15          |
| DSDN 45°         | E16          |
| DSKN 75°         | E17          |
| DSRN 75°         | E18          |
| DSSN 45°         | E19          |
| DTFN 90°         | E20          |
| DTGN 90°         | E21          |
| DVJN 93°         | E22          |
| DVVN 72°30'      | E23          |
| DWLN 95°         | E24          |
| MCKN 75°         | E25          |
| MCLN 95°         | E26          |
| MCRN 75°         | E27          |
| MDJN 93°         | E28          |
| MDNN 63°         | E29          |
| MDUN 93°         | E30          |
| MSDN 45°         | E31          |
| MSKN 75°         | E32          |
| MSRN 75°         | E33          |
| MSSN 45°         | E34          |
| MTFN 90°         | E35          |
| MTGN 90°         | E36          |
| MTJN 93°         | E37          |
| MVJN 93°         | E38          |
| MVVN 72°30'      | E39          |
| MWLN 95°         | E40          |
| PCLN 95°         | E41          |
| PCRN 75°         | E42          |
| PDJN 93°         | E43          |
| PDUN 93°         | E44          |
| PRDC             | E45          |
| PRSC             | E46          |
| PSDN 45°         | E47          |
| PSKN 75°         | E48          |
| PSRN 75°         | E49          |
| PSSN 45°         | E50          |
| SCLC 95°         | E51          |
| SDJC 93°         | E52          |
| SDNC 62°30'      | E53          |
| SRDC             | E54          |
| SRSC 45°         | E55          |
| SSRC 75°         | E56          |
| STGC 90°         | E57          |
| STJC 93°         | E58          |
| SVHB 107°30'     | E59          |

**PSC Toolholders**  
**PSC Klemmhalter**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| SVHC 107°30'     | E60          |
| SVJB 93°         | E61          |
| SJVC 93°         | E62          |
| SVMB 50°         | E63          |
| SVVB 72°30'      | E64          |
| SVVC 72°30'      | E65          |

**PSC Adaptor**  
**PSC Adapter**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| J..              | E66          |

**PSC Boring bars**  
**PSC Bohrstangen**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| DCLN 95°         | E67          |
| DDUN 93°         | E68          |
| DWLN 95°         | E69          |
| MTFN 90°         | E70          |
| MVUN 93°         | E71          |
| MWLN 95°         | E72          |
| PCLN 95°         | E73          |
| PDUN 93°         | E74          |
| PSKN 75°         | E75          |
| SCLC 95°         | E76          |
| SDUC 93°         | E77          |
| SDUC-X 93°       | E78          |
| SSKC 75°         | E79          |
| STFC 90°         | E80          |
| SVQB 107°30'     | E81          |
| SVQC 107°30'     | E82          |

**PSC Threading**  
**PSC Gewindedrehen**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| SE 90°           | A83          |
| SI 90°           | A84          |

**PSC Parting and grooving**  
**PSC Ab- und Einstechdrehen**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| CZCD             | E85          |
| CZFD             | E86          |
| CZGD             | E87          |
| NE 93°           | E88          |
| NNT0 93°         | E91          |
| NR 45°           | E89          |
| NS 93°           | E90          |

**PSC Drills**  
**PSC Bohrer**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| 45..             | E92-94       |

**PSC Arbors and adaptors**  
**PSC Aufnahmen**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| 13.218           | E119         |
| 16.218           | E120         |
| 18.160           | E100         |
| 18.180           | E101         |
| 18.215           | E102         |
| 18.218           | E121-122     |
| 18.296           | E103         |
| 18.306           | E104         |
| 18.315           | E105         |
| 18.400           | E106         |
| 18.406           | E107         |
| 18.453           | E108         |
| 18.455           | E109         |
| 18.470           | E110         |
| 18.500           | E111         |
| 18.510           | E112         |
| 18.520           | E113         |
| 18.530           | E114         |
| 18.540           | E115         |
| 18.550           | E116         |
| 18.620           | E117         |
| 18.700           | E124         |
| 18.999           | E118         |
| 23.218           | E123         |
| AC               | E125         |
| MC               | E125         |

**Milling inserts  
Fräswendeschneidplatten**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| ADKT             | F10          |
| ADMT             | F10          |
| ADMT-R           | F10          |
| ADMW             | F10          |
| ADMW-C           | F10          |
| APHT-AL          | F11          |
| APKT             | F11          |
| APLT             | F11          |
| APMT             | F11          |
| APMW             | F11          |
| CCGT-AL          | F12          |
| CCMT             | F12          |
| CCMW             | F12          |
| ENHQ             | F13          |
| FRC              | F13          |
| FRCR             | F13          |
| HPKW             | F14          |
| HPR              | F14          |
| LNMM             | F14          |
| NNMU             | F15          |
| ODMT             | F15          |
| ODMW             | F15          |
| RDHW             | F15          |
| RDMT             | F16          |
| RDMW             | F16          |
| RPMT             | F16          |
| RPMW             | F16          |
| RPR              | F16          |
| SCGT-AL          | F17          |
| SCMT-39          | F17          |
| SCMW             | F17          |
| SDMT             | F17          |
| SEHT             | F17          |
| SEHT-AL          | F17          |
| SEHW             | F17          |
| SEKN             | F18          |
| SEKR             | F18          |
| SEMT             | F18          |
| SNHX             | F18          |
| SNMX             | F19          |
| SNUN             | F19          |
| SPKN             | F19          |
| SPKR             | F19          |
| SPMT             | F19          |
| SPMT             | F20          |
| SPMW             | F20          |
| SPMX             | F20          |
| SPUN             | F20          |
| TCGT-AL          | F21          |
| TCMT-39          | F21          |
| TCMW             | F21          |
| TCMX             | F21          |
| TPKN             | F21          |
| TPKR             | F21          |

**Milling inserts  
Fräswendeschneidplatten**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| TPUN             | F22          |
| VCGT-AL          | F22          |
| VCGT-AP          | F22          |

  

| <b>Face and chamfering<br/>Plan- und Anfasfräser</b> |              |
|--|--------------|
| Reference / Bez.                                     | Page / Seite |
| 0440.90 75°  | F42          |
| 0440.99 75°  | F43          |
| 0624.07 45°  | F50          |
| 0630.00 45°  | F53          |
| 0630.07 45°  | F53          |
| 0630.30 45°  | F54          |
| 0634.37 45°  | F51          |
| 0640.90 45°  | F41          |
| 0724.07 60°  | F50          |
| 0735.03 45°  | F46          |
| 0740.00 45°  | F47          |
| 0740.07 45°  | F47          |
| 0740.30 45°  | F48          |
| 0744.90 45°  | F31          |
| 0748.90 45°  | F38          |
| 0748.99 45°  | F39          |
| 0758.99 45°  | F40          |
| 1235.01  | F55          |
| 1235.07  | F56          |
| 1345.06  | F59          |
| 1345.07  | F58          |
| 1430.90 75°  | F37          |
| 16 $\frac{2}{3}$ 4. $\frac{0}{2}$ 7                  | F52          |
| 1725. $\frac{0}{2}$ 7                                | F57          |
| 1742.93 45°  | F26          |
| 1742.99 45°  | F27          |
| 1744. $\frac{0}{2}$ 7                                | F49          |
| 1745.93 15°-75°                                      | F44-45       |
| 1748.07 45°  | F30          |
| 1748.93 45°  | F28          |
| 1748.99 45°  | F29          |
| 1845.93 42°  | F32          |
| 1845.99 42°  | F33          |
| 1852.93 45°  | F36          |
| 1855.93 42°  | F34          |
| 1855.99 42°  | F35          |

**Facing square shoulder cutters  
Eckfräser**

| Reference / Bez.          | Page / Seite |
|---------------------------|--------------|
| 0120.00 90°               | F90          |
| 0130.00 90°               | F91          |
| 0130.30 90°               | F91          |
| 0130.90 90°               | F92          |
| 0130.99 90°               | F93          |
| 0140.90 90°               | F94          |
| 0140.99 90°               | F95          |
| 0235.03 90°               | F84          |
| 0235.06 90°               | F84          |
| 0235.93 90°               | F85          |
| 0255.93 90°               | F86          |
| 0255.99 90°               | F87          |
| 1135.01                   | F88          |
| 1220.02 90°               | F73          |
| 1220.03 90°               | F72          |
| 1220.06 90°               | F75          |
| 1220.07 90°               | F74          |
| 1220.93 90°               | F76          |
| 1222.06                   | F66          |
| 1222.37                   | F66          |
| 1222.93                   | F67          |
| 1230.02 90°               | F78          |
| 1230.06 90°               | F79          |
| 1230.07 90°               | F77          |
| 1230.93 90°               | F81          |
| 1230.99 90°               | F82          |
| 1232.06                   | F69          |
| 1232.37                   | F68          |
| 1232.93 90°               | F70          |
| 1232.99 90°               | F71          |
| 1245.93 90°               | F83          |
| 22 $\frac{2}{3}$ 0.07 90° | F80          |
| 3314.0 $\frac{0}{1}$      | F89          |
| 3314.06                   | F89          |

**Slot cutters  
Nutenfräser**

| Reference / Bez.                    | Page / Seite |
|-------------------------------------|--------------|
| 13 $\frac{1}{4}$ 4.07               | F104         |
| 13 $\frac{1}{4}$ 4. $\frac{30}{34}$ | F105         |
| 1520.90                             | F110         |
| 1530.90                             | F111         |
| 1549.90                             | F112         |
| 1942.90                             | F109         |
| 2942.07                             | F108         |
| 2942.90                             | F107         |
| 3942.95                             | F106         |
| M                                   | F113         |
| MN                                  | F113         |

**Profile milling**  
**Profilfräsen**

| Reference / Bez.      | Page / Seite |
|-----------------------|--------------|
| 0344.06               | F136         |
| 0344.90               | F137         |
| 16 $\frac{2}{4}$ 9.03 | F120         |
| 16 $\frac{2}{4}$ 9.06 | F121         |
| 1639.93               | F122         |
| 1649.93               | F123         |
| 55_5                  | F128         |
| 55_5.06               | F129         |
| 55 $\frac{4}{5}$ 5.93 | F130         |
| 5549.90               | F131         |
| 85_0                  | F139         |
| 85_3                  | F140         |
| 85_06                 | F141         |
| 88_0                  | F142         |
| 88_3                  | F143         |
| 88_06                 | F144         |

**Porcupine cutters**  
**Igelfräser**

| Reference / Bez.      | Page / Seite |
|-----------------------|--------------|
| 23 $\frac{2}{3}$ 0.07 | F150         |
| 2330. $\frac{47}{48}$ | F151         |
| 2330. $\frac{49}{50}$ | F152         |

**Solid carbide**  
**Vollhartmetall**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| 6020             | G50          |
| 6021             | G52          |
| 6022             | G26          |
| 6023             | G28-29       |
| 6030             | G54          |
| 6031             | G57          |
| 6040             | G60          |
| 6041             | G62          |
| 6043             | G30-31       |
| 6054             | G17          |
| 6064             | G20          |
| 6143             | G32          |
| 6164             | G23          |
| 6230             | G10          |
| 6240             | G13          |
| 6243             | G32          |
| 6320             | G64          |
| 6321             | G66          |
| 6322             | G36          |
| 6323             | G38          |
| 6324             | G40          |
| 6325             | G41          |
| 6342             | G34          |
| 6343             | G34          |
| 6440             | G15          |
| 6510             | G44          |

**Solid carbide**  
**Vollhartmetall**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| 6520             | G46          |
| 6530             | G47          |
| 6610             | G45          |
| 6640             | G48          |
| 7320             | G73-75       |
| 7323             | G81-83       |
| 7520             | G77-79       |
| 7523             | G85-87       |
| 84               | G68          |
| 86               | G69          |
| 87               | G70          |
| 88               | G71          |
| 900              | G89          |
| 901              | G89          |
| 910              | G89          |
| 911              | G89          |
| 920              | G90          |
| 921              | G90          |
| 930              | G90          |
| 931              | G90          |
| 940              | G91          |
| 941              | G91          |
| 950              | G91          |
| 951              | G91          |
| 960              | G92          |
| 961              | G92          |
| 970              | G92          |
| 971              | G92          |
| 98               | G93          |
| 99               | G93          |

**Drills**  
**Bohrer**

| Reference / Bez.                    | Page / Seite |
|-------------------------------------|--------------|
| 02 $\frac{1}{3}$ 4.00               | H09          |
| 42..                                | H06          |
| 42 $\frac{1}{4}$ 4. $\frac{72}{75}$ | H07          |
| 45..                                | H05          |
| 4744.64                             | H08          |
| 9614.61                             | H10          |
| 9624.61                             | H11          |

**DIN 2080**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| 10.160           | 105          |
| 10.165           | 106          |
| 10.180           | 107          |
| 10.210           | 108          |
| 10.215           | 109          |
| 10.216           | 110          |
| 10.220           | 111          |
| 10.225           | 112          |
| 10.290           | 113          |
| 10.295           | 114          |
| 10.296           | 115          |
| 10.300           | 116          |
| 10.302           | 117          |
| 10.353           | 118          |
| 10.453           | 119          |
| 10.457           | 120          |
| 10.470           | 121          |
| 10.610           | 122          |
| 10.620           | 123          |
| 10.630           | 124          |

**DIN 69871-A**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| 11.160           | 132          |
| 11.165           | 138          |
| 11.180           | 139          |
| 11.210           | 140          |
| 11.215           | 142          |
| 11.216           | 144          |
| 11.225           | 145          |
| 11.226           | 146          |
| 11.290           | 147          |
| 11.295           | 148          |
| 11.296           | 149          |
| 11.300           | 151          |
| 11.302           | 153          |
| 11.305           | 155          |
| 11.353           | 161          |
| 11.400           | 162          |
| 11.453           | 164          |
| 11.455           | 166          |
| 11.457           | 167          |
| 11.470           | 169          |
| 11.512           | 170          |
| 11.610           | 171          |
| 11.620           | 173          |
| 11.630           | 174          |
| 11.999           | 175          |
| 13.160           | 133          |
| 13.210           | 141          |
| 13.215           | 143          |
| 13.296           | 150          |

**DIN 69871-A**

| Reference / Bez. | Page / Seite                               |
|------------------|--|
| 13.300           | 152  |
| 13.302           | 154  |
| 13.306           | 156-57                                     |
| 13.307           | 158  |
| 13.315           | 159  |
| 13.453           | 165  |
| 13.457           | 168  |
| 13.610           | 172  |
| A11.160          | <i>Cylindrical / Zylindrische Form</i> 136 |
| A11.160          | <i>Conical / Konische Form</i> 137         |
| A11.160IK        | <i>Cylindrical / Zylindrische Form</i> 135 |
| A11.315          | 160  |
| A11.315IK        | 160  |
| SET-C20/32       | 163  |

**HSK DIN 69893-1**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| 16.160           | 181          |
| 16.180           | 184          |
| 16.210           | 185          |
| 16.215           | 186          |
| 16.296           | 187          |
| 16.300           | 188-89       |
| 16.305           | 190          |
| 16.315           | 192          |
| 16.453           | 193          |
| 16.455           | 194          |
| 16.470           | 195          |
| 16.999           | 196          |
| A16.160          | 183          |
| A16.160IK        | 182          |
| A16.315IK        | 191          |

**JIS B 6339-BT**

| Reference / Bez. | Page / Seite                                |
|------------------|---|
| 20.160           | 1104  |
| 20.165           | 1108  |
| 20.180           | 1109  |
| 20.210           | 1110  |
| 20.215           | 1112  |
| 20.216           | 1114  |
| 20.225           | 1115  |
| 20.226           | 1116  |
| 20.290           | 1117  |
| 20.295           | 1118  |
| 20.296           | 1119  |
| 20.300           | 1121  |
| 20.302           | 1123  |
| 20.305           | 1125  |
| 20.353           | 1131  |
| 20.400           | 1132  |
| 20.453           | 1134  |
| 20.455           | 1136  |
| 20.457           | 1137  |
| 20.470           | 1139  |
| 20.512           | 1140  |
| 20.610           | 1141  |
| 20.620           | 1143  |
| 20.630           | 1144  |
| 20.999           | 1145  |
| 23.160           | 1105  |
| 23.210           | 1111  |
| 23.215           | 1113  |
| 23.296           | 1120  |
| 23.300           | 1122  |
| 23.302           | 1124  |
| 23.306           | 1126-127                                    |
| 23.307           | 1128  |
| 23.315           | 1129  |
| 23.453           | 1135  |
| 23.457           | 1138  |
| 23.610           | 1142  |
| A20.160          | <i>Cylindrical / Zylindrische Form</i> 1106 |
| A20.160          | <i>Conical / Konische Form</i> 1107         |
| A20.315          | 1130  |
| SET-C20/32       | 1133  |

**Boring Heads**  
**Bohrköpfe**

| Reference / Bez.                    | Page / Seite |
|-------------------------------------|--------------|
| 10.700                              | I164         |
| 11.700                              | I165         |
| 16.700                              | I166         |
| 18.700                              | I167         |
| 20.700                              | I168         |
| 60.12/24                            | I170         |
| 60.62/64                            | I169         |
| 6114. <sup>0</sup> / <sub>2</sub> 7 | I154         |
| 63.12/28                            | I158         |
| 63.36/60                            | I159         |
| 64.12/28                            | I160         |
| 64.36/60                            | I161         |
| 66.20/28                            | I162         |
| 66.36/60                            | I163         |
| 97.15/24                            | I155         |
| SCLC                                | I156         |
| SET-97                              | I171         |
| STFC                                | I157         |

**Cylindrical shanks**  
**Zylindrische Schäfte**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| 40.295           | I176         |
| 40.315           | I178         |
| 40.315E          | I179         |
| 40.453           | I180         |
| 40.455           | I181         |
| 42.300           | I182         |
| 42.610           | I183         |
| 42.620           | I184         |
| 43.296           | I177         |

**Morse shanks**  
**Morse Schäfte**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| 36.453           | I189         |
| 37.215           | I190         |
| 37.290           | I191         |
| 37.295           | I192         |
| 37.296           | I193         |

**Accessories**  
**Zubehör**

| Reference / Bez. | Page / Seite |
|------------------|--------------|
| 02_70/80         | I228         |
| 02_71/81         | I228         |
| 431XX            | I220         |
| 433XX            | I220         |
| 451XX            | I221         |
| 453XX            | I221         |
| 455XX            | I222         |
| 456XX            | I222         |
| 457XX            | I222         |
| 50XX             | I219         |
| 71..30XX         | I202         |
| 75..70XX         | I203         |
| 9..              | 227          |
| 91..             | I223-225     |
| 92..             | I226         |
| BXX              | I206-208     |
| ERXX             | I210-212     |
| ERBXX            | I214         |
| ERCXX            | I215-216     |
| ERTXX            | I217-218     |
| MK               | I201         |
| MP               | I200         |
| MU               | I199         |
| RC               | I198         |
| RN               | I198         |
| SET-ER           | I213         |



## **EINES CANELA, S.A.**

### **Conditions of sale**

All sales are made in accordance with our standard conditions of sale, current at the time orders are accepted. Specifications and prices subject to change without notice.

### **Product warranty**

Eines Canela will repair or replace any of its products, which in its judgement, are found to be defective in material or workmanship. All claims must be made in writing within thirty days after receipt of product. No claims for labor or damages will be allowed. In no event shall Eines Canela be liable for consequential or special damages of any kind.

### **Special tool quotation**

Orders for special tools must be confirmed in writing before manufacturing can begin. Special items and non-stock standard items cannot be cancelled or returned for exchange or credit.

### **Delivery terms**

Full transportation costs will be charged to the buyer. Specify shipment to be made by other than regular means of transportation.

### **Claims**

Claims for loss in transit must be made against the transportation company. The foregoing shall constitute the sole and exclusive remedies of the customer and are in lieu of all other warranties, expressed, implied or statutory, including but not limited to any implied warranty of merchantability or fitness.

### **Returns**

No merchandise will be accepted for return after 30 days of shipment. All returns must be pre-paid and must be accompanied by our Return Goods Authorization (RGA) number. This number must appear on the outside of the box. Merchandise must be received in good condition or will be refused.

**Conditions, terms, and prices are subject to change without notice.  
Any typographical or other error in this catalogue is subject to correction.**

### **Verkaufsbedingungen**

Alle Verkäufe werden in Übereinstimmung mit unseren Standard-Lieferbedingungen gemacht, die gültig waren als die Bestellungen akzeptiert worden sind. Spezifizierungen und Preise können ohne Benachrichtigung geändert werden.

### **Produktgarantie**

Eines Canela wird die Produkte ersetzen oder reparieren, die ihrer Meinung nach, einen Materialdefekt oder ein Herstellungsfehler haben. Alle Ansprüche müssen schriftlich innerhalb von dreißig Tagen nach der Annahme des Produktes erhoben werden. Kein Garantieanspruch leisten wir für Werkstückbeschädigungen. In keinem Fall wird Eines Canela für Folgeschäden jeder Art verantwortlich sein.

### **Angebote für Sonderwerkzeuge**

Die Bestellungen von Sonderwerkzeuge müssen schriftlich bestätigt werden, bevor die Herstellung beginnen kann. Sonderwerkzeuge und nicht auf Lager liegende Standardwerkzeuge können nicht storniert, im Austausch oder zur Gutschrift zurückgegeben werden.

### **Liefersbedingungen**

Alle Transportkosten sind vom Käufer zu bezahlen. Der Käufer muß den Verkäufer informieren, wenn eine Sendung durch ein anderes Transportmittel gemacht werden soll, das nicht das normale ist.

### **Einsprüche**

Ansprüche auf den Verlust während der Sendung müssen gegen die Transport-Gesellschaft erhoben werden. Das Vorstehende ersetzt die alleinigen und exklusiven Einkaufsbedingungen des Kunden und wird anstatt aller anderen Garantien angewendet.

### **Rückgaben**

Keine Waren werden für die Rückgabe 30 Tagen nach dem Versanddatum akzeptiert. Alle Rückgaben müssen frei Haus geschickt werden und mit unserer Rückgabe-Genehmigungsnummer (RGA) begleitet werden. Diese Nummer muss auf der Außenseite des Kartons erscheinen. Waren müssen in gutem Zustand sein, sonst wird die Annahme verweigert.

**Bedingungen, Fristen und Preise sind Änderungen vorbehalten.  
Irgendwelcher typografischer oder anderer Fehler in diesem Katalog ist der Korrektur unterworfen.**



## EINES CANELA, S.A.

This catalogue contains information and specifications concerning cutting tools sold by Eines Canela. Although some of the cutting tools made from carbides are very tough and resist breakage, most are brittle and special safety precautions are required when using them.

Small fragment and chips may be thrown from a cutting tool when a fracture occurs. Since these fragments or chips are thrown at very high speeds and are very hot, contact with the skin or eyes could cause severe injury. Also, the grinding of these cutting tools will produce fine carbide and cobalt or nickel dust which may be harmful to the lungs. Listed below are some suggestions on how to minimize the potential for injury while using cutting tools.

For more information about the product hazards and safety precautions that must be taken to minimize the possibility of injury while using cutting tools, please call your Eines Canela Sales Engineer.

Eines Canela has no control over use of these cutting tools. The user must determine the suitability of these tools in its particular application.

**WARNING: Very hot chip fragments may be thrown from cutting tools at very high speeds. These chips can cause severe burns, cuts or punctures to the skin, or damage to the eyes. The following are some of the safety precautions that must be followed by operators and observers while using cutting tools:**

1. Make sure that the insert size and shape are adequate for use to which it is being cut.
2. Chip control is necessary to prevent a continuous chip catching in the workpiece.
3. Chips are very hot and have sharp edges and should not be removed by hand.
4. Turn off the machine whenever chips are removed or when the cutting tools are changed.
5. Do not use air hoses to blow chips away from the machine.
6. To prevent tool breakage use the correct size toolholder.
7. Make sure that the overhang on the toolholder is as short as possible. Too much overhang can result in chatter and tool breakage.
8. To prevent the workpiece from coming loose during use, be sure the workpiece is tight and secure in its holder.
9. Overloading of tungsten carbide cutting tools may cause fractures of these tools.
10. A slug may be ejected at high speeds during drilling.

To protect the operator and observer from possible flying objects which could result in severe injury, the following protective devices should be worn or used while using cutting tools:

1. Wear hard hats.
2. Wear safety glasses with side shields.
3. Wear closed shoes with steel toes.
4. Keep protective enclosure on machine in place during operation.

**WARNING: Grinding or finishing carbide produces fine carbide and cobalt or nickel dust. This dust may cause injury to the lungs.**

**Operators and observers must take the following safety precautions to minimize the possibility of such injury:**

1. Use with adequate ventilation.
2. Maintain the dust or mist level below recommended levels.
3. Avoid breathing dust or mist. If not possible, wear appropriate respirators, particularly when grinding tungsten carbide.
4. Minimize prolonged skin contact.
5. Wash hands thoroughly after handling.

**WARNING: Use of cutting fluids and work materials create hazards. Be careful at all times.**

1. Keep the cutting fluid clean so no particles can be carried back across the workpiece and possibly scratch it.
2. Cutting fluids may catch on fire when exposed to high temperatures generated during cutting.
3. Work materials such as aluminium, magnesium, uranium and titanium are flammable and could catch on fire.
4. Cutting fluids should be treated or replaced to reduce bacterial levels which may cause illness.

### - WARNING -

Speeds, Feeds and Grade information within this catalogue are for reference only. If the operator does not feel safe using our speeds, feeds and grades, then the operator should use what is comfortable to him or her. Eines Canela is not responsible for any damage or injury that occurs using the speeds, feeds and grades information within catalogue.

**EINES CANELA, S.A.**

Dieser Katalog enthält Information und Spezifizierungen bezüglich Schneidwerkzeugen, die durch Eines Canela verkauft sind. Obwohl einige der aus Hartmetall gemachten Schneidwerkzeuge sehr zäh sind und Brechung widerstehen, sind die meisten spröde, und spezielle Sicherheitsvorsichtsmaßnahmen sind erforderlich, wenn man sie verwendet.

Kleine Bruchstücke und Späne können von einem Schneidwerkzeug geworfen werden, wenn ein Bruch vorkommt. Da diese Bruchstücke oder Späne mit sehr hohen Geschwindigkeiten geschleudert werden und sehr heiß sind, können sie ernste Verletzungen verursachen wenn sie mit der Haut oder mit den Augen in Verbindung kommen. Außerdem erzeugt das Schleifen dieser Schneidwerkzeuge feines Karbid- und Kobalt- oder Nickel-Staub, der für die Lungen schädlich sein kann. Unten sind einige Vorschläge verzeichnet, wie man das Potenzial für Verletzungen minimiert, wenn man die Schneidwerkzeuge verwendet.

Für mehr Information über die Produktgefahren und Sicherheitsmaßnahmen, die vorgenommen werden müssen, um die Möglichkeit der Verletzung zu minimieren, wenn Sie Schneidwerkzeugen verwenden, rufen Sie bitte Ihren Eines Canela Verkaufsspezialisten an.

Eines Canela hat keine Kontrolle über den Gebrauch dieser Schneidwerkzeuge. Der Anwender hat die Verantwortung für den sachgemäßen Einsatz dieser Werkzeuge.

**WARNUNG: Sehr heiße Span-Bruchstücke können von den Schneidwerkzeugen mit sehr hohen Geschwindigkeiten geworfen werden. Diese Späne können ernste Brandwunden, Schnitte oder Verletzungen der Haut verursachen, oder die Augen beschädigen. Folgend sind einige der Sicherheitsmaßnahmen, die von Maschinenbedienern und Beobachtern gefolgt werden müssen, wenn sie Schneidwerkzeuge verwenden:**

1. Stellen Sie sicher, daß die Größe und Form der Wendeschneidplatte für den Gebrauch entsprechend sind, zu dem sie bestellt worden sind.
2. Span-Kontrolle ist notwendig, um zu verhindern, daß die Späne dauernd im Kontakt mit dem Werkzeug kommen.
3. Späne sind sehr heiß und haben scharfe Ränder und sollten nicht mit der Hand berührt werden.
4. Schalten Sie die Maschine ab, immer wenn die Späne entfernt werden, oder wenn die Schneidwerkzeuge gewechselt werden.
5. Verwenden Sie keine Druckluft, um die Späne von der Maschine wegzublasen.
6. Um Werkzeug-Bruch zu verhindern, verwenden Sie die richtigen Größe des Werkzeughalters.
7. Stellen Sie sicher, daß die Auskragung auf dem Werkzeughalter so kurz wie möglich ist. Zu viele Auskragslänge kann Schwingungen und Werkzeug-Bruch verursachen.
8. Um zu vermeiden, daß das Werkstück während der Bearbeitung lose wird, überprüfen Sie die sichere und feste Spannung des Werkstücks.
9. Die Überbelastung von Hartmetall-Schneidwerkzeugen kann Brüche dieser Werkzeuge verursachen.
10. Eine Scheibe kann mit hohen Geschwindigkeiten während des Bohrens geschleudert werden.

Um den Maschinenbediener und Beobachter von möglichen fliegenden Gegenständen zu schützen, die Verletzungen verursachen konnten, sollten die folgenden Schutzgeräte getragen oder verwendet werden, wenn man Schneidwerkzeuge verwendet:

1. Tragen Sie Schutzhelme.
2. Tragen Sie Sicherheitsbrille mit Seitenschildern.
3. Tragen Sie Sicherheitsschuhe.
4. Verwenden Sie Schutzwände zur Abdeckung der Maschine während der Bearbeitung.

**WARNUNG: Hartmetall schleifen oder fertigen erzeugt feines Karbid- und Kobalt- oder Nickel-Staub. Dieser Staub kann Verletzungen zu den Lungen verursachen. Maschinenbediener und Beobachter müssen die folgenden Sicherheitsmaßnahmen nehmen, um die Möglichkeit solcher Verletzung zu minimieren:**

1. Verwenden Sie geeignete Absaugungen.
2. Senken Sie den Staub oder das Nebel-Niveau unter des empfohlenen Niveaus.
3. Vermeiden Sie, den Staub oder das Nebel zu atmen. Wenn nicht möglich, dann verwenden Sie Atemschutzmasken, besonders wenn Sie Karbid schleifen.
4. Minimieren Sie den Hautkontakt.
5. Waschen Sie sich die Hände gründlich nach dem Berühren.

**WARNUNG: Der Gebrauch von Schneidflüssigkeiten und Arbeitsmaterialien schafft Gefahren. Seien Sie zu jeder Zeit sorgfältig im Umgang damit.**

1. Halten Sie die Schneidflüssigkeit sauber, sodaß keine Partikeln das Werkstück verkratzen können.
2. Schneidflüssigkeiten können im Brand geraten, wenn sie zu den hohen Temperaturen ausgesetzt werden, die beim Schneiden erzeugt werden.
3. Arbeitsmaterialien wie Aluminium, Magnesium, Uran und Titan sind feuergefährlich und können im Brand geraten.
4. Schneidflüssigkeiten sollten behandelt oder ersetzt werden, um das Bakterienniveau zu reduzieren, das Krankheiten verursachen kann.

**- WARNUNG -**

Informationen über Geschwindigkeiten, Vorschübe und Sorten innerhalb dieses Katalogs sind nur als Richtwerte zu benutzen. Wenn sich der Maschinenbediener nicht sicher ist, ob diese Geschwindigkeiten, Vorschübe und Sorten richtig sind, dann sollte der Maschinenbediener die Werte entsprechend der Bearbeitung anpassen. Eines Canela ist nicht für Schaden oder Verletzungen verantwortlich, die vorkommen können, wenn man die Informationen über Geschwindigkeiten, Vorschübe und Sorten verwendet, die in diesem Katalog genannt werden.



