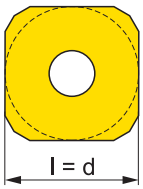
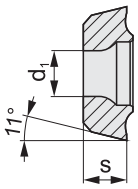
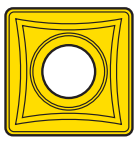
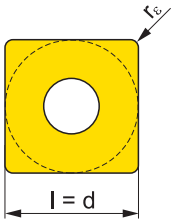
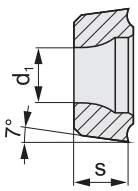
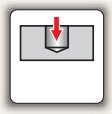
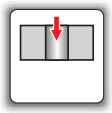
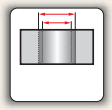
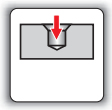
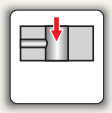
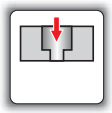
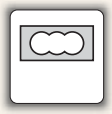
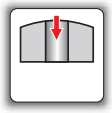
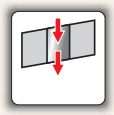
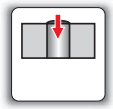
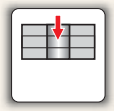
2015

DRILLING

2D	2D	3D	3D	4D	4D	SCET -UD	XPET -AP	Working length
								Picture
						-	-	Coolant
D8 – D9	D10 – D11	D12 – D13	D14 – D15	D16 – D17	D18 – D19	D21	D22	Page
802D (inch)	802D (metric)	803D (inch)	803D (metric)	804D (inch)	804D (metric)	-	-	Drill type
± .002	± .05	± .002	± .05	± .002	± .05			Drill tolerance
0 / + .008	0 / + .2	0 / + .012	0 / + .3	0 / + .016	0 / + .4	-	-	Hole tolerance *
Ra 80 – 240 µin	Ra 2 – 6 µm	Ra 80 – 240 µin	Ra 2 – 6 µm	Ra 80 – 240 µin	Ra 2 – 6 µm	-	-	Surface finish *
.594 – 2.000	15.0 – 40.0	.594 – 2.000	15.0 – 58.0	.594 – 2.000	17.0 – 58.0	-	-	Diameter range
  						■	■	P1
						■	■	P2
						■	■	P3
						■	■	P4
						■	■	M1
						■	■	M2
						□	□	M3
						□	□	M4
						■	■	K1
						■	■	K2
						■	■	K3
						■	■	K4
  						-	-	N1
						□	□	N2
						□	□	N3
						□	□	N4
						-	-	S1
						□	□	S2
						□	□	S3
						□	□	S4
						■	■	H1
						■	■	H2
						□	□	H3
						□	□	H4

* The tolerance of drilled hole and surface finish are heavily dependent on machining conditions.

Symbol	Description
	Blind hole drilling
	Through hole drilling
	Adjustable drill diameter
	Drilling into center drilled hole
	Drilling across an existing hole
	Boring
	Interrupted cut or plunging
	Drilling on curved surface

Symbol	Description
	Drilling on angled surface
	Welded joint drilling
	Drilling of stacked materials
	Cutting material
	Type of shank - universal
	Approximate working length
	Internal Coolant
	Type of tool - drill

NOTES

802D (inch)

D8

802D (metric)

D10

803D (inch)

D12

803D (metric)

D14

804D (inch)

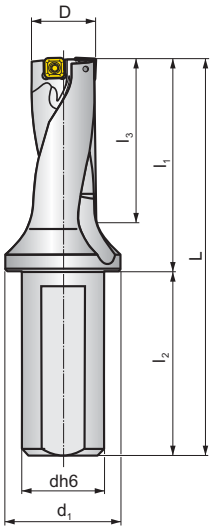
D16

804D (metric)

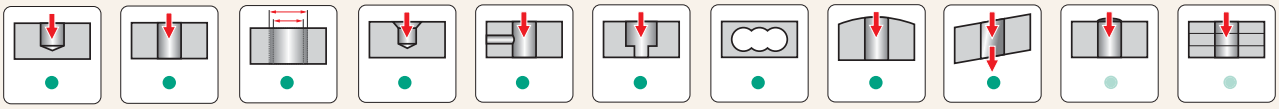
D18

TYPE 802D (INCH)

See page D20



Other versions available on request.



● Recommended application ● Possible applications (see more on pg. D27) ○ Not recommended

D [in]	h [in]	Designation	Assortment	Dimensions [in] L	l_1	l_2	l_3	dh6	d_1	Centre insert XPET	Peripheral insert SCET	Radial adjustment [in] -	+
.594	1.188	**802D-0594-118-S100**	●	4.417	2.173	2.244	1.346	1.000	1.378	0502AP	0502..	.012	.012
.625	1.250	**802D-0625-125-S100**	●	4.480	2.236	2.244	1.425	1.000	1.378	0502AP	0502..	.006	.016
.656	1.312	**802D-0656-131-S100**	●	4.539	2.295	2.244	1.500	1.000	1.378	0502AP	0502..	.006	.016
.687	1.374	**802D-0687-137-S100**	●	4.602	2.358	2.244	1.559	1.000	1.378	0602AP	0502..	.020	.020
.709	1.418	**802D-0709-141-S100**	●	4.646	2.402	2.244	1.614	1.000	1.378	0602AP	0502..	.014	.008
.750	1.500	**802D-0750-150-S100**	●	4.728	2.484	2.244	1.677	1.000	1.378	0602AP	0502..	.012	.014
.766	1.532	**802D-0766-153-S100**	●	4.760	2.516	2.244	1.717	1.000	1.378	0602AP	0602..	.008	.020
.787	1.574	**802D-0787-157-S100**	●	4.803	2.559	2.244	1.772	1.000	1.378	0602AP	0602..	.008	.020
.812	1.624	**802D-0812-162-S100**	●	4.850	2.606	2.244	1.831	1.000	1.378	0602AP	0602..	.004	.019
.827	1.654	**802D-0827-165-S100**	●	4.882	2.638	2.244	1.870	1.000	1.378	0602AP	0602..	.004	.019
.875	1.750	**802D-0875-175-S100**	●	4.976	2.732	2.244	1.992	1.000	1.378	0703AP	0602..	.011	.019
.906	1.812	**802D-0906-181-S100**	●	5.039	2.795	2.244	2.067	1.000	1.378	0703AP	0703..	.008	.019
.922	1.844	**802D-0922-184-S100**	●	5.071	2.827	2.244	2.106	1.000	1.378	0703AP	0703..	.008	.019
.937	1.874	**802D-0937-187-S100**	●	5.102	2.858	2.244	2.146	1.000	1.378	0703AP	0703..	.004	.019
.984	1.969	**802D-0984-196-S125**	●	5.315	2.953	2.362	2.165	1.250	1.654	0703AP	0703..	.004	.019
1.000	2.000	**802D-1000-200-S125**	●	5.346	2.984	2.362	2.205	1.250	1.654	0703AP	0703..	.004	.019
1.032	2.064	**802D-1032-206-S125**	●	5.409	3.047	2.362	2.283	1.250	1.654	0903AP	0703..	.004	.019
1.062	2.124	**802D-1062-212-S125**	●	5.469	3.106	2.362	2.358	1.250	1.654	0903AP	0703..	.020	.008
1.109	2.218	**802D-1109-221-S125**	●	5.563	3.201	2.362	2.476	1.250	1.654	0903AP	09T3..	.020	.014
1.125	2.250	**802D-1125-225-S125**	●	5.598	3.236	2.362	2.520	1.250	1.654	0903AP	09T3..	.020	.014
1.172	2.344	**802D-1172-234-S125**	●	5.689	3.327	2.362	2.634	1.250	1.654	0903AP	09T3..	.014	.020
1.187	2.374	**802D-1187-237-S125**	●	5.720	3.358	2.362	2.669	1.250	1.654	0903AP	09T3..	.014	.020

● stocked as standard / ○ non stocked as standard
See price list for current availability.

PRAMET

TYPE 802D (INCH)

D [in]	h [in]	Designation	Assortment	Dimensions [in]						Centre insert XPET	Peripheral insert SCET	Radial adjustment [in]	
				L	l_1	l_2	l_3	dh6	d_1			-	+
1.250	2.500	**802D-1250-250-S150**	●	6.122	3.484	2.638	2.669	1.500	1.969	11T3AP	09T3..	.006	.020
1.312	2.624	**802D-1312-262-S150**	●	6.244	3.606	2.638	2.827	1.500	1.969	11T3AP	09T3..	.020	.020
1.344	2.688	**802D-1344-268-S150**	●	6.311	3.673	2.638	2.906	1.500	1.969	11T3AP	09T3..	.020	.020
1.375	2.750	**802D-1375-275-S150**	●	6.370	3.732	2.638	2.945	1.500	1.969	11T3AP	1204..	.008	.020
1.437	2.874	**802D-1437-287-S150**	●	6.496	3.858	2.638	3.098	1.500	1.969	11T3AP	1204..	.004	.020
1.500	3.000	**802D-1500-300-S150**	●	6.622	3.984	2.638	3.256	1.500	1.969	11T3AP	1204..	.006	.020
1.750	3.500	**802D-1750-350-S150**	●	7.094	4.457	2.638	3.894	1.500	1.969	1504AP	1204..	.020	.020
2.000	4.000	**802D-2000-400-S150**	●	7.626	4.988	2.638	4.394	1.500	2.205	1504AP	1505..	.006	.020

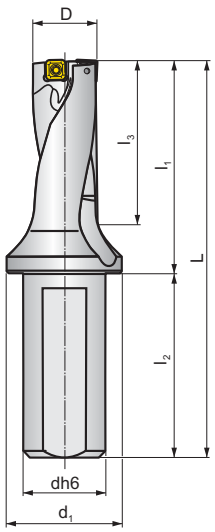
SPARE PARTS

Drill	Clamping screw - Centre insert	Clamping screw - Peripheral insert	Screwdriver
∅ **.594** - ∅ **.656**	US 2245-T07P	US 2245-T07P	FLAG T07P
∅ **.687** - ∅ **.750**	US 2205-T07P	US 2245-T07P	FLAG T07P
∅ **.766** - ∅ **.827**	US 2205-T07P	US 2205-T07P	FLAG T07P
∅ **.875**	US 2506-T07P	US 2506-T07P	FLAG T07P
∅ **.906** - ∅ **1.000**	US 2507-T08P	US 3007-T08P	FLAG T08P
∅ **1.032** - ∅ **1.062**	US 3007-T09P	US 3007-T09P	FLAG T09P
∅ **1.109** - ∅ **1.187**	US 3007-T09P	US 3009-T09P	FLAG T09P
∅ **1.250** - ∅ **1.344**	US 3510-T15P	US 3508-T15P	FLAG T15P
∅ **1.375** - ∅ **1.500**	US 3510-T15P	US 5012-T15P	FLAG T15P
∅ **1.750** - ∅ **2.000**	US 4011-T15P	US 5012-T15P	FLAG T15P

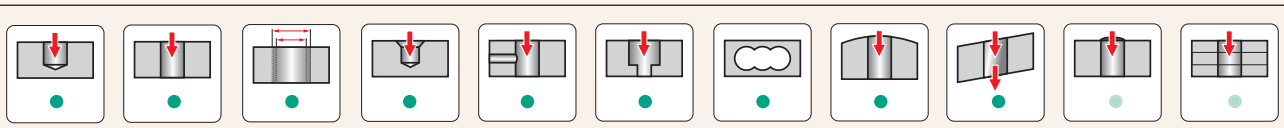
● stocked as standard / ○ non stocked as standard
See price list for current availability.

TYPE 802D (METRIC)

See page D20



Other versions available on request.



● Recommended application ● Possible applications (see more on pg. D27) ○ Not recommended

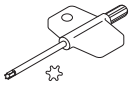
D [in]	D [mm]	h [mm]	Designation	Assortment	Dimensions [mm] L	l_1	l_2	l_3	dh6	d_1	Centre insert XPET	Peripheral insert SCET	Radial adjustment [mm] -	+
.591	15	30	**802D-15-30-S25**	●	111	55	56	34	25	35	0502AP	0502..	.25	.35
.630	16	32	**802D-16-32-S25**	●	113	57	56	36.5	25	35	0502AP	0502..	.15	.45
.669	17	34	**802D-17-34-S25**	●	115	59	56	39	25	35	0502AP	0502..	.10	.50
.709	18	36	**802D-18-36-S25**	●	117	61	56	41	25	35	0602AP	0502..	.35	.25
.748	19	38	**802D-19-38-S25**	●	119	63	56	43.5	25	35	0602AP	0502..	.15	.45
.787	20	40	**802D-20-40-S25**	●	121	65	56	45	25	35	0602AP	0602..	.10	.45
.827	21	42	**802D-21-42-S25**	●	123	67	56	47.5	25	35	0602AP	0602..	.10	.50
.866	22	44	**802D-22-44-S25**	●	125	69	56	50	25	35	0703AP	0602..	.45	.50
.906	23	46	**802D-23-46-S25**	●	127	71	56	52.5	25	35	0703AP	0703..	.35	.50
.945	24	48	**802D-24-48-S25**	●	129	73	56	55	25	35	0703AP	0703..	.15	.50
.984	25	50	**802D-25-50-S32**	●	135	75	60	55	32	42	0703AP	0703..	.15	.50
1.024	26	52	**802D-26-52-S32**	●	137	77	60	57.5	32	42	0703AP	0703..	.50	.15
1.063	27	54	**802D-27-54-S32**	●	139	79	60	60	32	42	0903AP	0703..	.50	.30
1.102	28	56	**802D-28-56-S32**	●	141	81	60	62.5	32	42	0903AP	09T3..	.30	.50
1.142	29	58	**802D-29-58-S32**	●	143	83	60	65	32	42	0903AP	09T3..	.20	.50
1.181	30	60	**802D-30-60-S32**	●	145	85	60	67.5	32	42	0903AP	09T3..	.15	.50
1.417	36	72	**802D-36-72-S32**	●	157	97	60	81.5	32	42	11T3AP	1204..	.10	.50
1.575	40	80	**802D-40-80-S32**	●	165	105	60	91.5	32	42	12T3AP	1204..	.20	.50

● stocked as standard / ○ non stocked as standard
See price list for current availability.

PRAMET

TYPE 802D (METRIC)

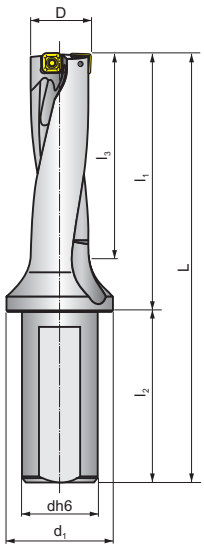
SPARE PARTS

Drill	Clamping screw - Centre insert 	Clamping screw - Peripheral insert 	Screwdriver 
∅**15** - ∅**17**	US 2245-T07P	US 2245-T07P	FLAG T07P
∅**17.5** - ∅**19**	US 2205-T07P	US 2245-T07P	FLAG T07P
∅**19.5** - ∅**21**	US 2205-T07P	US 2205-T07P	FLAG T07P
∅**21.5** - ∅**22**	US 2506-T07P	US 2506-T07P	FLAG T07P
∅**22.5** - ∅**26**	US 2507-T08P	US 3007-T08P	FLAG T08P
∅**26.5** - ∅**27**	US 3007-T09P	US 3007-T09P	FLAG T09P
∅**28** - ∅**31**	US 3007-T09P	US 3009-T09P	FLAG T09P
∅**35** - ∅**43**	US 3510-T15P	US 5012-T15P	FLAG T15P

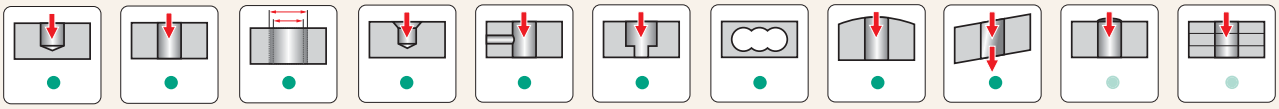
● stocked as standard / ○ non stocked as standard
See price list for current availability.

TYPE 803D (INCH)

See page D20



Other versions available on request.



● Recommended application ● Possible applications (see more on pg. D27) ○ Not recommended

D [in]	h [in]	Designation	Assortment	Dimensions [in]						Centre insert XPET	Peripheral insert SCET	Radial adjustment [in]	
				L	l_1	l_2	l_3	dh6	d_1			-	+
.594	1.783	**803D-0594-178-S100**	●	5.012	2.768	2.244	1.941	1.000	1.378	0502AP	0502..	.012	.012
.625	1.875	**803D-0625-187-S100**	●	5.102	2.858	2.244	2.047	1.000	1.378	0502AP	0502..	.006	.016
.656	1.969	**803D-0656-196-S100**	●	5.197	2.953	2.244	2.157	1.000	1.378	0502AP	0502..	.006	.016
.687	2.061	**803D-0687-206-S100**	●	5.287	3.043	2.244	2.244	1.000	1.378	0602AP	0502..	.020	.020
.709	2.127	**803D-0709-212-S100**	●	5.354	3.110	2.244	2.323	1.000	1.378	0602AP	0502..	.014	.008
.750	2.250	**803D-0750-225-S100**	●	5.476	3.232	2.244	2.425	1.000	1.378	0602AP	0502..	.012	.014
.766	2.298	**803D-0766-229-S100**	●	5.528	3.283	2.244	2.484	1.000	1.378	0602AP	0602..	.008	.020
.787	2.361	**803D-0787-236-S100**	●	5.591	3.346	2.244	2.559	1.000	1.378	0602AP	0602..	.008	.020
.812	2.436	**803D-0812-243-S100**	●	5.665	3.421	2.244	2.646	1.000	1.378	0602AP	0602..	.004	.019
.827	2.481	**803D-0827-248-S100**	●	5.709	3.465	2.244	2.697	1.000	1.378	0602AP	0602..	.004	.019
.875	2.625	**803D-0875-262-S100**	●	5.854	3.610	2.244	2.866	1.000	1.378	0703AP	0602..	.011	.019
.906	2.718	**803D-0906-271-S100**	●	5.945	3.701	2.244	2.972	1.000	1.378	0703AP	0703..	.008	.019
.922	2.766	**803D-0922-276-S100**	●	5.996	3.752	2.244	3.031	1.000	1.378	0703AP	0703..	.008	.019
.937	2.811	**803D-0937-281-S100**	●	6.039	3.795	2.244	3.083	1.000	1.378	0703AP	0703..	.004	.019
.984	2.952	**803D-0984-295-S125**	●	6.299	3.937	2.362	3.150	1.250	1.654	0703AP	0703..	.004	.019
1.000	3.000	**803D-1000-300-S125**	●	6.346	3.984	2.362	3.205	1.250	1.654	0703AP	0703..	.004	.019
1.032	3.096	**803D-1032-310-S125**	●	6.441	4.079	2.362	3.315	1.250	1.654	0903AP	0703..	.004	.019
1.062	3.186	**803D-1062-318-S125**	●	6.531	4.169	2.362	3.421	1.250	1.654	0903AP	0703..	.020	.008
1.109	3.327	**803D-1109-332-S125**	●	6.673	4.311	2.362	3.587	1.250	1.654	0903AP	09T3..	.020	.014
1.125	3.375	**803D-1125-337-S125**	●	6.720	4.358	2.362	3.642	1.250	1.654	0903AP	09T3..	.020	.014
1.172	3.516	**803D-1172-351-S125**	●	6.862	4.500	2.362	3.807	1.250	1.654	0903AP	09T3..	.014	.020
1.187	3.561	**803D-1187-356-S125**	●	6.906	4.543	2.362	3.858	1.250	1.654	0903AP	09T3..	.014	.020

● stocked as standard / ○ non stocked as standard
See price list for current availability.

PRAMET

TYPE 803D (INCH)

D [in]	h [in]	Designation	Assortment	Dimensions [in]						Centre insert XPET	Peripheral insert SCET	Radial adjustment [in]	
				L	l_1	l_2	l_3	dh6	d_1			-	+
1.250	3.750	**803D-1250-375-S150**	●	7.370	4.732	2.638	3.921	1.500	1.969	11T3AP	09T3..	.006	.020
1.312	3.936	**803D-1312-393-S150**	●	7.559	4.921	2.638	4.138	1.500	1.969	11T3AP	09T3..	.020	.020
1.344	4.032	**803D-1344-403-S150**	●	7.654	5.016	2.638	4.252	1.500	1.969	11T3AP	09T3..	.020	.020
1.375	4.125	**803D-1375-412-S150**	●	7.748	5.110	2.638	4.319	1.500	1.969	11T3AP	1204..	.008	.020
1.437	4.311	**803D-1437-431-S150**	●	7.933	5.295	2.638	4.535	1.500	1.969	11T3AP	1204..	.004	.020
1.500	4.500	**803D-1500-450-S150**	●	8.122	5.484	2.638	4.756	1.500	1.969	11T3AP	1204..	.006	.020
1.750	5.250	**803D-1750-525-S150**	●	8.843	6.205	2.638	5.642	1.500	1.969	1504AP	1204..	.020	.020
2.000	6.000	**803D-2000-600-S150**	●	9.626	6.988	2.638	6.394	1.500	2.205	1504AP	1505..	.006	.020

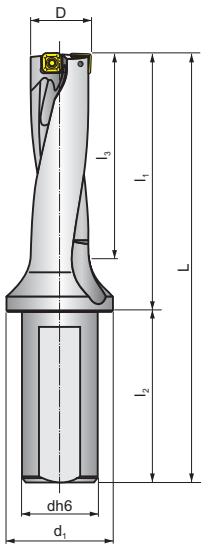
SPARE PARTS

Drill	Clamping screw - Centre insert	Clamping screw - Peripheral insert	Screwdriver
∅ **.594** - ∅ **.656**	US 2245-T07P	US 2245-T07P	FLAG T07P
∅ **.687** - ∅ **.750**	US 2205-T07P	US 2245-T07P	FLAG T07P
∅ **.766** - ∅ **.827**	US 2205-T07P	US 2205-T07P	FLAG T07P
∅ **.875**	US 2506-T07P	US 2506-T07P	FLAG T07P
∅ **.906** - ∅ **1.000**	US 2507-T08P	US 3007-T08P	FLAG T08P
∅ **1.032** - ∅ **1.062**	US 3007-T09P	US 3007-T09P	FLAG T09P
∅ **1.109** - ∅ **1.187**	US 3007-T09P	US 3009-T09P	FLAG T09P
∅ **1.250** - ∅ **1.344**	US 3510-T15P	US 3508-T15P	FLAG T15P
∅ **1.375** - ∅ **1.500**	US 3510-T15P	US 5012-T15P	FLAG T15P
∅ **1.750** - ∅ **2.000**	US 4011-T15P	US 5012-T15P	FLAG T15P

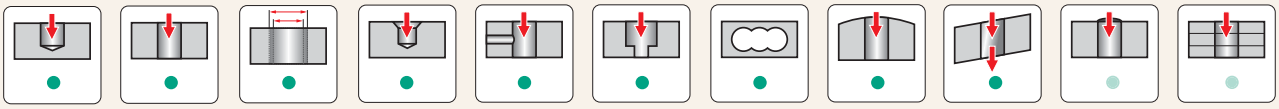
● stocked as standard / ○ non stocked as standard
See price list for current availability.

TYPE 803D (METRIC)

See page D20



Other versions available on request.



● Recommended application ● Possible applications (see more on pg. D27) ○ Not recommended

D [in]	D [mm]	h [mm]	Designation	Assortment	Dimensions [mm] L	l_1	l_2	l_3	dh6	d_1	Centre insert XPET	Peripheral insert SCET	Radial adjustment [mm] -	+
.591	15	45	**803D-15-45-S25**	●	126	70	56	49	25	35	0502AP	0502..	.25	.35
.610	15.5	46.5	**803D-15.5-46.5-S25**	●	127.5	71.5	56	5.8	25	35	0502AP	0502..	.30	.35
.630	16	48	**803D-16-48-S25**	●	129	73	56	52.5	25	35	0502AP	0502..	.15	.45
.650	16.5	49.5	**803D-16.5-49.5-S25**	●	13.5	74.5	56	54.2	25	35	0502AP	0502..	.15	.40
.669	17	51	**803D-17-51-S25**	●	132	76	56	56	25	35	0502AP	0502..	.10	.50
.689	17.5	52.5	**803D-17.5-52.5-S25**	●	133.5	77.5	56	57.2	25	35	0602AP	0502..	.50	.50
.709	18	54	**803D-18-54-S25**	●	135	79	56	59	25	35	0602AP	0502..	.35	.25
.728	18.5	55.5	**803D-18.5-55.5-S25**	●	136.5	8.5	56	6.7	25	35	0602AP	0502..	.35	.25
.748	19	57	**803D-19-57-S25**	●	138	82	56	62.5	25	35	0602AP	0502..	.15	.45
.768	19.5	58.5	**803D-19.5-58.5-S25**	●	139.5	83.5	56	63.2	25	35	0602AP	0602..	.25	.40
.787	20	60	**803D-20-60-S25**	●	141	85	56	65	25	35	0602AP	0602..	.10	.45
.807	2.5	61.5	**803D-2.5-61.5-S25**	●	142.5	86.5	56	66.7	25	35	0602AP	0602..	.10	.50
.827	21	63	**803D-21-63-S25**	●	144	88	56	68.5	25	35	0602AP	0602..	.10	.50
.846	21.5	64.5	**803D-21.5-64,5-S25**	●	145.5	89.5	56	7.2	25	35	0703AP	0602..	.35	.50
.866	22	66	**803D-22-66-S25**	●	147	91	56	72	25	35	0703AP	0602..	.45	.50
.886	22.5	67.5	**803D-22.5-67.5-S25**	●	148.5	92.5	56	73.8	25	35	0703AP	0703..	.35	.50
.906	23	69	**803D-23-69-S25**	●	150	94	56	75.5	25	35	0703AP	0703..	.35	.50
.925	23.5	7.5	**803D-23.5-7.5-S25**	●	151.5	95.5	56	77.2	25	35	0703AP	0703..	.10	.50
.945	24	72	**803D-24-72-S25**	●	153	97	56	79	25	35	0703AP	0703..	.15	.50
.965	24.5	73.5	**803D-24.5-73.5-S25**	●	154.5	98.5	56	8.8	25	35	0703AP	0703..	.10	.50
.984	25	75	**803D-25-75-S32**	●	160	100	60	80	32	42	0703AP	0703..	.15	.50
1.004	25.5	76.5	**803D-25.5-76.5-S32**	●	161.5	101.5	60	81.8	32	42	0703AP	0703..	.50	.10

● stocked as standard / ○ non stocked as standard
See price list for current availability.

TYPE 803D (METRIC)

D [in]	D [mm]	h [mm]	Designation	Assortment	Dimensions [mm]						Centre insert XPET	Peripheral insert SCET	Radial adjustment [mm]	
					L	l_1	l_2	l_3	dh6	d_1			-	+
1.024	26	78	**803D-26-78-S32**	●	163	103	60	83.5	32	42	0703AP	0703..	0.50	0.15
1.043	26.5	79.5	**803D-26,5-79,5-S32**	●	164.5	104.5	60	85.2	32	42	0903AP	0703..	0.50	0.10
1.063	27	81	**803D-27-81-S32**	●	166	106	60	87	32	42	0903AP	0703..	0.50	0.30
1.102	28	84	**803D-28-84-S32**	●	169	109	60	90.5	32	42	0903AP	09T3..	0.30	0.50
1.142	29	87	**803D-29-87-S32**	●	172	112	60	94	32	42	0903AP	09T3..	0.20	0.50
1.181	30	90	**803D-30-90-S32**	●	175	115	60	97.5	32	42	0903AP	09T3..	0.15	0.50
1.378	35	105	**803D-35-105-S32**	●	190	130	60	114	32	42	11T3AP	1204..	0.25	0.50
1.575	40	120	**803D-40-120-S32**	●	205	145	60	131.5	32	42	12T3AP	1204..	0.20	0.50

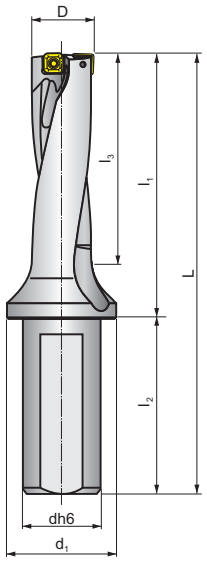
SPARE PARTS

Drill	Clamping screw - Centre insert	Clamping screw - Peripheral insert	Screwdriver
∅**15** - ∅**17**	US 2245-T07P	US 2245-T07P	FLAG T07P
∅**17.5** - ∅**19**	US 2205-T07P	US 2245-T07P	FLAG T07P
∅**19.5** - ∅**21**	US 2205-T07P	US 2205-T07P	FLAG T07P
∅**21.5** - ∅**22**	US 2506-T07P	US 2506-T07P	FLAG T07P
∅**22.5** - ∅**26**	US 2507-T08P	US 3007-T08P	FLAG T08P
∅**26.5** - ∅**27**	US 3007-T09P	US 3007-T09P	FLAG T09P
∅**28** - ∅**31**	US 3007-T09P	US 3009-T09P	FLAG T09P
∅**35** - ∅**43**	US 3510-T15P	US 5012-T15P	FLAG T15P

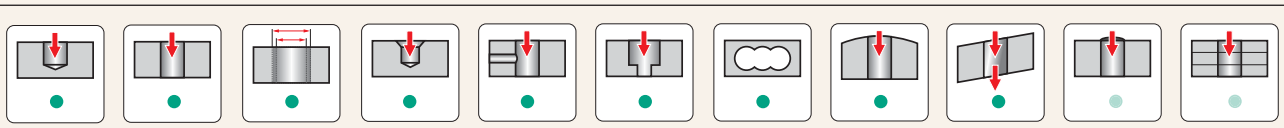
● stocked as standard / ○ non stocked as standard
See price list for current availability.

TYPE 804D (INCH)

See page D20



Other versions available on request.



● Recommended application ● Possible applications (see more on pg. D27) ○ Not recommended

D [in]	h [in]	Designation	Assortment	Dimensions [in] L	l_1	l_2	l_3	dh6	d_1	Centre insert XPET	Peripheral insert SCET	Radial adjustment [in] -	+
.594	2.376	**804D-0594-237-S100**	●	5.606	3.362	2.244	2.535	1.000	1.378	0502AP	0502..	.012	.012
.625	2.500	**804D-0625-250-S100**	●	5.728	3.484	2.244	2.673	1.000	1.378	0502AP	0502..	.006	.016
.656	2.624	**804D-0656-262-S100**	●	5.850	3.587	2.244	2.811	1.000	1.378	0502AP	0502..	.006	.016
.687	2.748	**804D-0687-274-S100**	●	5.976	3.732	2.244	2.933	1.000	1.378	0602AP	0502..	.020	.020
.709	2.836	**804D-0709-283-S100**	●	6.063	3.819	2.244	3.031	1.000	1.378	0602AP	0502..	.014	.008
.750	3.000	**804D-0750-300-S100**	●	6.228	3.984	2.244	3.217	1.000	1.378	0602AP	0502..	.012	.014
.766	3.064	**804D-0766-306-S100**	●	6.291	4.047	2.244	3.248	1.000	1.378	0602AP	0602..	.008	.020
.787	3.148	**804D-0787-314-S100**	●	6.378	4.134	2.244	3.346	1.000	1.378	0602AP	0602..	.008	.020
.812	3.248	**804D-0812-324-S100**	●	6.476	4.232	2.244	3.457	1.000	1.378	0602AP	0602..	.004	.019
.827	3.308	**804D-0827-330-S100**	●	6.535	4.291	2.244	3.524	1.000	1.378	0602AP	0602..	.004	.019
.875	3.500	**804D-0875-350-S100**	●	6.728	4.484	2.244	3.740	1.000	1.378	0703AP	0602..	.011	.019
.906	3.624	**804D-0906-362-S100**	●	6.850	4.606	2.244	3.878	1.000	1.378	0703AP	0703..	.008	.019
.922	3.688	**804D-0922-368-S100**	●	6.917	4.673	2.244	3.953	1.000	1.378	0703AP	0703..	.008	.019
.937	3.748	**804D-0937-374-S100**	●	6.976	4.732	2.244	4.020	1.000	1.378	0703AP	0703..	.004	.019
.984	3.936	**804D-0984-393-S125**	●	7.283	4.921	2.362	4.134	1.250	1.654	0703AP	0703..	.004	.019
1.000	4.000	**804D-1000-400-S125**	●	7.346	4.984	2.362	4.205	1.250	1.654	0703AP	0703..	.004	.019
1.032	4.128	**804D-1032-412-S125**	●	7.476	5.114	2.362	4.350	1.250	1.654	0903AP	0703..	.004	.019
1.062	4.248	**804D-1062-424-S125**	●	7.594	5.232	2.362	4.248	1.250	1.654	0903AP	0703..	.020	.008
1.109	4.437	**804D-1109-443-S125**	●	7.783	5.421	2.362	4.697	1.250	1.654	0903AP	09T3..	.020	.014
1.125	4.500	**804D-1125-450-S125**	●	7.846	5.484	2.362	4.768	1.250	1.654	0903AP	09T3..	.020	.014
1.172	4.688	**804D-1172-468-S125**	●	8.035	5.673	2.362	4.980	1.250	1.654	0903AP	09T3..	.014	.020
1.187	4.748	**804D-1187-474-S125**	●	8.094	5.732	2.362	5.043	1.250	1.654	0903AP	09T3..	.014	.020

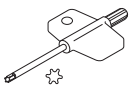
● stocked as standard / ○ non stocked as standard
See price list for current availability.

PRAMET

TYPE 804D (INCH)

D [in]	h [in]	Designation	Assortment	Dimensions [in]						Centre insert XPET	Peripheral insert SCET	Radial adjustment [in]	
				L	l_1	l_2	l_3	dh6	d_1			-	+
1.250	5.000	**804D-1250-500-S150**	●	8.622	5.984	2.638	5.169	1.500	1.969	11T3AP	09T3..	.006	.020
1.312	5.248	**804D-1312-524-S150**	●	8.870	6.232	2.638	5.449	1.500	1.969	11T3AP	09T3..	.020	.020
1.344	5.374	**804D-1344-537-S150**	●	8.996	6.358	2.638	5.594	1.500	1.969	11T3AP	09T3..	.020	.020
1.375	5.500	**804D-1375-550-S150**	●	9.122	6.484	2.638	5.693	1.500	1.969	11T3AP	1204..	.008	.020
1.437	5.748	**804D-1437-574-S150**	●	9.370	6.732	2.638	5.748	1.500	1.969	11T3AP	1204..	.004	.020
1.500	6.000	**804D-1500-600-S150**	●	9.622	6.984	2.638	6.256	1.500	1.969	11T3AP	1204..	.006	.020
1.750	7.000	**804D-1750-700-S150**	●	10.622	7.984	2.638	7.421	1.500	1.969	1504AP	1204..	.020	.020
2.000	8.000	**804D-2000-800-S150**	●	11.622	8.984	2.638	8.390	1.500	2.205	1504AP	1505..	.006	.020

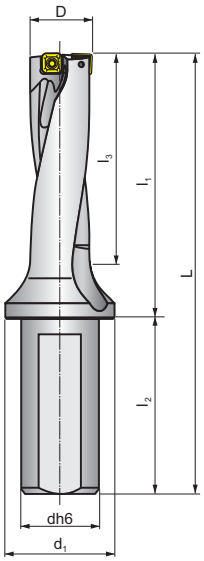
SPARE PARTS

Drill	Clamping screw - Centre insert	Clamping screw - Peripheral insert	Screwdriver
			
∅ **.594** - ∅ **.656**	US 2245-T07P	US 2245-T07P	FLAG T07P
∅ **.687** - ∅ **.750**	US 2205-T07P	US 2245-T07P	FLAG T07P
∅ **.766** - ∅ **.827**	US 2205-T07P	US 2205-T07P	FLAG T07P
∅ **.875**	US 2506-T07P	US 2506-T07P	FLAG T07P
∅ **.906** - ∅ **1.000**	US 2507-T08P	US 3007-T08P	FLAG T08P
∅ **1.032** - ∅ **1.062**	US 3007-T09P	US 3007-T09P	FLAG T09P
∅ **1.109** - ∅ **1.187**	US 3007-T09P	US 3009-T09P	FLAG T09P
∅ **1.250** - ∅ **1.344**	US 3510-T15P	US 3508-T15P	FLAG T15P
∅ **1.375** - ∅ **1.500**	US 3510-T15P	US 5012-T15P	FLAG T15P
∅ **1.750** - ∅ **2.000**	US 4011-T15P	US 5012-T15P	FLAG T15P

● stocked as standard / ○ non stocked as standard
See price list for current availability.

TYPE 804D (METRIC)

See page D20



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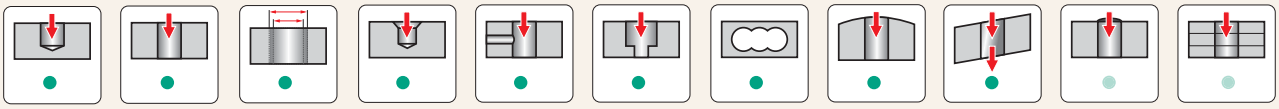


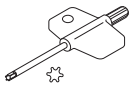
● Recommended application ● Possible applications (see more on pg. D27) ○ Not recommended

D [in]	D [mm]	h [mm]	Designation	Assortment	Dimensions [mm] L	l_1	l_2	l_3	dh6	d_1	Centre insert XPET	Peripheral insert SCET	Radial adjustment [mm] -	+
.669	17	68	**804D-17-68-S25**	●	149	93	56	73	25	35	0502AP	0502..	0.10	0.50
.709	18	72	**804D-18-72-S25**	●	153	97	56	77	25	35	0602AP	0502..	0.35	0.25
.748	19	76	**804D-19-76-S25**	●	157	101	56	81.5	25	35	0602AP	0502..	0.15	0.45
.787	20	80	**804D-20-80-S25**	●	161	105	56	85	25	35	0602AP	0602..	0.10	0.45
.827	21	84	**804D-21-84-S25**	●	165	109	56	89.5	25	35	0602AP	0602..	0.10	0.50
.866	22	88	**804D-22-88-S25**	●	169	113	56	94	25	35	0703AP	0602..	0.45	0.50
.906	23	92	**804D-23-92-S25**	●	173	117	56	98.5	25	35	0703AP	0703..	0.35	0.50
.945	24	96	**804D-24-96-S25**	●	177	121	56	103	25	35	0703AP	0703..	0.15	0.50
.984	25	100	**804D-25-100-S32**	●	185	125	60	105	32	42	0703AP	0703..	0.15	0.50
1.024	26	104	**804D-26-104-S32**	●	189	129	60	109.5	32	42	0703AP	0703..	0.50	0.15
1.063	27	108	**804D-27-108-S32**	●	193	133	60	114	32	42	0903AP	0703..	0.50	0.30
1.102	28	112	**804D-28-112-S32**	●	197	137	60	118.5	32	42	0903AP	09T3..	0.30	0.50
1.142	29	116	**804D-29-116-S32**	●	201	141	60	123	32	42	0903AP	09T3..	0.20	0.50
1.181	30	120	**804D-30-120-S32**	●	205	145	60	127.5	32	42	0903AP	09T3..	0.15	0.50
1.378	35	140	**804D-35-140-S32**	●	225	165	60	149	32	42	11T3AP	1204..	0.25	0.50
1.575	40	160	**804D-40-160-S32**	●	245	185	60	171.5	32	42	12T3AP	1204..	0.20	0.50

● stocked as standard / ○ non stocked as standard
See price list for current availability.

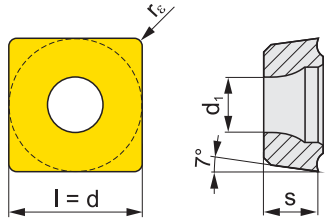
TYPE 804D (METRIC)

SPARE PARTS

Drill	Clamping screw - Centre insert 	Clamping screw - Peripheral insert 	Screwdriver 
∅**15** - ∅**17**	US 2245-T07P	US 2245-T07P	FLAG T07P
∅**17.5** - ∅**19**	US 2205-T07P	US 2245-T07P	FLAG T07P
∅**19.5** - ∅**21**	US 2205-T07P	US 2205-T07P	FLAG T07P
∅**21.5** - ∅**22**	US 2506-T07P	US 2506-T07P	FLAG T07P
∅**22.5** - ∅**26**	US 2507-T08P	US 3007-T08P	FLAG T08P
∅**26.5** - ∅**27**	US 3007-T09P	US 3007-T09P	FLAG T09P
∅**28** - ∅**31**	US 3007-T09P	US 3009-T09P	FLAG T09P
∅**35** - ∅**43**	US 3510-T15P	US 5012-T15P	FLAG T15P

● stocked as standard / ○ non stocked as standard
See price list for current availability.

SCET

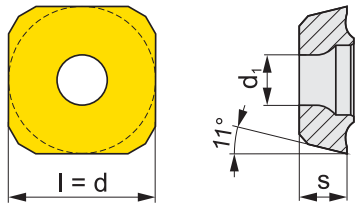


Dimensions	l	d	d_1	s		
0502	.219	.219	.094	.094		
0602	.250	.250	.094	.114		
0703	.312	.312	.125	.138		
09T3	.375	.375	.156	.177		
1204	.500	.500	.187	.220		
1505	.625	.625	.219	.220		

All dimension [in].

Chip breaker	ISO	Grades																
		D8345																
	XPET 0502AP	●																
	XPET 0602AP	●																
	XPET 0703AP	●																
	**XPET 0903AP**	●																
	XPET 11T3AP	●																
	XPET 12T3AP	●																
	XPET 1504AP	●																
	XPET 1904AP	●																

XPET



Dimensions	l	d	d_1	s		
0502	.219	.219	.094	.094		
0602	.250	.250	.094	.102		
0703	.312	.312	.125	.114		
0903	.375	.375	.125	.138		
11T3	.453	.453	.156	.154		
12T3	.500	.500	.156	.154		
1504	.625	.625	.187	.177		
1904	.750	.750	.187	.177		

All dimension [in].

Chip breaker	ISO	Grades																Radius
		D8330	D9335															r_ε
	SCET 050204-UD	●	●															.016
	SCET 060204-UD	●	●															.016
	**SCET 070308-UD**	●	●															.031
	SCET 09T308-UD	●	●															.031
	SCET 120408-UD	●	●															.031
	SCET 150512-UD	●	●															.047

PRAMET

● stocked as standard / ○ non stocked as standard
See price list for current availability.

TECHNICAL INFORMATION

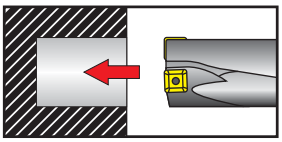
802D, 803D

Workpiece material group	D9335		D8330		D8345	Feed f [in.rev^{-1}]					
		V_c [ft.min^{-1}]		V_c [ft.min^{-1}]		∅ .5905	∅ .7875	∅ .9845	∅ 1.181	∅ 1.575	∅ 2.2835
P1	■	1100	■	885	■	.0028	.0032	.0036	.0040	.0047	.0063
P2	■	820	■	655	■	.0044	.0051	.0059	.0067	.0083	.0110
P3	■	655	■	525	■	.0051	.0059	.0071	.0079	.0095	.0126
P4	■	490	■	395	■	.0047	.0055	.0063	.0071	.0087	.0118
M1	■	460	■	425	■	.0047	.0055	.0063	.0071	.0087	.0118
M2	■	445	■	410	■	.0044	.0051	.0059	.0067	.0083	.0110
M3	□	410	□	375	□	.0028	.0032	.0036	.0040	.0047	.0063
M4	□	395	□	360	□	.0028	.0032	.0036	.0040	.0047	.0063
K1	■	625	■	490	■	.0055	.0063	.0075	.0083	.0103	.0134
K2	■	605	■	475	■	.0055	.0063	.0075	.0083	.0103	.0134
K3	■	575	■	445	■	.0055	.0063	.0075	.0083	.0103	.0134
K4	■	540	■	425	■	.0055	.0063	.0075	.0083	.0103	.0134
N1	-	-	-	-	-	-	-	-	-	-	-
N2	□	970	□	855	□	.0051	.0059	.0071	.0079	.0095	.0126
N3	□	885	□	785	□	.0051	.0059	.0071	.0079	.0095	.0126
N4	□	590	□	525	□	.0047	.0055	.0063	.0071	.0087	.0118
S1	-	-	-	-	-	-	-	-	-	-	-
S2	□	150	□	130	□	.0032	.0036	.0040	.0044	.0055	.0071
S3	□	115	□	100	□	.0028	.0032	.0036	.0040	.0047	.0063
S4	□	100	□	80	□	.0028	.0032	.0036	.0040	.0047	.0063
H1	■	195	■	180	■	.0036	.0044	.0047	.0055	.0067	.0091
H2	■	180	■	165	■	.0036	.0040	.0044	.0051	.0063	.0083
H3	□	165	□	150	□	.0032	.0036	.0040	.0044	.0055	.0071
H4	□	165	□	150	□	.0028	.0032	.0036	.0040	.0047	.0063

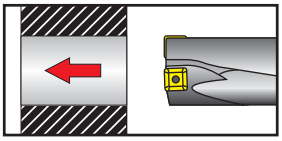
804D

Workpiece material group	D9335		D8330		D8345	Feed f [in.rev^{-1}]					
		V_c [ft.min^{-1}]		V_c [ft.min^{-1}]		∅ .5905	∅ .7875	∅ .9845	∅ 1.181	∅ 1.575	∅ 2.2835
P1	■	1100	■	885	■	.0024	.0028	.0032	.0036	.0040	.0055
P2	■	820	■	655	■	.0040	.0047	.0055	.0063	.0075	.0099
P3	■	655	■	525	■	.0047	.0055	.0063	.0071	.0087	.0118
P4	■	490	■	395	■	.0044	.0051	.0059	.0067	.0083	.0110
M1	■	460	■	425	■	.0044	.0051	.0059	.0067	.0083	.0110
M2	■	445	■	410	■	.0040	.0047	.0055	.0063	.0075	.0099
M3	□	410	□	375	□	.0024	.0028	.0032	.0036	.0040	.0055
M4	□	395	□	360	□	.0024	.0028	.0032	.0036	.0040	.0055
K1	■	625	■	490	■	.0051	.0059	.0071	.0079	.0095	.0126
K2	■	605	■	475	■	.0051	.0059	.0071	.0079	.0095	.0126
K3	■	575	■	445	■	.0051	.0059	.0071	.0079	.0095	.0126
K4	■	540	■	425	■	.0051	.0059	.0071	.0079	.0095	.0126
N1	-	-	-	-	-	-	-	-	-	-	-
N2	□	970	□	855	□	.0047	.0055	.0063	.0071	.0087	.0118
N3	□	885	□	785	□	.0047	.0055	.0063	.0071	.0087	.0118
N4	□	590	□	525	□	.0044	.0051	.0059	.0067	.0083	.0110
S1	-	-	-	-	-	-	-	-	-	-	-
S2	□	150	□	130	□	.0028	.0032	.0036	.0040	.0047	.0063
S3	□	115	□	100	□	.0024	.0028	.0032	.0036	.0040	.0055
S4	□	100	□	80	□	.0024	.0028	.0032	.0036	.0040	.0055
H1	■	195	■	180	■	.0036	.0040	.0044	.0051	.0063	.0083
H2	■	180	■	165	■	.0032	.0036	.0040	.0044	.0055	.0071
H3	□	165	□	150	□	.0028	.0032	.0036	.0040	.0047	.0063
H4	□	165	□	150	□	.0024	.0028	.0032	.0036	.0040	.0055

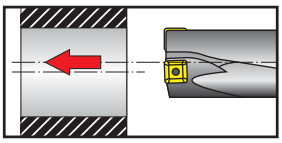
Clamping screw	Torque [lbf.ft]	Screwdriver	Clamping screw	
			Thread	Lenght [in]
US 2505-T08P	.89	FLAG T08P	M 2,5	.20
US 2505-T08P	.89	FLAG T08P	M 2,5	.20
US 4008-T15P	2.58	FLAG T15P	M 4	.31
US 4011-T15P	2.58	FLAG T15P	M 4	.43
US 4008-T15P	2.58	FLAG T15P	M 4	.31
US 63511D-T15P	2.21	FLAG T15P	M 3,5	.43
US 63511D-T15P	2.21	FLAG T15P	M 3,5	.43
US 2506-T07P	.89	FLAG T15P	M 2,5	.24
US 2506-T07P	.89	FLAG T15P	M 2,5	.24
US 4008-T15P	2.58	FLAG T15P	M 4	.31



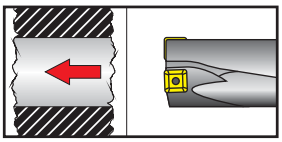
BLIND HOLE DRILLING
Do not use chamfer drills.



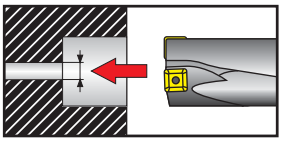
THROUGH HOLE DRILLING
Do not use chamfer drills.
A disc can be produced when the indexable drill exits the material, this disc can be ejected at high speed when the workpiece is rotating. It is essential that the machine is adequately guarded to ensure operator safety



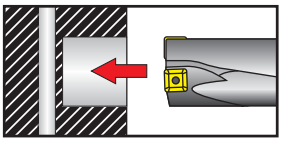
OFF-CENTER DRILLING
Decrease the feed for indexable drills.
Do not exceed radial adjustment values.



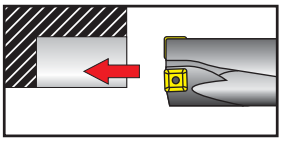
STARTING ON UNEVEN AND CAST SURFACES
Decrease the feed on entrance for indexable drills until both inserts are engaged.
Starting surface must be faced before using a solid drill.



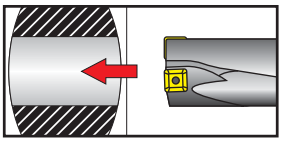
BORING AND DRILLING INTO CENTER DRILLED HOLE
If a pre-drilled hole is larger than 1/4 drill diameter, decrease the feed.



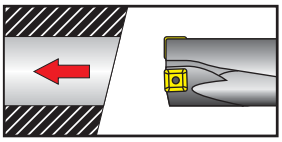
DRILLING ACROSS AN EXISTING HOLE
Decrease the feed when drilling across an existing hole.



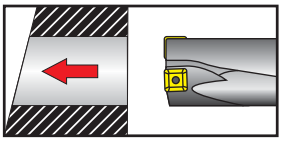
INTERRUPTED CUT AND PLUNGING
Decrease the feed for indexable drills.



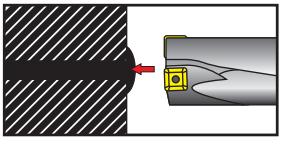
DRILLING ON CURVED SURFACE
Centered drilling can be started with reduced feed rate.
Spot facing is required for solid drills when the point for starting the hole is outside the radius center.



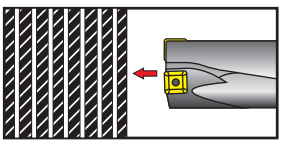
STARTING ON ANGLED SURFACE
Decrease the feed on entrance for indexable drills until both inserts are engaged if angle of entrance is more than 5°.



ANGLED BORE EXIT
Decrease the feed on exit if angle of exit is more than 5°.



STARTING ON A WELDED SEAM
Facing is recommended before the start of drilling. Decrease the feed until drilling welded material.



DRILLING OF STACKED MATERIALS
Avoid spaces larger .008 in between elements. The component must be securely fixed. If necessary reduce the feed.

RADIAL ADJUSTMENT

Hole diameter adjustment and set-up recomendation

Radial adjustment is possible with insert drills to achieve a smaller or larger hole diameter than the actual drill.

Radial adjustment values are available in the main drill data tables.

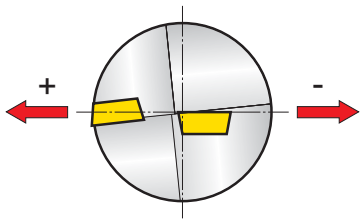
Rotating tool

Adjustable holder is recommended for precision hole diameter IT10 setting when using line 80×D as rotating drills.

Stationary tool

When mounting the drill make sure the drill centre line and workpiece centre are aligned.

To achieve a larger hole diameter displace the drill so that the peripheral insert moves in a + direction from the workpiece centre line.

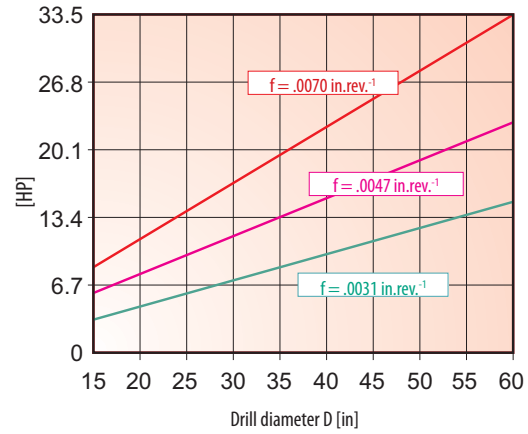


TOOL LIFE

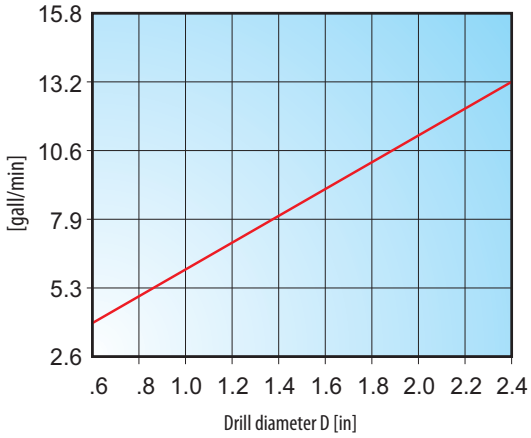
Inserts should not be used with flank wear exceeding .008 - .016 in measured at the largest point. Cutting data recommendations in this catalogue are aimed at achieving tool life of 23 feet drilling depth on the peripheral insert (20 - 30 mins contact).

RECOMMENDED PRESSURE OF SUPPLIED CUTTING FLUID

Drill diameter **D** [in]	Pressure of cutting fluid **p**	
	Drill length	
	2.0 ÷ 2.5 D	**3.0 ÷ 5.0 D**
.6 ÷ 1	87 psi	174 psi
1 ÷ 1.6	65 psi	130 psi
> 1.6	43 psi	87 psi



NET POWER CONSUMPTION



COOLANT VOLUME REQUIREMENT

DRY DRILLING

It is possible to drill without coolant in cast iron and steel, pressurised air through the drill is required.

TROUBLESHOOTING FOR INDEXABLE DRILLS, NOMENCLATURE AND FORMULA

LOW PERFORMANCE OF DRIVING MOTOR (LOW TWISTING MOMENT AT SPINDLE)

a) reduce cutting speed
b) reduce feed

CHIPPING OF CENTER INSERT

a) reduce feed on entry
b) check the drill and work piece clamping

EXCESSIVE WEAR OF EDGE OF PERIPHERAL CUTTING INSERT

a) reduce cutting speed
b) select a more wear resistant grade
c) increase coolant volume and pressure

CONTINUOUS, BADLY FORMED CHIP

a) change the feed
b) increase the cutting speed and simultaneously reduce the feed

CHIPPING OF PERIPHERAL INSERT

a) reduce feed during drilling (especially on entry in uneven surfaces)
b) select a tougher insert grade
c) reduce the cutting speed

CROWDING OF SHORT CHIPS IN THE PERIPHERY GROOVES

a) increase coolant volume and pressure
b) reduce the cutting speed
c) change the feed

NOMENCLATURE AND FORMULAE

Parameter	Formulae	Unit
RPM	$n = \frac{v_c \cdot 12}{D \cdot \pi}$	[1.min^{-1}]
Cutting speed	$v_c = \frac{\pi \cdot D \cdot n}{12}$	[ft.min^{-1}]
Feed per minute (speed of feed)	$v_f = n \cdot f$	[in.min^{-1}]
Cross section area of the hole	$A = \frac{\pi \cdot D^2}{4}$	[inch^2]
Metal removal rate	$Q = f_{min} \cdot A$	[inch^3.min^{-1}]
Machining time	$T_c = \frac{L + h}{f_{min}}$	[min / pcs]

D Diameter of drill [in]
f Feed per revolution [in.rev^{-1}]
h Distance from drill point to workpiece before feeding [in]
L Depth of hole [in]

PRAMET

Correctly identifying the machined material is one of the most important factors when choosing the tool and the initial machining conditions. To facilitate this, the machined materials are divided into six basic groups, or into twenty-four subgroups, combining materials that qualitatively cause the same type of loading (straining) on the cutting edge and therefore a similar type of wear. Thus the first step is to assign the workpiece material to one of the (sub)groups - see table below.

Group	Subgroup	Subgroup definition	Example ANSII/SAE	Correction to standard	DORMER AMG	VDI 3323
P	P1	Steel and cast steel with very good (enhanced) machinability; automatic steel and low-carbon steel	1213	1.33	1.1, 1.2	1
	P2	Non-alloy and low-alloy cast steel and steel with a medium carbon content (.25<C<.55); rigidity of up to 900 MPa and hardness of 160-255 HB	Gr.1043	1.00	1.3	2, 3, 6
	P3	Less machinable non-alloy and low-alloy cast steel and steel with a medium carbon content; rigidity of up to 1000 MPa and hardness of up to 300 HB	Cl. A	.80	1.4	4, 5, 7, 8, (10)
	P4	Medium- to high-alloy cast steel and steel (usually with a carbon content of.55 <C); rigidity of up to 1270 MPa and hardness of up to 375HB (resp. 40 HRC)	D3	.60	1.5	9, (10), 11
M	M1	Ferritic corrosion-resistant steel	Type 430	1.09	2.1	12
	M2	Martensitic corrosion-resistant steel	440 C	1.06	(2.1,2.4)	13.1, 13.2
	M3	Austenitic corrosion-resistant steel	Type 321	1.00	2.2	14.1
	M4	Ferritic-austenitic (duplex) and super-austenitic corrosion-resistant steel	EV 12	.93	2.3, 2.4	14.2, 14.3, 14.4
K	K1	Grey cast iron	C1.35B	1.00	3.1, 3.2	15, 16
	K2	Tempered cast iron	Gr.45006	.95	3.1, 3.2	-
	K3	Ductile cast iron ferritic and ferrite-pearlite	Gr.60-40-18	.90	3.3	17, 19
	K4	Ductile cast iron pearlite-ferritic, pearlite-sorbitic and pearlite	Gr.100-70-03	.85	3.4	18, 20
N	N1	Aluminium and its soft alloys (with a low Si content), particularly formed and cast (non-hardened); hardness of up to 100 HB	A96061	1.00	7.1	21, 22
	N2	Hard Al alloys, particularly cast and hardened (with a high Si content)	A04130	.65	7.2, 7.3, 7.4	23, 24, 25
	N3	Soft Cu alloys, automatic brass and other types of soft brass and bronze	C83600	.60	6.1,6.2, 6.3	26, (27)
	N4	Less machinable and hard Cu alloys	C95200	.40	6.4	(27), 28
S	S1	Technically pure Ti, alloys α , $\alpha+\beta$ and b, refined and aged alloys	TiAl6V4, AMS R56400	1.75	4.1, 4.2, 4.3	36, 37
	S2	Fe-based alloys	INCOLOY 800, B 163	1.20	(9.1)	31, 32
	S3	Ni-based alloys	INCONEL 718, AMS 5589	1.00	5.1, 5.2, 5.3	33, 34, 35
	S4	Co-based alloys	Haynes 25, AMS 5759	.75	(9.1)	33, 34, 35
H	H1	Highly rigid and hard tool steel and hardened and refined steel with a hardness of 40-50 HRC	T 4	1.15	1.6	38.1
	H2	Hardened and white cast iron 350-600 HV	Gr.1	1.10	-	40.1, 40.2 41.1, 41.2
	H3	Hardened and refined steel with hardness in the 50-55 HRC range	H11	1.00	1.7	38.2
	H4	Hardened and refined (mostly tool) steel with hardness of more than 55 HRC	D3	.95	1.8	39.1, 39.2

NOTES

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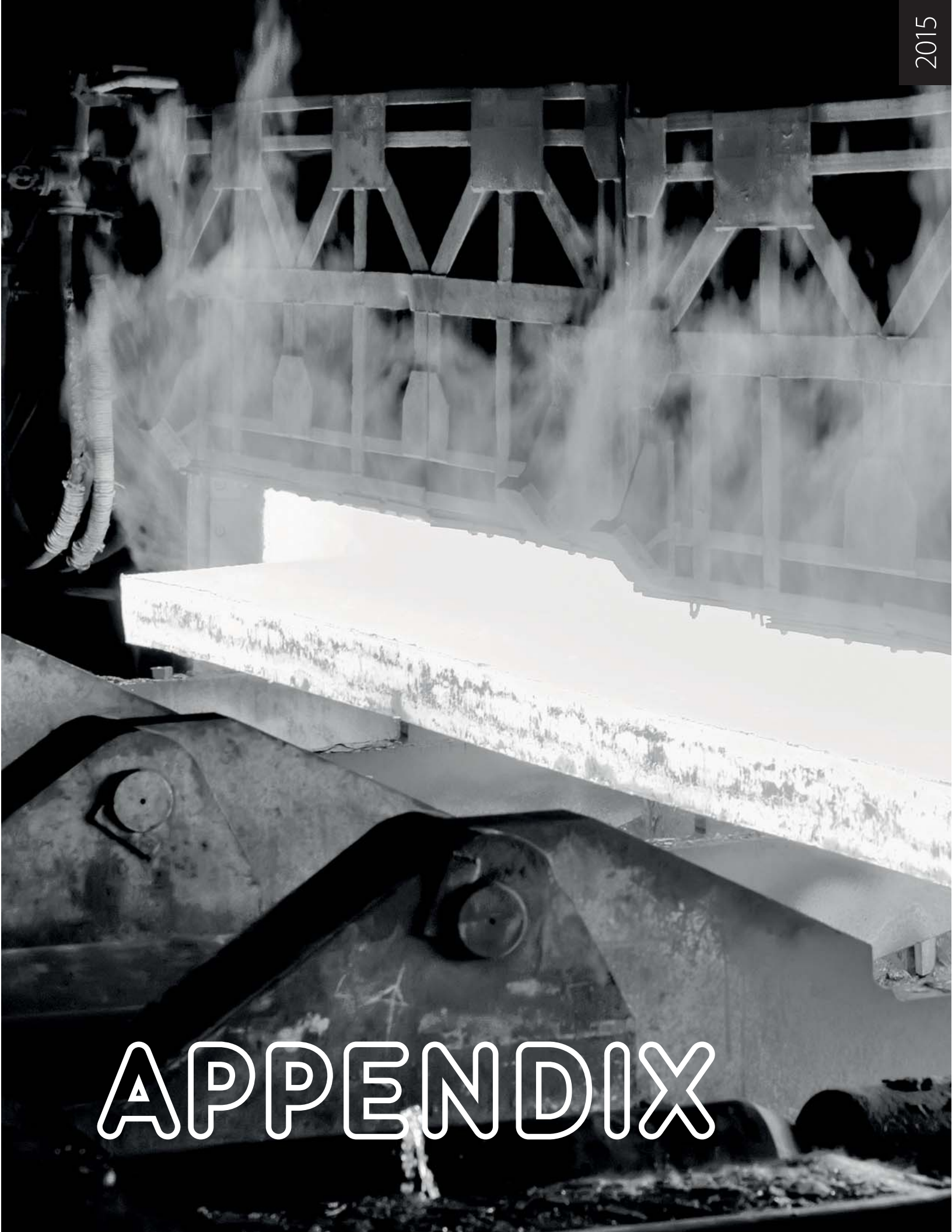

APPENDIX

ISO 513	Subgroup	International equivalents																
		CZ	PRC	EU	ISO	F	I	J	D	D	PL	A	RUS	S	GB	USA	E	
		ČSN	GB	EN	ISO	AFNOR	UNI	JIS	DIN	W.-nr	PN	ONORM	GOST	SS	BS	AISI/SAE		
P	1	10 000		S 185	Fe 310	A 33	Fe 320		ST 33.1			ST 00H	St 0	1300-00	S 185	Gr.A	S 185	
	1	10 004	Q 195	S 185	Fe 310-0	A 33	Fe 320		St 33-2	1.0035	St 0 S	St 00 H	St 0	1300	15 HR, HS	Gr.A	AE 235 B	
	1	10 216		Fe B22		Fe E24			IG				A I					
	1	11 109		11SMn28	Type 2	S 250	CF 9 SMn 28	SUM 22	9SMn28	1.0715	A 10X			1912-04	230M07	1213	11SMn28	
	1	11 110	Y12	10S20		10F1	CF10S20		10S20	1.0721	A11		A12	1912	210M15	Gr.1108	10S20	
	1	11 120	Y20			20F2			22S20	1.0724								
	2	11 140	Y35	35S20	35S20	35 MF 6	CF 35 Smn 10		35S20		A 35		A 30	1957-03	212M36	1140	35 MnS 6	
	1	11 300					3CD5	SWRM6	D6-2	1.0314		UC6	05kp			Gr.1005		
	1	11 301		FeP 02	Cr 04			SPCD	USt 13	1.0333		St 03F		1146	2HR,HS,CR,CS	1008		
	1	11 304	08 F	FeP 03						USt 14	1.0336							
	1	11 305		FeP04	Cr 04	ES		SPCE	St14	1.0338	08J		08Ju	1147	1 HR,HS,CR,CS	A619	DC04	
	1	11 320			Cr 03	Fd 4			St 14	1.0322	08X		08kp	1144				
	1	11 321		DC 01	Cr 01	FeP 01	DC 01/FeP 01	SPCC	St 12			St 02F	08Ju	1142	DC 01/FeP 01	1008	DC 01	
	1	11 325						SPCE									AP 04	
	1	11 330			Cr 0			SPC Cl.2	St 3				08J		Cr 2			
	1	11 331		FeP01/DC01	CR1	DC01/FeP01	FeP01/DC01	SPCC	St2	1.0330		St02F		1142	3CR	366	FeP01/DC01	
	1	11 343	A3	S235JRG1		A34-2	Fe330	SS 330	St34-2	1.0028	St3SX	St34RG	16D	1312	CEW2BK	Gr.C	S235JRG1	
	1	11 353					Fe360	STKM12A	St35	1.0308	R35		10	1233	CFS3	1120		
	1	11 364		P235GH		A 37 AP,CP	FeE235	SPV 450	H 1	1.0345	St 36 K	St 35 KW	12K	1330	141-360	Gr.55	F.6304	
	1	11 366		P235GH	P 3	A 37 AP	Fe 360-1KG,KW	SGV 410	H I	1.0345	St 36K	St 35KW	12K	1330	141-360	Gr. A	A 37RCI	
	1	11 368			P 5	A 37 AP	Fe 360-1 KG	SGV 410	ASt 35			St 35 KW	15 K	1330			A 37 RBII	
	1	11 369				A37FP	Fe 360-2KG	STPL380	ASt35				15K	1332		Gr. 1	A37RBII	
	1	11 373		S235JRG1	Fe360 B	S235JRG1	Fe360BFU	STKM12A	USt37-2	1.0036	St3SX	St37F	St3kp	1311	Fe360B	Gr.C	S235JRG1	
	1	11 375	Q235C	S235JRG2	Fe360B	E24-2NE	S235JRG2	SS330	S235JRG2		St3S	RSt360B	St3sp	1312	S235JRG-2	Gr.36	S235JRG2	
	1	11 378		Fe37B1, FN, FU	Fe 360C	E 24-3	Fe 360C		St 37-3		St 3W	St 37TK	16D	1312	40 D	Gr.58	AE 235D	
	1	11 379		S235JRG2Cu					RSt 37-2 Cu3	1.0167	St 3 SCu							
	1	11 381				A37FP	Fe360-2KG		ASt35							Gr.55	A37RBII	
	1	11 416		P265GH	F 5	A 42 AP	Fe 410KG,KT,KW	SG 295	H II	1.0425	St 41 K	St 41 KW	16K	1430	151-400	Gr.A	A 42RCII	
	1	11 418		P265GH	F7	A 42F	P 265 GH	SG 295	St 45.8			St 41 KW	20K	1430	161-430	Gr.60	A 42RBII	
	1	11 419		P310NB		A 42 FP1	Fe 410-2KG		ASt 41	1.0437					224-400	Gr.60	A 42 RBII	
	1	11 423				E 28-2		SS 41	USt 42.2		St 3 SX	St 42 RG,RGT	VSt 4 kp,ps		43/25 HR,HS	1020		
	1	11 425	Q225A	S275JR		E28-2	Fe430B	SS400	RSt42-2		St4V	St42F	St4	1411	161-430	Gr.D	AE275B	
	1	11 428				E 28-3	Fe 430 C	SM 400 C	St 42-3		St 4 W	St 44 T	VSt 4 sp	1411	43 C	Gr.70	AE 275 D	
	1	11 431				A 42 F	Fe 410-2 KG,KW	SLA 2	ASt 41	1.0426	St 3M		20K		400-22	X 42	F.6310	
	1	11 443		Fe 42B	Fe 430B	E 28-2			St 44-2	1.0044			St 4sp		43B,C			
	1	11 453						STKM 13B	St 45		R 45				430	1035		
	1	11 474		P 295 NH	P 11	A 48 CP	Fe 460-1 KG		H IV	1.0445			16 GS		223-490	Gr.F		
	1	11 478		P 295 GH	P 11	A 48 FP	Fe 460-1 KG,KW	SG 365	ASt 45				14G2		224-460 B	Gr.B, C	P 295 GH	
	1	11 481		P295GH		A 48 AP,FP	Fe 510-1 KG,KW	SPV 315	ASt 45	1.0436		17Mn4KW	18K	2103	430 LT	X 46	A 47 RCI	
	1	11 483	16Mn	S355J2G3	Fe510D	E36-3	Fe 510	SM490	ST52-3	1.0570	G355	St52F	S345	2132	50C	Gr.50 type 1 až 4	S355J2G3	
	1	11 484				A 48FP1												
	2	11 500	Q275	E295	Fe490	A50	Fe490	SS490	St50-2	1.0050	St5	St50F	S285	2172	43/35 HS	Gr.50	A490-2	
	1	11 523	16Mn	Fe510	Fe510	E36-3	Fe510	SM520C	St52-3	1.0570	16G2	St510D	17GS	2132	50/35HR	Gr.15180	S355J2G3	
	1	11 529		S355J2G3Cu					St 52-3 Cu3	1.0585	1862 A-Cu		1062 BD					
	1	11 531		Fe 510 D2		A 52 FP	S355J2G4		ASt 52	1.0577					224-460	Gr.A	AE 355 D	
	2	11 550		S355J0Cu	R50-NBK		Fe 540	STKM 16 A	ST 55	1.0507	R 55		BSt 5 ps		CDS 7	1050		
	2	11 600		E355	Fe590	E335	E335	SM570	E335	1.0060	MSt6	St60F	St6sp	1650	E335	Gr.65	Fe590-2FN	
	3	11 700		E360	Fe690	A70	Fe690		St70-2	1.0070	St7	St70F	S375	1655	E360		E360	
	1	12 010	10	2C10	C10	XC10	C10	S9CK	C10	1.1121	10	RC12	08	1265	045A10	Gr. 1010,1011,M1010	C10k	
	1	12 011											08					
	1	12 014									E2		10880					
	1	12 014									E2		10880					

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ISO 513	Subgroup	International equivalents															
		CZ	PRC	EU	ISO	F	I	J	D	D	PL	A	RUS	S	GB	USA	E
		ČSN	GB	EN	ISO	AFNOR	UNI	JIS	DIN	W.-nr	PN	ONORM	GOST	SS	BS	AISI/SAE	
P	1	12 020	15	C15E	C15E4	C18RR	C15		C15	1.1141				1370-40	080M15	Gr.1016	C16k
	1	12 021			TS 5		C 14	STB 340	St 35.8	1.0305	K 10		10			Gr.A	
	1	12 022			TS 14		C 18	STB 410	St 45.8	1.0405	K 18		20		430	Gr.B	
	1	12 023	15	C15E	C15E4	XC15	C15	S15C	C15	1.1141	15	RC15	15		040A15	Gr.1015	
	1	12 024	20	C 22	C 25	XC 18	C 21	S 22C	C 22	1.0402	20		20	1450	070M20	1020	
	3	12 030	25	2C25	C25E4	XC25	C25	S28C	C25	1.0406	25		25		070M26	Gr.1025	C25k
	1	12 031	30	C 30	C 30 E4	XC 32	C 30	S 30 C	Ck 30	1.0528			30		080M32	1030	
	3	12 040	35	C35	C35E4	C35	C35	S35C	C35	1.0501	35	C35	35	1550	40HS	Gr.1035	C35
	3	12 041	40	C 40	C 40E4	XC 42 HI	C 40	S 40C	Ck 40	1.0511	40		40		080M40	1040	C 40
	1	12 042	35 B	C 35 BKD		38 B3	C 35 BKB	SWRCHB 234	35 B2								F.1295
	2	12 050	45	C45	C60E4	C45	C45	S45C	C45	1.0503	45	C45SW	45	1650	50HS	Gr.1043	C45k
	2	12 051	50	C 50	C50E4	XC 48 H1	C 50	S 50 C	Ck 50	1.1206			50	1674	080M50	1050	1 C 50
	3	12 060	55	C55	C55E4	C54	C55	S55C	C55	1.0535	55		50	1655	50	Gr.1055	C55
	4	12 061	60	2 C 60	C 60 E4	C 60	C 60	S 58 C	Ck 60	1.0601	60		60	1665	60 HS,CS	1060	C60
	2	12 071		1 CS67		C 68	C 67	S 70C-CSP	Ck 67				65		080A67	Gr.1070	
	2	12 081	75	1CS75	CS75	XC75	C75		Ck75	1.1248	75		75	1774	80HS	Gr.1078	
	3	12 090	85	2 CS 85	CS 85	C 90RR	C 85	SK 5-CSP	C 85E	1.1269	85		85		80HS,CS	1086	
	2	13 141	30Mn2	28Mn6	28Mn6	35M5	C28Mn	SCMn2	28Mn6	1.1165	30G2		30G2		120M36	Gr.1330	30Mn5
	2	13 151				45 S 7			46 Si 7	1.5024	45 S					9250	46 Si 7
	4	13 180							80Mn4		65G		70G				
	3	13 240	35SiMn			38MS5			37MnSi5	1.5122	35SG		35SG				
	3	13 242							42MnV7	1.5223							
	4	13 251		45Si7	Type 3	45S7			46Si7	1.5024	45S		50S2		250A53	9250	F. 1451
	4	13 270	60Si2Mn	60Si7		60S7	60Si7	SUP6	60Si7	1.5028	60S2		60S2		251A58	Gr.9260H	60Si7
	3	14 100	G Cr 15	100Cr6	Type 1-0	100C6	100Cr6	SUJ 2	100Cr6		LH 15		Šch 15	2258	534A99	52100	F.1310
	2	14 109	GCr 15	100Cr6	Type 1-0	100Cr6	100Cr6	SUJ 2	100Cr6	1.3505	LH 15		ŠCh15	2258	535 A99	52100	100Cr6
	1	14 120	15Cr	15Cr2	37Cr4	12C8		SCr 415	15Cr3	1.7015	15 H		15Ch		523M15	5015	
	2	14 140	35Cr	37Cr4	TYPE 2	37Cr4	38Cr4	SCr435H	37Cr4	1.7034	40H	41Cr4SP	38ChA	2245	530A36	Gr.5135	37Cr4
	3	14 160				55 C 3							50ChG				
	3	14 209	Cr9SiMn	100CrMn6	TYPE 3	100CM6		SUJ3	100CrMn6	1.3520	LH15SG		ŠCh15SG		535A99	Gr.2	100CrMn6
	1	14 220	15CrMn	16MnCr5	TYPE 5	16MC5	16MnCr5		16MnCr5	1.7131	15HG		18ChG	2127	527M17	No.5115	16MnCr5
	1	14 221	20CrMn	20MnCr5	Type 7	20MC5	20MnCr5	SMnC 420 H	20MnCr5	1.7147	18HGT		18ChG			5120	F.150.D
	1	14 223											18ChGT				
	3	14 230											27ChGR				
	3	14 231											30ChGT				
	3	14 240	35Mn2					SMn438	36Mn5	1.5067			35G2			Gr.1340H	
	3	14 260	60Si2CrA			54SiCr6	48Si7	SUP7	54SiCr6	1.7102	60S2		60S2ChA	2090	250A61	9260	
	3	14 331									30HGS		30ChGSA				
	3	14 340							34CrAl6	1.8504			38Ch2Ju				
	3	14 341									37HS		38ChS				
	1	15 020		16Mo3	F26,P26,TS26	15D3	15Mo3	STBA12	15Mo3	1.5415	16M	15Mo3KW		2912	240	Gr.A	16Mo3
	1	15 121	12CrMo	13CrMo4-5	F32,P32,TS26	15CD4-5	14CrMo3	SFVAF12	13CrMo4-4	1.7335	15HM	13CrMo44KW	12ChM	2216	620-440	Gr.P12	14CrMo45
	1	15 124		18CrMo4	18CrMo4	18CrMo4	18CrMo4	SCM418	18CrMo4		18HGM		20ChM		708H20		18CrMo4-1
	1	15 128		13MoCrV6	TS33,P33,F33				14MoV6-3	1.7715	13HMF				660-460	Gr.P24	13MoCrV6
	2	15 130	30CrMo	25CrMo4	25CrMo4	25CD4	25CrMo4	SCM 430	25CrMo4		25 HM	24CrMo5 S	20ChM	2225	708A25	4130	25CrMo4
	3	15 131	30CrMo	34CrMo4KD		25CD4	30CrMo4	SCM 420	34CrMo4	1.7220	26HM		30ChM	2225	708A25	4130	AM 34CrMo4
	2	15 142	42CrMo	41CrMo4	TYPE 3	42CD4	38CrMo4KB	SCM440	41CrMo4	1.7225	40HM	42CrMo4SP	38ChM	2244	708M40	Gr.4140	42CrMo4
	1	15 217	09CuPCrNi-A	S355J0WP	Fe 355W-1A	E 36W-A3	S355J0WP	SPA-H	9CrNiCuP 324	1.8962	10 H				WR 50A,B,C	Gr.1	
	1	15 221											15ChF			Gr.6118	
	1	15 223													CDS 109	Gr.B	
	2	15 230								1.7361							
	3	15 231							27MnCrV4	1.8162							

ISO 513	Subgroup	International equivalents																
		CZ	PRC	EU	ISO	F	I	J	D	D	PL	A	RUS	S	GB	USA	E
		ČSN	GB	EN	ISO	AFNOR	UNI	JIS	DIN	W.-nr	PN	ONORM	GOST	SS	BS	AISI/SAE	
P	2	15 236	25Cr2MoVA						24CrMoV55	1.7733			25Ch1MF				
	2	15 240											40ChFA			6135	
	2	15 241							42CrV6								
	2	15 260	50CrVA	51CrV4	TYPE 13	51CrV4	50CrV4	SUP 10	50CrV4	1.8159	50HF		50ChFA	2230	735A50	Gr.6150	51CrV4
	3	15 261							58CrV4	1.8159							
	1	15 313	12CrMo	10CrMo9-10	P34, TS34,F34	10CD9.10	12CrMo910	SCMV4	10CrMo9-10	1.7380	10H2M	10CrMo910KW		2218	622	Gr.P22	12CrMo910
	3	15 320					24CrMoV55		24CrMoV55	1.7733		24CrMoV55	20ChMFL		671-850		
	1	15 323							17CrMoV10	1.7766							
	2	15 330					31CrMoV10		30CrMoV9	1.7707	30H2MF		30Ch3MF				31CrMoV10
	3	15 340	38CrMoAl			40CAD 6.12	41CrAlMo7	SACM 645	41CrAlMo7	1.8509	38HMJ		38Ch2MJuA		905M39	Cl. A	41CrAlMo7
	3	15 341			42CrMo4			SCM 4	42CrMo4								
	1	15 412							10CrMo11	1.7276							
	1	15 423							20CrMoV 1 3 5	1.7779							
	1	16 220	12CrNi2	15NiCr6		16NC6	16CrNi4		15CrNi6	1.5713	15HN		12ChN2	2512	815M17	Gr.4320	16NiCr4
	1	16 222				1,5 Ni											
	1	16 231				20NC6	20CrNi4		19CrNi8				20Ch2N4A		822M17	3120	
	3	16 240				35NC6		SNC 236	36NiCr6	1.5710			40ChN			3135	
	1	16 320					18Ni14						12ChN3		En 33		
	3	16 341		36CrNiMo4		40NCD3	38NiCrMo4KB	SCNM439	36CrNiMo4		36HNM		40ChN2MA		817A37	Gr.9840	35NiCrMo4
	3	16 342		34CrNiMo6	36CrNiMo6	35NCD6	35NiCrMo6 KB	SNCM 447	34CrNiMo6				40ChNMA		817M40	4340	
	3	16 343		34CrNiMo6	Type 3	35NCD6	35CrNiMo6	SNCM 447	34CrNiMo6	1.6582	34 HNM		38Ch2N2MA	2541	817M40	4340	34CrNiMo6
	1	16 420				13NiCr14		SNC815	14NiCr14	1.5752			12Ch2N4A		655H13	E3310X	
	3	16 431							26NiCrMo8-5	1.6931							
	3	16 440				30NC12		SNC 836	31NiCr14	1.5755	37HN3A		30ChN3A				
	3	16 444		34CrNiMo6	Type 3	35NCD6	35NiCrMo6 KB	SNCM 447	34CrNiMo6		34HNM		36Ch2N2MFA	2541	817M40	4340	34CrNiMo6
	3	16 532									30HGSNA		30ChGSN2A				
	3	16 540											34ChN3MA				
	3	16 640				40NC17			35NiCr18						835M30		
	1	16 720									18H2N4WA		18Ch2N4MA				
	1	19 065							C35W3								
	2	19 083				Y342			C45W3	1.1730		K945					F5131
	2	19 103				Y355		SK7	C60W3	1.1740	N5	K960					
	2	19 125				Y3 65		SK 7	C67W	1.1744	N6						
	2	19 132	T7	CT70	C70 U	C70 E2U	C70 KU	SK 6	C 70 W2		N7	K 970	U7-1			W 1-7	F.5103
	2	19 133	T7	CT70	C70U	Y170	C70KU	SK6	C70W	1.1620	N7	K970	U7				C70U
	2	19 152	T8	CT80	C80U	Y180	C80KU	SK5	C80W2	1.1625	N8	K980	U8-1		BW1A	W1Gr.A	C80U
	2	19 191	T10A	CT105	C105U	C105E2U	C100KU	SK3	C105W1	1.1645	N10E	K990	U101	1880	BW1B	W5	C102U
	2	19 192	T 10	CT 105	C 90 U	C 105 E2U	C 100 KU	SK 3	C 105 W2		N 10	K990	U 10-1			W 110	F.5117
	3	19 221	T11	CT120	C120U	Y2120	C120KU		C110W2	1.1654	N12	K990	U12-1		BW1C		F-5123
	4	19 255		CT 120	TC 120	C120 E3U	C120 KU	SK 2	C125 W	1.1663	N 12	K 995	U 13-1			W 112	C120 U
	3	19 312		90MnV8	90MnCrV8	90MnV8	90MnVCr8KU		90MnCrV8	1.2842	NMV	K720	9G2V		B02	02	90 MnCrV 8
	3	19 313		90MnV8	90MnCrV8	90MnV8	90MnVCr8 KU		90MnCrV8		NMV	K 720	9GF2		BO 2	02	90MnCrV8
	3	19 340		60SiMn7		60Si8	56SiMn7 KU		70SI7					No 22			
	2	19 356		100 V2	TCV 105	C 105 E2 UV1	102 V2 KU	SKS 43	100 V1	1.2833	NV	K 760			BW 2	W 210	100 V2
	3	19 418							80CrV5		NCV 1		8Ch				80CrV2
	3	19 419							80CrV2		NCV 1		8Ch				80CrV2
	4	19 420	Cr 06			Y2 140 C		SKS 8	140Cr2	1.2008	NC 5	K 205	13Ch				140Cr2
	3	19 421		107CrV3			107CrV3KU		115CrV3	1.2210		K510				L2	120CrV2
	3	19 422							145Cr6		NC 6	K 505					
	2	19 423						SKC 11	90Cr3	1.2056			9ChF			L 2	
	2	19 426	9CV2						85Cr7			K 201	9Ch1				
	3	19 434		X21Cr13		X20Cr13	X21Cr13KU		X20Cr13 1.2082	1.2082							X20Cr13 F5261

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ISO 513	Subgroup	International equivalents															
		CZ	PRC	EU	ISO	F	I	J	D	D	PL	A	RUS	S	GB	USA	E
		ČSN	GB	EN	ISO	AFNOR	UNI	JIS	DIN	W.-nr	PN	ONORM	GOST	SS	BS	AISI/SAE	
P	3	19 435		X41Cr13	X40Cr14	X40Cr14	X41Cr13KU	SUS 420 J2	X42Cr13		4H13		40Ch13	2314	420S45		F.5263
	4	19 436		X210Cr12	C210Cr12	Z200C12	X205Cr12KU	SKD1	X210Cr12	1.2080	NC11	K100	Ch12		BD3	D3	X210Cr12
	4	19 437		X210CrW 12-1	X210CrW12	X210CrW 12-1	215CrW 12-1 KU		X210CrW12					2313			2313
	3	19 452				Y60SC7			58SiCr8	1.2103		K244					
	1	19 487							21MnCr5	1.2162							
	4	19 512				45CDV6	35CrMo8 KU		48CrMoV 6 7								
	4	19 520		35CrMo8	35CrMo7	40CrMnMo8	35CrMo8KU		40CrMnMo7		WLB						40CrMnMo7
	2	19 541		30CrMoV12-11	32CrMoV12-28	32CDV12-28	30CrMoV12-27KU	SKD7	X32CrMoV33	1.2365	WLV	W320	3Ch3M3F		BH10	H10	30CrMoV12
	3	19 552	4Cr5MoSiV	X37CrMoV5-1	X37CrMoV5 1	Z38CDV5	X37CrMoV51KU	SKD6	X38CrMoV5.1	1.2343	WCL	W300	4Ch5MFS		BH11	H11	X37CrMoSiV5
	3	19 553	4Cr5MoSiV	X37CrMoV5-1	X37CrMoV5 1	Z38CDV5	X37CrMoV51KU	SKD6	X38CrMoV5.1	1.2343	WCL	W300	4Ch5MFS		BH11	H11	
	3	19 554	4Cr5MoSiV1	X40CrMoV511	40CrMoV5 1	X40CrMoV5	X40CrMoV511KU	SKF61	X40CrMoV51	1.2344	WCLV	W302	4Ch5MF1S	2214	BH 13	H13	X37CrMoSiV5
	3	19 561														H 42	
	3	19 571	Cr5Mo1V	X100CrMoV 5 1	X100CrMoV5	Z100CDV5	X100CrMOV51KU	SKD 12	X100CrMoV 5 1		NCLV	K 305	9Ch5VF	2260	BA 2	A 2	F.5227
	3	19 572		X160CrMoV 12 1		Z160CDV12	C165CrMoV12KU	SKD 11	x165cRmOv 12			k 105	Ch12MF	2310		D 2	F.5211
	4	19 581														A7	
	3	19 614							55NiCr10	1.2718		K605		2550			F.5224
	3	19 642		40NiCrMoV16			40NiCrMoV16 KU		35NiMo16			W502			BP 30		35NiCrMo16
	3	19 655		40NiCrMo16	45NiCrMo16	40NCDV16	40NiCrMoV16KU		X45NiMo4II1.2	1.2767		K600					
	3	19 662	5CrNiMo	55NiCrMoV7		55NCDV7	44NiCrMoV7 KU	SKT 4	55NiCrMoV6	1.2711	WNL	W 502	5ChNM		BH 224/5	L 6	F.520.S
	3	19 663		55NiCrMoV7	55NiCrMoV7	55NCDV7	56NiCrMoV7KU	SKT4	56NiCrMoV7	1.2714	WNLV	W501	5ChNV		BH224/5	L6	55NiCrMoV7
	4	19 675							28NiCrMoV10	1.2740							
	4	19 680							X50NiCrWV 13-13								
	3	19 710	W					SKS 7M	120 W 4	1.2414	NW 1	K 405				F 1	F.5238
	3	19 711					110W4 KU	SKS 2	120 WV 4	1.2516			ChV 1		BF 1		F.520C
	3	19 712							110WCrV5				ChV6				
	3	19 714						SKS 11	X 130W5			K 400	ChV 4F			F 2	
	2	19 720	30W4Cr2VA	X30WCrV 5 3	30WCrV5	X32WCrV5	X30WCrV 5 3KU	SKD 4	30WCrV 5.3			W 105					
	3	19 721	3Cr2W8V	X30WCrV93	X30WCrV9-3	Z30WCV9	X30WCrV93KU	SKD5	X30WCrV9.3	1.2581	WWW	W100	3Ch2V8F		BH21	H21	X30WCrV9
	3	19 723									WWN 1	W-103			BH 21A		
	3	19 732		45WCrSiV8	50WCrV8	45WCV20	45WCrV8KU		45WCrV7	1.2542	NZ2	K450	50ChV2SF	2710	BS1	S1	45 WCrSiV8
	3	19 733		55WCrV8	60WCrV8	55WC20	55WCrV8 KU		60WCrV7		NZ 3	K 455	5ChV2S		BS 1	S 1	60WCrSiV8
	3	19 740							30 WCrV 151	1.2564	WWS 1	W 106					F.527
	3	19 802						SKH6	S 12-1-2	1.3318	SW12		R12F3				
	4	19 810				Z130WV 13.4			S 12-1-4	1.3302	SW12		R9F5				
	3	19 824	W18Cr4V	HSv18-0-1	HS 18-0-1	Z80WCV18-04-01	HS 18-0-1	SKH 2	HS 18-0-1	1.3355	SW18	S 200	R18	2750	BT1	T1	HS 18-0-1
	4	19 830	W6Mo5Cr4V2	HS 6-5-2	HS 6-5-2	Z85WDCV06-05-04-02	HS 6-5-2	SKH51	HS 6-5-2	1.3343	SW7M	S600	R6M5	2722	BM2	M2	HS 6-5-2
	4	19 852	W6Mo5Cr4V2Co5	HS 6-5-2-5	HS 6-5-2-5	Z85WDKCV06-05-04-02	HS 6-5-2-5	SKH55	HS 6-5-2-5	1.3243	SK5M	S705	R6M5K5	2723	BM35		HS 6-5-2-5
	4	19 855	W18Cr4VCo4	HS18-1-1-5		Z80WKCV 18-05-04-01	HS 18-1-1-5	SKH 3	HS 18-1-2-5			S 305	R18k5F2		BT 4	T 4	F.5530
	4	19 856											R9K5				
	4	19 858	W12Cr4V5Co5	HS12-1-5-5	HS12-1-5-5	HS 12-1-5-5	HS12-1-5-5	SKH 10	HS 12-1-4-5	1.3202	SK 5V	S 308	R13F4K5		BT 15	T 15	HS12-1-5-5
	4	19 861		HS 10-4-3-10		Z130WKCDV	HS 10-4-3-10	SKH57	HS 10-4-3-10	1.3207	SK10V	S700	R12F3K10M3-Š	2736	BT42		HS 10-4-3-10
	1	422630		C18D	20-40	20-40M	FeG400	SC37	GS38	1.0416	LII400	GS38	15L-I		AM1	Gr.N1	
	1	422633				A 42 C-M	FeG38VR	SC 360	GS-38.3	1.0416	L II 400	GS-38	15 L-III	1306	AM 1	Gr.N 1	
	1	422640			23-45	A 48 M1	FeG 45	SC 46	GS-45	1.0443	LII 400	GS-45	25 L	1305	161-430 A	N 1	
	1	422643			33-45	FB-M	GC20	SC450	GS-45	1.0443	L20	GS45	20L		430A	Gr.WCA	
	1	422650			26-52	E26-52-M	FeG49-1	SC480	GS-52	1.0551	LII500	GS52	30L		161Gr400A	Gr.N-2	
	2	422653															
	2	422660	ZG 310-570		30-57	30M6M	FeG 570	SCC 3	GS-60	1.0553	LII 600	GS-60	45L2	1606	A 3	Gr.80-40	
	2	422670				E26-52-M		SCC5	GS-62	1.0554			55L		AW3	Gr.105-85	
	2	422709				35M5		SCMn2	GS-20Mn5		L20G		35G		Gr.A	Gr.80-40	AM30Mn5
	1	422712				20 M 6 M	FeG 49-2	SCW 480	GS-20Mn5		L 20G		20 GL	2172	161-540 A	Gr.A	F.8310
	1	422713		G17Mn5		20 M5M			GS-16Mn5						G17Mn5	WCC	G17Mn5

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		CZ	PRC	EU	ISO	F	I	J	D	D	PL	A	RUS	S	GB	USA	E	
		ČSN	GB	EN	ISO	AFNOR	UNI	JIS	DIN	W.-nr	PN	ONORM	GOST	SS	BS	AISI/SAE		
P	1	422714		G-21 Mn5			G 22mN3	SCA 1	GS-20Mn5	1.1133	L20G	GS-21Mn5	20GL		Gr.A	LCB	AM 22Mn5	
	3	422715	Z640Mn			35M5		SCMn3	GS-36Mn5	1.1167			35G2				36Mn5	
	3	422719													Gr.A			
	3	422724											30ChGSFL					
	3	422726									L35HGS		35ChGSL					
	1	422733							GS 24CrV42									
	1	422744		GS-17CrMo55		15CD5-05M	G 15CrMo55	SCPH 21	GS-17CrMo55		L18HM	GS-17CrMo55	20ChMFL		621	Gr.WC6	AM-18CrMo05-05	
	1	422745		G17CrMoV511		15CDV4-10M		SCPH23	GS-17CrMo511		L15HMF	GS-17CrMoV511				Gr.9		
	3	422750											40 ChNL					
	1	422771				Z15CD 505-M	GX15CrMo5	SCPH 61					20Ch5ML		625	C 5	AM-X18CrMo5	
	4	422992											R9					

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ISO 513	Subgroup	International equivalents																
		CZ	PRC	EU	ISO	F	I	J	D	D	PL	A	RUS	S	GB	USA	E
		ČSN	GB	EN	ISO	AFNOR	UNI	JIS	DIN	W.-nr	PN	ONORM	GOST	SS	BS	AISI/SAE	
M	1	17 020	0Cr13	X6Cr13	TYPE 1	Z6C13	X6Cr13	SUS410S	X7Cr14	1.4000	0H13		08Ch13	2301	403S17	Type 403	X6Cr13
	1	17 021	1Cr12	X10Cr13	Type3	Z12C13	X12Cr13	SUS 410	X10Cr13	1.4006	1H13		12Ch13	2302	410S2	Type 410	X12Cr13
	2	17 022	2Cr13	X20Cr13	Type 4	X20Cr13	X20Cr13	SUS420J1	X20Cr13	1.4021	2H13		12Ch13	2302	420S37	Type 420	X20Cr13
	2	17 023	3Cr13	X30Cr13	Type 5	Z30Cr13	X30Cr13	SUS420J2	X30Cr13	1.4028	3H13		30Ch13	2304-03	420S45	Type 420	2304-03
	2	17 024	4C13	X39Cr13	Type 6	Z40C13	X40Cr14		X39Cr13	1.4031	4H13		40Ch13		X39Cr13	Type 420	X39Cr13
	2	17 029								1.4034							
	1	17 040	1Cr15	X6Cr17	Type 8	Z8C17	X8Cr17	SUS 430	X6Cr17	1.4016	H17		12Ch17	2320	430S18	Type 430	X6Cr17
	1	17 041	1Cr15	X8Cr17	TYPE 8	Z8C17	X8Cr17	SUS430	X6Cr17	1.4016	H17		12Ch17	2320	430S15	Type 430	X6Cr17
	2	17 042									H18		95Ch18			440 C	
	1	17 102	10MoCr50	5CrMo16	TS 37	Z10CD5-05	A16CrMo 25 5 KG, KW	SFVAB 5 A,B	12CrMo19 5	1.7362	H5M		15Ch5M		625	Type 501, 502	F.240B
	1	17 113		X10CrAlSi7		Z8CA7	X7AL		X10CrAlSi7	1.4713			15Ch6SJu				X10CrAl7
	2	17 115	4Cr9Si2	X 45CrSi8	TYPE 1	Z 45CS9	X 45CrSi8	SUH 1	X 45 CrSi 9.3	1.4718	H9S2		40Ch9S2		401S45	HNV 3	F.3220
	2	17 116			TS38		X12Cr9KG	SFVAF9	X12CrMo9-1					2203	629-470	Gr.F9	
	2	17 125	0Cr13Al	X10CrAl13	TYPE H3	Z 13C13	X 10CrAl12		X10CrAl13	1.4724	H13JS		10Ch13SJu			TYPE 405	F.3152
	2	17 134			TS40	Z21CDV12	X20CrMoNi201KG,KW		X20CrMoV121		23H11MNF	X22CrMoV121S		2317			
	2	17 153	1Cr25Ti			Z10C24	X16Cr26	SUH446	X8CrTi25				15Ch25T	2322		446	
	3	17 240	0Cr18Ni9	X5CrNi18-10	Type11	X5CrNi18-10	X5CrNi18-10	SUS304	X5CrNi18-10	1.4301	0H18N9	X5CrNi18-10S	08Ch18N10	2333-02	304S31	Type 304	X5CrNi1810
	3	17 241					X10CrNi18 09	SUS 302	X12CrNi 18 8	1.4300	1H18N9					302	
	3	17 242				Z10CN1809	X15CrNi1809		X12CrNi188		1H18N9		17Ch18N9		302S25	Gr.302	
	3	17 246	1Cr18Ni9Ti	X10CrNiTi18-10	TYPE 15	Z6CNT18-10	X8CrNiTi1811	SUS321	X12CrNiTi189	1.4878	1H18N9T	X6CrNiTi1810KKW	08Ch18N10T	2337-02	321S12	321	X6CrNiTi1810
	3	17 247	0Cr18Ni10Ti	X 6CrNiTi 18-10	TYPE 15	Z 6CNT 18-10	X 6CrNiTi 18 11	SUS 321	X 6CrNiTi 18 10	1.4541		X 6CrNiTi 18 10 S	08Ch18N10T	2337	321S31	Type 321	F.3523
	3	17 248	0Cr18Ni10Ti	X6CrNiTi18-10	Type 15	Z6CNT18-10	X6CrNiTi1811	SUS321	X6CrNiTi1810	1.4541	0H18N10T	X6CrNiTi1810KKW	08Ch18N10T	2337	321S31	Type 321	X6CrNiTi18-10
	3	17 249	00Cr19Ni10	X2CrNi 18 10	Type 15	Z3CN 18-11	X2CrNi 18.11	SUS 304	X2CrNi 19 11	1.4306		X2CrNi19 11 KKW	03Ch18N11	2352	304S11	304 L	X2CrNi 18 10
	3	17 251	1Cr20Ni14Si2	X 15CrNiSi 20 12	TYPE H13	Z 17CNS 20 12	X 16CrNi 23 14	SUH 309	X 15CrNiSi 20 12	1.4828	H20N12S2		20Ch20N14S2		309S24	TYPE 309	F.3312
	3	17 253	1Cr16Ni35	X12NiCrSi35-16	H17	Z12NCS37.18		SUH330	X12NiCrSi36-16		H16N36S2					330	X12CrNiSi36-16
	4	17 254											12Ch21N5T				
	3	17 255	1Cr25Ni20Si2	X8CrNi25-21	H16	Z8CN25-20	X6CrNi2520	SUS310S	X8CrNi25-21	1.4845	H25N20S2		20Ch23N18	2361	310S31	310S	X15CrNiSi25-20
	3	17 322											4Cr14Ni14W2Mo		331S42	Ev9	
	3	17 335											ChN35 VT				
	3	17 341			TS 63	Z6CND 17-13B	X5CrNiMo1712		X6CrNiMo1713	1.4919		X5CrNiMo17122S			316S51	TP316H	X5CrNiMo17122
	3	17 346	0Cr17Ni12Mo2	X 5CrNiMo 17 12 2	TYPE 20	Z 6CND 17.11	X 5CrNiMo 17 12	SUS 316	X 5CrNiMo 17 12 2	1.4401		X 5CrNIMo 17 12 2 KW		2347	316S31	TYPE 316	X 5CrNiMo 17 12 2
	3	17 347															
	3	17 348	0Cr18Ni12Mo2Ti	X6CrNiMoTi17-12-2	21	Z6CNDT17-12	X6CrNiMoTi17-12	SUS316Ti	X6CrNiMoTi17-12-2		H17N13M2T	X6CrNiMoTi17122S	10Ch17N13M2T	2350-02	321S12	316Ti	X6CrNiMoTi17122
	3	17 349	00Cr17Ni14Mo2	X2CrNiMo 17-12-2	Type 19	Z3CND 18-12-02	X2CrNiMo 17 12	SUS 316	X2CrNiMo 17 13 2	1.4404	00H17N14M2	X2CrNiMo 17 13 2KKW	03Ch17N14M2	2348	316S11	316 L	X2CrNiMo 17 13 2
	3	17 350	00Cr17Ni14Mo2	X2CrNiMo18-14-3	TYPE 19a	Z3CND 17-12-03	X2CrNiMo1713	SUS 316L	X2CrNiMo18-14-3	1.4435		X2CrNiMo18143KW	03Ch17N14M2	2353	316S14	TP316L	X2CrNiMo18143
	4	17 351			TYPE 7											TYPE 635	
	4	17 351.9			TYPE 7											TYPE 635	
	3	17 352	0Cr17Ni12Mo2	X3CrNiMo 17-13-3	Type 20a	Z7CND 18-12-3	X5CrNiMo 17 13	SUS 316	X5 CrNiMo 17 13 3	1.4436		X5CrNiMo 17 13 3 KW		2343	316S31	316	X5CrNiMo 17 13 3
	3	17 356	1Cr18Ni12Mo3Ti				X6CrNiMoTi17-13	316Ti	X10CrNiMoT18-12		H17N13M2T		08Ch17N13M2T		320S33	316Ti	
	3	17 436							X40MnCr18	1.3817							
	3	17 460								1.3965	1H17N4G9		12Ch17G9AN4			Gr.202	
	4	17 465	5Cr21Mn9Ni4N	X 53 CrMnNiN21 9	Type 9	Z 52 CMN 21.09	X 53CrMnNiN 21 9	SUH 35	X 53 CrMnNiN21 9	1.4871	50 H21G9N4		55Ch20G9AN4		349S54	EV 12	F.3217
	3	17 536							Ni 36	1.3912	FeNi36Pr		36N		NILO 36	NILO 36	
	4	17 618.4				Z120M12			X120Mn12	1.3401			110G13L	2183			
	1	422904	ZG1Cr13			Z6CN12-1M	GX12Cr13	SCS1	GX8CrNi13	1.4008			10Ch12NPL		410C21		
	1	422905	ZG1Cr13			Z12C13-M	G X12Cr13	SCS 1	G-X12Cr13		LOH 13		15 Ch13L		410C21	Gr.CA-15	F.8401
	2	422906	Z G2Cr13			Z20C13-M	G X30Cr13	SCS 2	G-X20Cr14	1.4027	LH 14		20Ch13 1		420C24	Gr.CA-40	F.8387
	2	422911	ZG1Cr17			Z20CN17-2	GX35Cr17		G-X22CrNi17						ANC 2	Gr.CB30	
	2	422912							G-X40CrSi17								
	2	422913				Z40C28 M		SCH 2	G-X40CrSi23		LH 26				452C11	Gr.HC	
	2	422914	Z GCr28			Z40C28-M	G X35Cr28	SCH 2	G-X70Cr29		LH 26		75Ch28L		452C11	Gr.HC	
	2	422916		G-X22CrMoV12-1					G-X22CrMoV12-1	1.4922		G-X22CrMoV12-1	20Ch12WNMFL			Gr.CA28MnV	

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		CZ	PRC	EU	ISO	F	I	J	D	D	PL	A	RUS	S	GB	USA	E
		ČSN	GB	EN	ISO	AFNOR	UNI	JIS	DIN	W.-nr	PN	ONORM	GOST	SS	BS	AISI/SAE	
M	2	422917		GX8CrNi12		Z6CN12-1M			GX8CrNi12			G-X8CrNi12	20Ch12WNMFL				
	4	422920	ZGMn13-1-4			Z120M12M	XG120Mn12	SCHMnH1 až 3	G-X120Mn13	1.3802	C120G13	AöMn10	110G13L		BW 10	B-1 až 4	AM-X120Mn12
	4	422921				Z120M12-M	G X120MnCr 12 02	SCMnH 11			L120G13H					Gr.C	
	3	422931	ZG1Cr18Ni9			Z6CN 18-10M	G X6CrNi 20 10	SCS 12	G-X10CrNi 18 8	1.4312	LH18N9		10Ch18N9L	2333	302C25	CF-16F	
	3	422932				Z 25 CN 20-10 M	G X30CrNi 20 10		G X25CrNiSi 18 9	1.4825					302C35	CF 20	
	3	422933				Z6CNNb1810-M	GX8CrNiNb2011	SCS21	G-X7CrNiNb189		LH18N9T	G-X5CrNiNb 189	10Ch18N9TL		347C17	CF-8C	AM-X7CrNiNb2010
	3	422934						SCH 12	G X40CrNiSi 22 9	1.4826	LH23N18C		40Ch24N12SL		309C30	HF	
	3	422936				Z40CN 25-12 M	G X35CrNi 25 12	SCH 13A	G-X40CrNiSi 25 12	1.4837			40Ch24N12SL		309C35	HH	
	2	422938											12Ch21N5G2STL				
	3	422941				Z 6CNDNb 18 12-M	G X6CrNiMoNb 20 11	SCS 22			LH18N10M2T	G-X5CrNiMoNb 18 10	10Ch18N12M3T		318C17	CF 3 MN	
	3	422942				Z6CND 18-12 M	G X6CrNiMo 20 11	SCS 14	G-X10CrNiMo 18 9	1.4410	LH18N10M2			2243	315C16	CF-8M	
	3	422944					G X35CrNi 28 09	SCH 17							309C40	HE	
	3	422952				Z40CN 25-20 M	G X40CrNi 26 20	SCH 22	G-X40CrNiSi 25 20	1.4848	LH25N19S2		20Ch25N19S2L		310C40	HK	F.8452
	3	422953									LH21N5		12Ch21N5G2SL				
	3	422955					G X50NiCr 39 19	SCH 20	G-X40NiCrSi 35 25						331C40	HU	
	3	422958				Z 6NCDV 25-20-04 M	G X5NiCrCuMo 29 21	SCS 15	G X7CrNiMoCuNb 18 18					2564		CN-7M	

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		CZ	PRC	EU	ISO	F	I	J	D	D	PL	A	RUS	S	GB	USA	E
		ČSN	GB	EN	ISO	AFNOR	UNI	JIS	DIN	W.-nr	PN	ONORM	GOST	SS	BS	AISI/SAE	
K	3	422303				FGS 370-71	GS 370-17	FCD 370	GGG-35.3		Zs 35022		VČ 38-17	0717-15	Gr.350/22		FGE 38-17
	3	422304			400-12	FGS400-12	GS400-12	FCD40	GGG40		Zs40015		VČ40	0717-00	Gr.420-12	Gr.60-40-18	FGE 42-12
	3	422305		GJS 500-7	500-7	FGS 500-7	GS 500-7	FCD 500	GGG-50		Zs 50007	GGG 500	VČ 50-2	0727-02	500/7	65-45-12	FGE 50-7
	4	422306			600-3	FGS600-3	GS600-3	FCD60	GGG60		Zs60003	GGG600	VČ60	0732-03	Gr.600/3	Gr.80-55-06	FGE60-2
	4	422307		GJS-700-2	700-2	FGS 700-2	GS 700-2	FCD 700	GGG-70		Zs70002	GGG-700	VČ 70-3	0737-01	Gr.700/2	100-70-03	FGE 70-2
	4	422308			800-2	FGS800-2	GS800-2	FCD80	GGG80		ZS80002		VČ80		Gr.800/2	Gr.120-90-02	FGE 80-2
	1	422410			Gr.100	Ft10	G10	FC-100	GG10		ZI100	GG100	SČ10	0110-00		Class 20B	FG10
	1	422415				FGL 150	G 15	FC 150	GG-15		ZI 150	GG 150	SČ 15	0115-00	Gr.150	C1.25B	FG 15
	1	422420		FG20	Gr.200	Ft20	G20	FC-20	GG20		ZI200	GG200	SČ20	0120-00	Gr.220	Class 30B	FG20
	1	422425				FGL 250	G 25	FC 250	GG-25		ZI 250	GG-250	SČ 25	0125-00		C1.35B	FG 26
	1	422430			Gr.300	Ft 30	G 30	FC 300	GG-30		Z1 300	GG-300	SČ 30	0130-00	Gr. 300	No. 45	FG 30
	1	422435				Ft35	G35	FC35	GG35		ZI350	GG-350	SČ35	0135-00	Gr.350	Class50B	FGG35
	1	422456				FBO							AČS-15		1C		
	1	422465									ZISi5		ŽČS5				
	1	422472											ŽČCh 2			Type D, C1.III	
	1	422481									ZIAL7Cr		ŽČJu7Ch2				
	2	422532				MN 32-8	B 32-12	FCMB 310			Zcc 32000		KČ 33-8	0815-00	B 310/10		Type B
	2	422533			B-35-10	MN35-10	B35-10	FCMB35	GTS35-10		Zcc35010	GTS-350	KČ35-10	0815-00	B35-12	Gr.32510	Type A
	2	422534															
	2	422536			W35-04	MB35-7	GMN35	FCMN34	GTW35-04		Zcb 35004	GTW-350			W35-04		Type B
	2	422540			W 40-05	MB 400-5	GMN 40	FCMW 370	GTW 40-05		Zcb 40005	GTW 400			W 40-05		42 2540
	2	422545			P45-06	MN 450-6	P45-06	FCMP 440	GTS 45-06		Zcp 45006	GTS-450	KČ 45-7	0854-00	P45-06	Gr.45006	Type E
	2	422555			P55-04	MN 550-4	P55-04	FCMP 540	GTS 55-04		Zcp55004		KČ 55-4		P55-04	6004	Type C

PRAMET

WORKPIECE MATERIALS CLASSIFICATION - GROUP N

ISO 513	Subgroup	International equivalents															
		CZ	PRC	EU	ISO	F	I	J	D	D	PL	A	RUS	S	GB	USA	E
		ČSN	GB	EN	ISO	AFNOR	UNI	JIS	DIN	W.-nr	PN	ONORM	GOST	SS	BS	AISI/SAE	
N	4	423001		Cu-ETP	Cu-ETP	Cu-a1	Cu9	C1100	E2-Cu58		Cu99,9E	Cu-E	Cu99,9	5010	C101	C110000	
	4	423001		Cu-ETP	Cu-ETP	Cu-a1	Cu9	C1100	E2-Cu58		Cu99,9E	Cu-E	Cu99,9	5010	C101	C110000	
	4	423001		Cu-ETP	Cu-ETP	Cu-a1	Cu9	C1100	E2-Cu58		Cu99,9E	Cu-E	Cu99,9	5010	C101	C110000	
	4	423001		Cu-ETP	Cu-ETP	Cu-a1	Cu9	C1100	E2-Cu58		Cu99,9E	Cu-E	Cu99,9	5010	C101	C110000	
	4	423001		Cu-ETP	Cu-ETP	Cu-a1	Cu9	C1100	E2-Cu58		Cu99,9E	Cu-E	Cu99,9	5010	C101	C110000	
	4	423001		Cu-ETP	Cu-ETP	Cu-a1	Cu9	C1100	E2-Cu58		Cu99,9E	Cu-E	Cu99,9	5010	C101	C110000	
	4	423001		Cu-ETP	Cu-ETP	Cu-a1	Cu9	C1100	E2-Cu58		Cu99,9E	Cu-E	Cu99,9	5010	C101	C110000	
	4	423001		Cu-ETP	Cu-ETP	Cu-a1	Cu9	C1100	E2-Cu58		Cu99,9E	Cu-E	Cu99,9	5010	C101	C110000	
	4	423001		Cu-ETP	Cu-ETP	Cu-a1	Cu9	C1100	E2-Cu58		Cu99,9E	Cu-E	Cu99,9	5010	C101	C110000	
	4	423004						C1821			Cu99,7G	Cu-C	M2				
	4	423005							C-Cu		Cu 99,56		M3		C107	C 14200	
	4	423016		CuSn6	CuSn6	CuSn6P		C5191	CuSn6		CuSn6	CuSn6	BrOF6,5-0,15	CuSn6	PB102	C51900	
	4	423018		CuSn8	CuSn8	CuSn9P	P-CuSn8	C5212	CuSn8		CuSn8	CuSn8	BrOF-0,2		PB104	C52100	CuSn8P
	4	423042		CuAl5As	CuAl5	CuAl6	P-CuAl5		CuAl5As		CuAl5As	CuAl5As	BrA5			C60800	CuAl5
	4	423044			CuAl9Mn2				CuAl9Mn2				BrAMc9-2				CuAl9Mn2
	4	423045			CuAl8Fe3								BrAZ9-4			C61900	
	4	423046		CuAl10Fe3Mn2	CuAl10Fe3				CuAl10Fe3Mn2		CuAl10Fe3Mn2	CuAl10Fe3Mn2	BrZMc10-3-1,5				CuAl10Fe3Mn2
	4	423047		CuAl10Ni5Fe4	CuAl10Ni5Fe4	CuAl9Ni5Fe3	P-CuAl10Fe5Ni5	C6301	CuAl10Ni5Fe4		CuAl10Ni5Fe4	CuAl10Ni5Fe4	BrAZN10-4-4		CA104	C63000	CuAl10Fe5Ni5
	4	423048															
	4	423053		CuSi3Mn1	CuSi3Mn1		P-CuSi3Mn1				CuSi3Mn1	CuSi3Mn	BrKMc3-1		CS101	C65500	CuSi3Mn1
	3	423058			CuCd1						CuCd1		BrKd1		C108	C16200	
	3	423064							CuNi30Mn								
	4	423065			CuNi44Mn1	CuNi44Mn	P-CuNi44Mn1		CuNi44Mn1		CuNi44Mn1	CuNi44Mn1	MNMc43-0,5				CuNi44Mn1
	3	423115			CuSn5												
	3	423119		CuSn10-C	CuSn10	CuSn8	G-CuSn10		G-CuSn10		CuSn10			CuSn10	CT1	C90700	CuSn10
	4	423120		CuSn11P-C	CuSn10P				CuSn10P		CuSn10P		Br 010F1		PB1		
	4	423120		CuSn11P-C	CuSn10P				CuSn10P		CuSn10P		Br 010F1		PB1		
	3	423121						C2	G-CuPb5Sn							C92700	
	3	423122		CuSn10Pb10-C	CuPb10Sn10	CuSn10Pb10	G CuPb10Sn10	LBC3	G-CuPb10Sn		CuPb10Sn10		Br010S10	CuPb10Sn10	LB2	C93700	CuPb10Sn10
	4	423123		CuSn12-C	CuSn12	CuSn12	G-CuSn12		G-CuSn12					CuSn12	PB2	C91700	CuSn12
	4	423123		CuSn12-C	CuSn12	CuSn12	G-CuSn12		G-CuSn12					CuSn12	PB2	C91700	CuSn12
	4	423123		CuSn12-C	CuSn12	CuSn12	G-CuSn12		G-CuSn12					CuSn12	PB2	C91700	CuSn12
	3	423135		CuSn5Zn5Pb5-C	CuPb5Sn5Zn5	CuSn5Pb5Zn5	G-CuSn5Zn5Pb5	BC6	G-CuSn5Zn5Pb		CuSn5Zn5Pb5		Br05C5S5	CuSn5Pb5Zn5	LG2	C83600	CuSn5Zn5Pb5
	3	423135		CuSn5Zn5Pb5-C	CuPb5Sn5Zn5	CuSn5Pb5Zn5	G-CuSn5Zn5Pb5	BC6	G-CuSn5Zn5Pb		CuSn5Zn5Pb5		Br05C5S5	CuSn5Pb5Zn5	LG2	C83600	CuSn5Zn5Pb5
	3	423135		CuSn5Zn5Pb5-C	CuPb5Sn5Zn5	CuSn5Pb5Zn5	G-CuSn5Zn5Pb5	BC6	G-CuSn5Zn5Pb		CuSn5Zn5Pb5		Br05C5S5	CuSn5Pb5Zn5	LG2	C83600	CuSn5Zn5Pb5
	3	423138			CuSn10Zn2		G-CuSn10Zn2	BC3	G-CuSn10Zn		CuSn10Zn2		Br010C2	CuSn10Zn2	B1	C90500	CuSn10Zn2
	3	423138			CuSn10Zn2		G-CuSn10Zn2	BC3	G-CuSn10Zn		CuSn10Zn2		Br010C2	CuSn10Zn2	B1	C90500	CuSn10Zn2
	4	423144											BrA9Mc2L				
	4	423144											BrA9Mc2L				
	4	423145		CuAl10Fe2-C	CuAl10Fe3	CuAl10Fe3	G-CuAl10Fe3	AlBC1	G-CuAl10Fe		CuAl10Fe3		BrA9Z3L	CuAl10Fe3	AB1	C95200	CuAl10Fe3
	4	423145		CuAl10Fe2-C	CuAl10Fe3	CuAl10Fe3	G-CuAl10Fe3	AlBC1	G-CuAl10Fe		CuAl10Fe3		BrA9Z3L	CuAl10Fe3	AB1	C95200	CuAl10Fe3
	4	423146									CuAl10Fe3Mn2		BrA10Zn3Mc2				
	4	423146									CuAl10Fe3Mn2		BrA10Zn3Mc2				
	4	423147		CuAl10Fe5Ni5-C	CuAl10Fe5Ni5	CuAl10Fe5Ni5		AlBC3	G-CuAl10Ni		CuAl10Fe4Ni4		BrAl10Z4N4L	CuAl10Fe5Ni5	AB2	C95500	CuAl10Fe4Ni5
	4	423147		CuAl10Fe5Ni5-C	CuAl10Fe5Ni5	CuAl10Fe5Ni5		AlBC3	G-CuAl10Ni		CuAl10Fe4Ni4		BrAl10Z4N4L	CuAl10Fe5Ni5	AB2	C95500	CuAl10Fe4Ni5
	3	423183							G-CuPb22Sn								
	3	423184			CuPb30			KJ3	CuPb30				BrS30				
	3	423200		CuZn5	Cu-Zn5	CuZn5		C21000	CuZn5		CuZn5		L 96		CZ125	Cu-5Zn	CuZn5
	3	423201		CuZn10	CuZn10	CuZn10	P-CuZn10	C2200	CuZn10		CuZn10	CuZn10	L90		CZ101	C22000	CuZn10
	3	423202		CuZn15	CuZn15	CuZn15	P-CuZn15	C2300	CuZn15		CuZn15	CuZn15	L85	CuZn15	CZ102	C23000	CuZn15
	3	423203		CuZn20	CuZn20	CuZn20		C2400	CuZn20		CuZn20	CuZn20	L80	CuZn20	CZ103	C24000	CuZn20
	3	423210		CuZn30	CuZn30	CuZn30	P-CuZn30	C2600	CuZn30		CuZn30	CuZn30	L70	CuZn30	CZ106	C26000	CuZn30

ISO 513	Subgroup	International equivalents																
		CZ	PRC	EU	ISO	F	I	J	D	D	PL	A	RUS	S	GB	USA	E	
		ČSN	GB	EN	ISO	AFNOR	UNI	JIS	DIN	W.-nr	PN	ONORM	GOST	SS	BS	AISI/SAE		
N	4	423212		CuZn33		CuZn33	P-CuZn33	C2680	CuZn33		CuZn33	CuZn33	L68				CuZn33	
	3	423213		CuZn36	CuZn37	CuZn36	P-CuZn37	C2720	CuZn37		CuZn37	CuZn37	L63	CuZn37	CZ108	C27400	CuZn37	
	4	423214		CuZn35Pb1	CuZn35Pb1	CuZn35Pb2	P-CuZn35Pb2	C3501	CuZn36Pb1,5		CuZn36Pb1,5	CuZn36Pb1,5	LS63-2		CZ 118	C34000	CuZn35Pb2	
	4	423220		CuZn40	CuZn40	CuZn40	P-CuZn40	C2801	CuZn40		CuZn40	CuZn40	L60		CZ109	C28000	CuZn40	
	4	423221		CuZn37Pb1	CuZn37Pb1	CuZn39Pb0,8	P-CuZn39Pb1	C3501	CuZn39Pb0,5				LS60-1	CuZn40Pb	CZ123	C36500	CuZn40Pb	
	4	423222		CuZn38Pb1	CuZn39Pb1			C3710	CuZn38Pb1,5		CuZn38Pb1,5	CuZn38Pb1	LS 59-1	CUZN38Pb1	CZ129	C37000	CuZn39Pb1	
	4	423223		CuZn39Pb2	CuZn40Pb2	CuZn39Pb2	P-CuZn40Pb2	C3771	CuZn40Pb2		CuZn40Pb2		LS 60-2	CuZn40Pb2	CZ 120	C37700	CuZn39Pb2	
	4	423231			CuZn39AlFeMn		CuZn39Al1FeMn1	C6782	CuZn40Al1		CuZn39Al1Fe1Mn1	CuZn37Al					CuZn39Al1FeMn	
	4	423234		CuZn40Mn2Fe1					CuZn40Mn2		CuZn40Mn1,5		Lmc58-2		CZ136			
	4	423237		CuZn38Sn1AS	CuZn38Sn1	CuZn38Sn1	P-CuZn39Sn1	C4640	CuZn38Sn1		CuZn38Sn1	CuZn39Sn	LO60-1		CZ 112	C46400	CuZn38Sn1	
	4	423256			CuNi15Zn21	CuNi15Zn22					CuNi15Zn21		MNC15-20		NS105		CuNi15Zn21	
	4	423303		CuZn16Si4-C				SzBC2	G-CuZn15Si4		CuZn16Si3,5		LC15K4			C87500		
	4	423311		CuZn25Al5Mn4Fe3-C	CuZn25Al6Fe3Mn3	CuZn19Al6Y20		HBsC4	G-CuZn25Al5				LC23AŽ3Mc			C86200	CuZn25Al6FeMn3	
	3	423313		CuZn33Pb2-C	CuZn33Pb2	CuZn33Pb-Y20	G-CuZn34Pb2	YBsC2	G-CuZn33Pb					CuZn33Pb2	SCB3		CuZn33Pb	
	3	423319					G-CuZn40											
	4	423320														C86500		
	4	423321		CuZn37Al1-C		CuZn40Y40	G-CuZn38Pb2	YBsC3	G-CuZn37Al1				LC40S	CuZn39Pb2Al	DCB1	C85800	CuZn40Pb	
	4	423322		CuZn32Al2Mn2Fe1-C	CuZn35AlFeMn	CuZn30AlFeMn	G-CuZn38Al1Fe1Mn1	HBsC1	G-CuZn34Al2		CuZn38Al2Mn1Fe			CuZn35AlFeMn	HTB1	C86400	CuZn35AlFeMn	
	1	424002		AW-Al99,8 (A)	Al99,8 (A)	1080A	P-Al99,8	1080A	Al99,8		Al99,8	Al99,8	AD000		1080A		Al-99,8 (A)	
	1	424003		AW-Al99,7	Al99,7	1070A	P-Al99,7	1070	Al99,7		Al99,7	Al99,7	AD00	Al99,7			Al-99,7	
	1	424004		AW-EAl99,5	E-Al99,5				E-Al		Al99,5E	E-Al	ADOE	EAl99,5	1350	1350	Al 99,5E	
	1	424005		AW-Al99,5	Al99,5	1050A	P-Al99,5	1050	Al99,5		Al99,5	Al99,5	ADO	Al99,5	1050A	A91060	Al-99,5	
	2	424201		AW-AlCu4MgSi	AlCuMgSi	2017A	P-AlCu4MgMnSi	2017	AlCuMg1		AlCuMg1	AlCuMg1	D1			A92017	Al-4CuMg	
	2	424203		Al-P2024	AlCu4Mg1	2024	P-AlCu4,4MgMn	2024	AlCuMg2		AlCu4Mg2	AlCuMg2	D16		2024	2024	Al-4Cu1Mg	
	2	424206									AlCu2SiMn		AK6					
	2	424218		AW-AlCu2Mg1,5Ni		2618A		2618			AlCu2Mg2Ni1		AK-1		2618A	A92618	Al-2CuMgNi	
	2	424222		Al-P7075	AlZn6MgCu	7075	P-AlZn5,8MgCuCr	7075	AlZnMgCu1,5		AlZn6Mg2Cu	AlZnMgCu1,5	V95		7075	A97075	Al-6ZnMgCu	
	2	424237		AW-AlSi12,2MgCuNi		4032	P-AlSi12MgCuNi	4032								A94032	Al-12SiNi	
	2	424253				2024-F	P-AlCu4,5MgMnplacc.		AlCuMg2pl				D16P			AlcladA9024		
	2	424254		AW-AlCu4PbMg	AlCu4PbMg	2030			AlCuMgPb									
	2	424315			Al-Cu4Ni2Mg2	A-U4NT	G-AlCu4NiMg	AC5A	G-AlCu4NiMg				AL1		AlCu4Ni2Mg2	A02420	Al-4Cu2NiMg	
	2	424330		AC-AlSi12(a)	Al-Si12	A-S12U	G-AlSi13CuMn	AC3A	G-AlSi11		AlSi11	GAlSi12	AK12	AlSi12Cu	LM20	A04130	Al-12Si1Cu	
	2	424331		AC-AlSi10Mg (A)	Al-Si10Mg	A-S10G	G-AlSi9Mg	ADC3	G-AlSi10Mg		AlSi9Mg	G AlSi10Mg	AK9	AlSi10Mg		A-0359.0		
	2	424332		AC-AlSi7Mg	Al-Si7Mg(FE)	A-S7G	G-AlSi7Mg				AlSi7Mg		AK7	AlSi7MgFe	LM25	A03560	Al-7SiMg	
	2	424336		AC-AlSi12CuNiMg		A-S11UNG		AC8A			AlSi13Mg1CuNi		AK12M2MgN		LM13		Al-12SiNi	
	2	424337				A-S9GU												
	2	424357			Al-SiCu3	A-S5U3G	G-Al5,5Cu	AC2A	G-AlSiCu4		AlSiCu4	GAlSi6Cu4	AK5M4	AlSi6Cu4	LM21	A03080	Al-6Si4Cu	
	2	424361				A-U8S										A02130	Al-7CuSi	
	2	424380											Al 5					
	2	424386				A-S18UNG		AC9A							LM28			
	1	ONZ 424400		Al-P6082	AlSi1MgMn	6082	P-AlSi1MgMn	6061	AlMgSi1		AlSi1MgMn	AlMgSi1	AD35	AlSi1MgMn	6082	A96061	Al-1SiMgMn	
	1	ON 424406		AW-Al99,98Mg0,5					AlRMg0,5									
	1	424412		AW-AlMg2	AlMg2	5052	P-AlMg2,5	5052	AlMg2,5		AlMg2	AlMg2,5	AlMg2	AlMg2,5	5251	A95052	Al-2,5Mg	
	1	424413		AW-AlMg3	AlMg3	5154 A	P-AlMg3,5	5154	AlMg2,7Mn		AlMg3	AlMg3	AMg3	AlMg3	5454	A95154	Al-3Mg	
	2	424415		AW-AlMg4	AlMg4,5Mn0,7	5183	P-AlMg4,4	5082	AlMg4,5		AlMg4,5Mn	AlMg4,5Mn	AMg4,5	AlMg4,5Mn	5083	A95083	Al-5Mg	
	1	ONZ 424432		AW-AlMn1	AlMn1	3103	P-AlMn1,2Cu	3003	AlMn1		AlMn1	AlMn	Amc	AlMn	3103	A93003	Al-1Mn	
	2	424515		AC-AlMg5Si	AlMg5Si1	A-G6			G-AlMg5Si		AlMg5Si1		AMg5K	AlMg5Si	LM5			
	2	424518																
	2	424519		AC-AlMg9	AlMg10	A-G10SY4		ADC5	GD-AlMg9				AMg10		LM10	A05200		

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ISO 513	Subgroup	International equivalents															
		CZ	PRC	EU	ISO	F	I	J	D	D	PL	A	RUS		GB	USA	E
		ČSN	GB	EN	ISO	AFNOR	UNI	JIS	DIN	W.-nr	PN	ONORM	GOST	SS	BS	AISI/SAE	
S	2	Uranus B6				Z2NCDU25-20			X1NiCrMoCu25 20 5	1.4539				2562		904 L,UNSV0890A	
	2	Z8NCTV25-15BFF				E-Z 6 NCTDV 25.15			X5NiCrTi 2615	1.4980				2570		660	
	2	Incoloy 800 HT				Z10NC32-21			X10NiCrAlTi3221	1.4876						B 163	
	2	G-X40NiCrSi38 18					XG50NiCr39 19	SCH15	G-X40NiCrSi38 18	1.487					330C11		
	2	X5NiCrAlTi 31 20							X5NiCrAlTi 31 20	1.496						N 08330	
	2	X12NiCrSi 36 16				Z12NCS35-16	F-3313	SUH330	X12NiCrSi 36 16	1.4864						330	
	2	X2NiCrAlTi 32 20							X2NiCrAlTi 32 20	1.456					NA 15	N 08800	
	2	X1NiCrMoCu 32 28 7							X1NiCrMoCu 32 28 7	1,456						N 08831	
	2	X1NiCrMoCuN 31 27 4				Z1NCDU31-27-03			X1NiCrMoCuN 31 27 4	1.4563				2584		N08028	
	2	A -286							X 5 Ni CrTi 25 15							AMS 5732 - 5737	
	2	X40CoCrNi20 20				Z42CNKDWNb			X40CoCrNi20 20	1,498							
	3	Ni70Cu30			NiCu30	NiCu32Fe1,5Mn			NiCu30Fe		NiCu30		NMZMc28-2,5-1,5				
	3	NiFe17CuCr							NiFe16CuCr								
	3	NiFe48							NiFe47		NiFe49Pr						
	3	NiCr21Mo16Al														ALLOY 59	
	3	NiCr21Mo16W														INCONEL alloy 686	
	3	NiCrCo18Ti														NIMONIC alloy 90 (HEV6)	
	3	NiCo20Cr15MoAlTi														NIMONIC alloy 105	
	3	NiMoCr15W				NiMo16Cr16										UNS N10276	
	3	NiCr22Mo9Nb				NC22DNb											
	3	CoCr23Ni10W7Ta4														MAR-M509	
	3	Hastelloy C-4							NiMo16CrTi	2,461							
	3	Hastelloy X				NC22FeD				2.4603						AMS 5754	
	3	Hastelloy B				ND37FeV			S-NiMo30	2.4800						AMS 5396	
	3	Hastelloy C & C 276				ND16C15			G-NiMo30	2.481						AMS 5750	
	3	Nimonic C-263								2.4650							
	3	Nimonic 90				Nc20ATV			NiCr20Co18Ti	2.4632							
	3	Nimonic PE 13				NC22FeD			NiCr22Fe18Mo	2.4665						AMS 5754 E	
	3	Nimonic 115				NCK15ATD			NiCo15Cr15MoAlTi	2.4636							
	3	Nimonic 263 /C263				NCK20D			NiCr15Co19MoTi	2.4650							
	3	Nimonic 105				NCKD20ATV			NiCo20C15MoAlTi	2.4634							
	3	Nimonic PK33				NC19KDUV			NiCr20Co16MoTi								
	3	Nimonic 80A_				NC20TA			NiCr20TiAk	2.4631			EI –437 B		HR401,601	UNS N07080	
	3	Nimonic 901				ZSNCDT42			NiCr15MoTi	LW2 4662						AMS 5661 A	
	3	Nimonic PK 25				NK0D20ATU			NiCr18CoMo	2.4666						AMS 5753	
	3	Nimonic PE 16				NW11AC			NiFe33Cr17Mo								
	3	Nimonic 75				NC20T			NiCr20Ti	2.4630					HR5,203-4		
	3	Nimocast 842				NC13AD			S-NiCr13Al6MoNb	LW2.4670						SAE 5391 A	
	3	Inconel 600				NC15Fe			NiCr15Fe	2.4816						AMS 5665	
	3	Inconel 601							NiCr23Fe	2.4851						AMS 5715	
	3	Inconel 617			-	-	-		-		-	-	-	-		N06617	
	3	Inconel 625				NC22FeDNB			NiCr22Mo9Nb	2.4856						5666	
	3	Inconel 690				NC 30 Fe			NiCr29Fe	2.464							
	3	Inconel 706				38C16NBT										AMS 5702	
	3	Inconel 713				NC12AD			S-NiCr13Al6MoNb	LW2.4670						AMS 5391	
	3	Inconel 718				NC19FeNB			NiCr19Fe19NbMo	LW2.4668					HR8	AMS 5589	
	3	Inconel 722				NC16FeTi			NiCr16FeTi							AMS5541	
	3	Inconel X-750				NC15FeTNbA										AMS 5667	
	3	Inconel X-750				NC16FeTNb			NiCr16FeTi	2.4669						AMS 5582	
	3	Inconel 751							NiCr16Fe7TiAl	2,469							
	3	Incoloy 825				NC21FeDU			NiCr21Mo	2.4858							
	3	Incoloy 901				ZSNCDT42			NiFe35Cr14MoTi	LW2.4662						AMS 5660	

ISO 513	Subgroup	International equivalents															
		CZ	PRC	EU	ISO	F	I	J	D	D	PL	A	RUS	S	GB	USA	E
		ČSN	GB	EN	ISO	AFNOR	UNI	JIS	DIN	W.-nr	PN	ONORM	GOST	SS	BS	AISI/SAE	
S	3	René 41				NC19KDT			NiCr19Co11MoTi	2.4973						AMS 5399	
	3	René 95				NC14K8											
	3	Monel 400				NU30			NiCu30Fe	2.4360							
	3	Monel K-500				NU 30 AT			NiCu30Al	2.438					NA 18	4676	
	3	Udimet 500				NCK19DAT			NiCr18Co18MoTi	2.4983						AMS 5751	
	3	Udimet 710				NCK18TDA											
	3	Udimet 700				NCK20AT			NiCo15CrMoAlTi	2.4636							
	3	Udimet 718				NC19FeN			NiCr19Fe19NbMo	LW2.4668						5383	
	3	Udimet 720				NC18K15TDA											
	3	Waspaloy				NC20K14			NiCr19Fe19NbMo	LW2.4668						AMS 5544	
	4	Haynes 25				KC20WN				LW2.4964						AMS 5759	
	4	Haynes 188				KC22WN										AMS 5772	
	4	Air Resist 213			-	KC20WN	-		CoCr20W15Ni		-	-	-	-		5537C	
	4	Jetalloy 209			-	KC22WN	-		CoCr22W14Ni		-	-	-	-		AMS 5772	
	1	Ti 1 Pd							Ti 1 Pd	3,723					TP 1	R 52250	
	1	TiAl 3 V 2.5							TiAl 3 V 2.5	3,720							
	1	TiAl6V4ELI							TiAl6V4ELI						TA11	AMS R56401	
	1	TiAl5Sn2.5				T-A5E			TiAl5Sn2.5	3.7115					TA14/17	AMS R54520	
	1	TiAl5Sn2							TiAl5Sn2	3,712							
	1	TiAl6Sn2Zr4Mo2Si							TiAl6Sn2Zr4Mo2Si	3,715						R 54620	
	1	TiAl6V4				T-A6V			TiAl6V4	3.7165					TA10-13/TA28	AMS R56400	
	1	TiAl6V6Sn2							TiAl6V6Sn2	3,718							
	1	TiAl4Mo4Sn2Si0,5				T-A4DE			TiAl4Mo4Sn2Si0,5	3,719					TA 45-51/TA 57		

PRAMET

ISO 513	Subgroup	International equivalents															
		CZ	PRC	EU	ISO	F	I	J	D	D	PL	A	RUS	S	GB	USA	E
		ČSN	GB	EN	ISO	AFNOR	UNI	JIS	DIN	W.-nr	PN	ONORM	GOST	SS	BS	AISI/SAE	
H	4	12 010.4	10	2C10	C10	XC10	C10	S9CK	C10	1.1121	10	RC12	08	1265	045A10	Gr. 1010,1011,M1010	C10k
	4	12 020.4	15	C15E	C15E4	C18RR	C15		C15	1.1141				1370-40	080M15	Gr.1016	C16k
	4	12 023.4	15	C15E	C15E4	XC15	C15	S15C	C15	1.1141	15	RC15	15		040A15	Gr.1015	
	4	12 024.4	20	C 22	C 25	XC 18	C 21	S 22C	C 22	1.0402	20		20	1450	070M20	1020	
	4	12 071.4		1 CS67		C 68	C 67	S 70C-CSP	Ck 67				65		080A67	Gr.1070	
	4	14 100.4	G Cr15	100Cr6	Type 1-0	100C6	100Cr6	SUJ 2	100Cr6		LH 15		Šch 15	2258	534A99	52100	F.1311
	4	14 109.4	GCr 15	100Cr6	Type 1-0	100Cr6	100Cr6	SUJ 2	100Cr6	1.3505	LH 15		ŠCh15	2258	535 A99	52100	100Cr6
	4	14 120.4	15Cr	15Cr2	37Cr4	12C8		SCr 415	15Cr3	1.7015	15 H		15Ch		523M15	5015	
	4	14 209.4	Cr9SiMn	100CrMn6	TYPE 3	100CM6		SUJ3	100CrMn6	1.3520	LH15SG		ŠCh15SG		535A99	Gr.2	100CrMn6
	4	14 220.4	15CrMn	16MnCr5	TYPE 5	16MC5	16MnCr5		16MnCr5	1.7131	15HG		18ChG	2127	527M17	No.5115	16MnCr5
	4	14 221.4	20CrMn	20MnCr5	Type 7	20MC5	20MnCr5	SMnC 420 H	20MnCr5	1.7147	18HGT		18ChG			5120	F.150.D
	4	14 223.4											18ChGT				
	4	14 231.4											30ChGT				
	4	14 260	60Si2CrA			54SiCr6	48Si7	SUP7	54SiCr6	1.7102	60S2		60S2ChA	2090	250A61	9260	
	4	15 340.4	38CrMoAl			40CAD 6.12	41CrAlMo7	SACM 645	41CrAlMo7	1.8509	38HMJ		38Ch2MJuA		905M39	Cl. A	41CrAlMo7
	4	16 220.4	12CrNi2	15NiCr6		16NC6	16CrNi4		15CrNi6	1.5713	15HN		12ChN2	2512	815M17	Gr.4320	16NiCr4
	4	16 231.4				20NC6	20CrNi4		19CrNi8				20Ch2N4A		822M17	3120	
	4	16 420.4				13NiCr14		SNC815	14NiCr14	1.5752			12Ch2N4A		655H13	E3310X	
	4	16 532.4									30HGSNA		30ChGSN2A				
	4	16 720.4									18H2N4WA		18Ch2N4MA				
	3	17 023.4	3Cr13	X30Cr13	Type 5	Z30Cr13	X30Cr13	SUS420J2	X30Cr13	1.4028	3H13		30Ch13	2304-03	420S45	Type 420	2304-03
	3	17 024.4	4C13	X39Cr13	Type 6	Z40C13	X40Cr14		X39Cr13	1.4031	4H13		40Ch13		X39Cr13	Type 420	X39Cr13
	3	17 029.4								1.4034							
	4	17 042.4									H18		95Ch18			440C	
	4	19 083.4				Y342			C45W3	1.1730		K945					F.5131
	4	19 103.4				Y355		SK7	C60W3	1.1740	N5	K960					
	4	19 125.9				Y365		SK 7	C67W	1.1744	N6						
	4	19 132.4	T 7	CT 70	C 70 U	C70 E2U	C 70 KU	SK 6	C 70 W2		N7	K 970	U7-1			W 1-7	F.5103
	4	19 133.4	T7	CT70	C70U	Y170	C70KU	SK6	C70W	1.1620	N7	K970	U7				C70U
	4	19 152.4	T8	CT80	C80U	Y180	C80KU	SK5	C80W2	1.1625	N8	K980	U8-1		BW1A	W1Gr.A	C80U
	4	19 191.4	T10A	CT105	C105U	C105E2U	C100KU	SK3	C105W1	1.1645	N10E	K990	U101	1880	BW1B	W5	C102U
	4	19 192.4	T 10	CT 105	C 90 U	C 105 E2U	C 100 KU	SK 3	C 105 W2		N 10	K990	U 10-1			W 110	F.5117
	4	19 221.4	T11	CT120	C120U	Y2120	C120KU		C110W2	1.1654	N12	K990	U12-1		BW1C		F-5123
	4	19 255.4		CT 120	TC 120	C120 E3U	C120 KU	SK 2	C125 W	1.1663	N 12	K 995	U 13-1			W 112	C120 U
	4	19 312.4		90MnV8	90MnCrV8	90MnV8	90MnVCr8KU		90MnCrV8	1.2842	NMV	K720	9G2V		B02	02	90 MnCrV 8
	4	19 313.4		90MnV8	90MnCrV8	90MnV8	90MnVCr8 KU		90MnCrV8		NMV	K 720	9GF2		BO 2	02	90MnCrV8
	4	19 340.4		60SiMn7		60Si8	56SiMn7 KU		70SI7					No 22			
	4	19 356.4		100 V2	TCV 105	C 105 E2 UV1	102 V2 KU	SKS 43	100 V1	1.2833	NV	K 760			BW 2	W 210	100 V2
	4	19 418.4							80CrV5		NCV 1		8Ch				80CrV2
	4	19 419.4							80CrV2		NCV 1		8Ch				80CrV2
	4	19 420.4	Cr 06			Y2 140 C		SKS 8	140Cr2	1.2008	NC 5	K 205	13Ch				140Cr2
	4	19 421.4		107CrV3			107CrV3KU		115CrV3	1.2210		K510				L2	120CrV2
	4	19 422.4							145Cr6		NC 6	K 505					
	4	19 423.4						SKC 11	90Cr3	1.2056			9ChF			L 2	
	4	19 426.4	9CV2						85Cr7			K 201	9Ch1				
	1	19 434.4		X21Cr13		X20Cr13	X21Cr13KU		X20Cr13 1.2082	1.2082							X20Cr13 F5261
	3	19 435.4		X41Cr13	X40Cr14	X40Cr14	X41Cr13KU	SUS 420 J2	X42Cr13		4H13		40Ch13	2314	420S45		F.5263
	4	19 436.4		X210Cr12	C210Cr12	Z200C12	X205Cr12KU	SKD1	X210Cr12	1.2080	NC11	K100	Ch12		BD3	D3	X210Cr12
	4	19 437.4		X210CrW 12-1	X210CrW12	X210CrW 12-1	215CrW 12-1 KU		X210CrW12					2313			2313
	4	19 452.4				Y60SC7			58SiCr8	1.2103		K244					
	4	19 487.4							21MnCr5	1.2162							
	1	19 501		100CrMo7		100CD7	100CrMo7	SUJ4	100CrMo7	1.2303						L7	F.520.F

ISO 513	Subgroup	International equivalents																
		CZ	PRC	EU	ISO	F	I	J	D	D	PL	A	RUS	S	GB	USA	E
		ČSN	GB	EN	ISO	AFNOR	UNI	JIS	DIN	W.-nr	PN	ONORM	GOST	SS	BS	AISI/SAE	
H	4	19 501.4		100CrMo7		100CD7	100CrMo7	SUJ4	100CrMo7	1.2303						L7	F.520.F
	3	19 512.4				45CDV6	35CrMo8 KU		48CrMoV 6 7								
	3	19 520.4		35CrMo8	35CrMo7	40CrMnMo8	35CrMo8KU		40CrMnMo7		WLB						40CrMnMo7
	1	19 541.4		30CrMoV12-11	32CrMoV12-28	32CDV12-28	30CrMoV12-27KU	SKD7	X32CrMoV33	1.2365	WLV	W320	3Ch3M3F		BH10	H10	30CrMoV12
	3	19 552.4	4Cr5MoSiV	X37CrMoV5-1	X37CrMoV5 1	Z38CDV5	X37CrMoV51KU	SKD6	X38CrMoV5.1	1.2343	WCL	W300	4Ch5MFS		BH11	H11	X37CrMoSiV5
	3	19 553.9	4Cr5MoSiV	X37CrMoV5-1	X37CrMoV5 1	Z38CDV5	X37CrMoV51KU	SKD6	X38CrMoV5.1	1.2343	WCL	W300	4Ch5MFS		BH11	H11	
	3	19 554.4	4Cr5MoSiV1	X40CrMoV511	40CrMoV5 1	X40CrMoV5	X40CrMoV5 11KU	SKF61	X40CrMoV51	1.2344	WCLV	W302	4Ch5MF1S	2214	BH 13	H13	X37CrMoSiV5
	4	19 561.4														H 42	
	4	19 571.4	Cr5Mo1V	X100CrMoV 5 1	X100CrMoV5	Z100CDV5	X100CrMOV51KU	SKD 12	X100CrMoV 5 1		NCLV	K 305	9Ch5VF	2260	BA 2	A 2	F.5227
	4	19 581.4														A7	
	4	19 614.4							55NiCr11	1.2719		K 606		2551			F.5224
	1	19 642.4		40NiCrMoV16			40NiCrMoV16 KU		35NiMo16			W 502			BP 30		35NiCrMo16
	3	19 655.4		40NiCrMo16	45NiCrMo16	40NCDV16	40NiCrMoV16KU		X45NiMo4II1.2	1.2767		K 600					
	3	19 662.4	5CrNiMo	55NiCrMoV7		55NCDV7	44NiCrMoV7 KU	SKT 4	55NiCrMoV6	1.2711	WNL	W 502	5ChNM		BH 224/5	L 6	F.520.S
	1	19 675.4							28NiCrMoV10	1.2740							
	1	19 678							28NiMo17	1.2747							
	1	19 678.4							28NiMo17	1.2747							
	4	19 710.4	W					SKS 7M	120 W 4	1.2414	NW 1	K 405				F 1	F.5238
	4	19 712.4							110WCrV5				ChV6				
	4	19 714.4						SKS 11	X 130W5			K 400	ChV 4F			F 2	
	1	19 720.4	30W4Cr2VA	X30WCrV 5 3	30WCrV5	X32WCrV5	X30WCrV 5 3KU	SKD 4	30WCrV 5.3			W 105					
	1	19 721.4	3Cr2W8V	X30WCrV93	X30WCrV9-3	Z30WCV9	X30WCrV93KU	SKD5	X30WCrV9.3	1.2581	WWW	W100	3Ch2V8F		BH21	H21	X30WCrV9
	1	19 723.4									WWN 1	W-103			BH 21A		
	4	19 732.4		45WCrSiV8	50WCrV8	45WCV20	45WCrV8KU		45WCrV7	1.2542	NZ2	K450	50ChV2SF	2710	BS1	S1	45 WCrSiV8
	4	19 733.4		55WCrV8	60WCrV8	55WC20	55WCrV8 KU		60WCrV7		NZ 3	K 455	5ChV2S		BS 1	S 1	60WCrSiV8
	1	19 740.4							30 WCrV 151	1.2564	WWS 1	W 106					F.527
	4	19 802.4						SKH6	S 12-1-2	1.3318	SW12		R12F3				
	4	19 810.4				Z130WV 13.4			S 12-1-4	1.3302	SW12		R9F5				
	4	19 824.4	W18Cr4V	HSv18-0-1	HS 18-0-1	Z80WCV18-04-01	HS 18-0-1	SKH 2	HS 18-0-1	1.3355	SW18	S 200	R18	2750	BT1	T1	HS 18-0-1
	4	19 830.4	W6Mo5Cr4V2	HS 6-5-2	HS 6-5-2	Z85WDCV06-05-04-02	HS 6-5-2	SKH51	HS 6-5-2	1.3343	SW7M	S600	R6M5	2722	BM2	M2	HS 6-5-2
	4	19 852.4	W6Mo5Cr4V2Co5	HS 6-5-2-5	HS 6-5-2-5	Z85WDKCV06-05-04-02	HS 6-5-2-5	SKH55	HS 6-5-2-5	1.3243	SK5M	S705	R6M5K5	2723	BM35		HS 6-5-2-5
	4	19 855.4	W18Cr4VCo4	HS18-1-1-5		Z 80WKCV 18-05-04-01	HS 18-1-1-5	SKH 3	HS 18-1-2-5			S 305	R18K5F2		BT 4	T 4	F.5530
	4	19 856.4											R9K5				
	4	19 858.4	W12Cr4V5Co5	HS12-1-5-5	HS12-1-5-5	HS 12-1-5-5	HS12-1-5-5	SKH 10	HS 12-1-4-5	1.3202	SK 5V	S 308	R13F4K5		BT 15	T 15	HS12-1-5-5
	4	19 861.4		HS 10-4-3-10		Z130WKCDV	HS 10-4-3-10	SKH57	HS 10-4-3-10	1.3207	SK10V	S700	R12F3K10M3-Š	2736	BT42		HS 10-4-3-10
	4	42 2880.6											JuND4				
	4	42 2881.6											JuND8				
	4	42 2887.6							AlNiCo18/9								
	4	42 2891.6							AlNiCo 3515				JuN14DK25A				
	4	42 2893.6							AlNiCo 30/10								
	4	42 2895.6							AlNiCo44/5				JuN13DK24S				
	4	42 2992.4											R9				
	2	422478											ŽČCh3				
	2	422483									ZISi15		ČS15		Si14	Gr.1	
	2	422484											ŽČJu30				
	2	422491											ŽČCh16				
	2	G-X 260 NiCr 4 2							G-X 260 NiCr 4 2	0,962				0512-00	Grade 2 A	Ni-Hard 2	
	2	G-X 330 NiCr 4 2							G-X 330 NiCr 4 2	0,963				0513-00	Grade 2 B	Ni-Hard 1	
	2	G-X 260 NiCr 4 2							G-X 260 NiCr 4 2	0,962				0512-00	Grade 2 A	Ni-Hard 2	
	2	G-X 330 NiCr 4 2							G-X 330 NiCr 4 2	0,963				0513-00	Grade 2 B	Ni-Hard 1	
	2	G-X 300 CrNiSi 9 5 2							G-X 300 CrNiSi 9 5 2	0,963						Ni-Hard 4	
	2	G-X 300 CrMo 15 3							G-X 300 CrMo 15 3	0,964							

Strength [MPa]	Hardness			
	BRINELL	VICKERS	ROCKWELL	ROCKWELL
R_m	HB	HV	HRB	HRC
285	86	90	1190	-
320	95	100	56,2	-
350	105	110	62,3	-
385	114	120	66,7	-
415	124	130	71,2	-
450	133	140	75,0	-
480	143	150	78,7	-
510	152	160	81,7	-
545	162	170	85,8	-
575	171	180	87,1	-
610	181	190	89,5	-
640	190	200	91,5	-
675	199	210	93,5	-
705	209	220	95	-
740	219	230	96,7	-
770	228	240	98,1	-
800	238	250	99,5	-
820	242	255	-	23,1
850	252	265	-	24,8
880	261	275	-	26,4
900	266	280	-	27,1
930	276	290	-	28,5
950	280	295	-	29,2
995	295	310	-	31,0
1030	304	320	-	32,2
1060	314	330	-	33,3
1095	323	340	-	34,4
1125	333	350	-	35,5
1155	342	360	-	36,6

Strength [MPa]	Hardness			
	BRINELL	VICKERS	ROCKWELL	ROCKWELL
R_m	HB	HV	HRB	HRC
1190	352	370	-	37,7
1220	361	380	-	38,8
1255	371	390	-	39,8
1290	380	400	-	40,8
1320	390	410	-	41,8
1350	399	420	-	42,7
1385	409	430	-	43,6
1420	418	440	-	44,5
1455	428	450	-	45,3
1485	437	460	-	46,1
1520	447	470	-	46,9
1555	456	480	-	47,7
1595	466	490	-	48,4
1630	475	500	-	49,1
1665	485	510	-	49,8
1700	494	520	-	50,5
1740	504	530	-	51,1
1775	513	540	-	51,7
1810	523	550	-	52,3
1845	532	560	-	53,0
1880	542	570	-	53,6
1920	551	580	-	54,1
1955	561	590	-	54,7
1995	570	600	-	55,2
2030	580	610	-	55,7
2070	589	620	-	56,3
2105	599	630	-	56,8
2145	608	640	-	57,3
2180	618	650	-	57,8