

INDEXABLE TURNING TOOLS & ISO CARBIDE INSERT

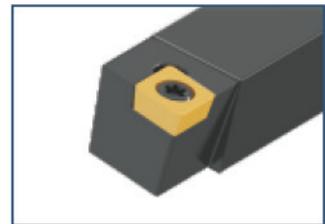
TOOLHOLDERS WITH NEGATIVE RAKE ANGEL

55



TOOLHOLDERS WITH POSITIVE RAKE ANGEL

65



BORING BAR WITH NEGATIVE RAKE ANGEL

76



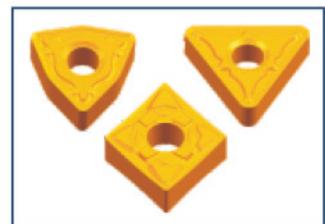
BORING WITH POSITIVE RAKE ANGEL

81

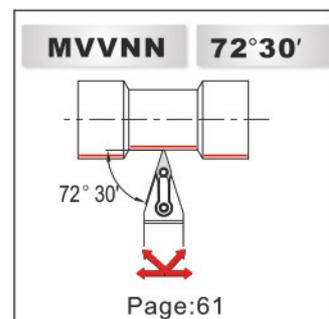
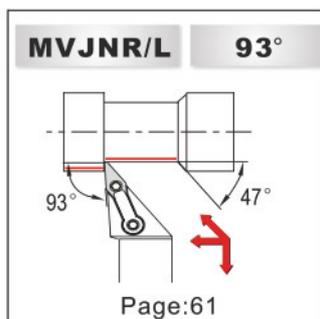
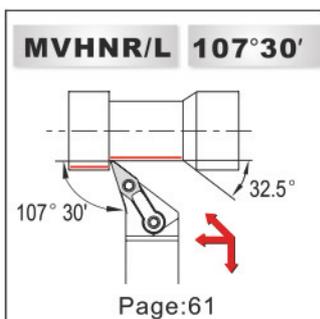
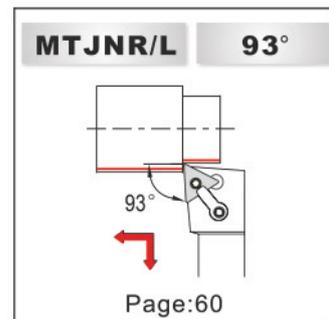
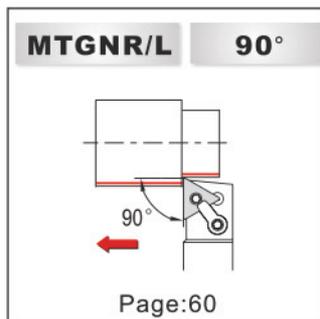
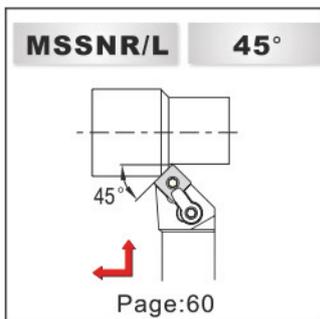
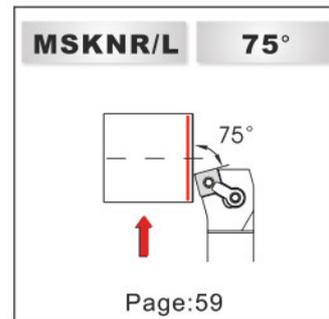
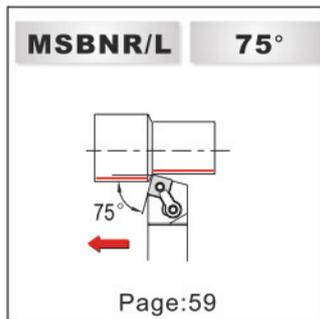
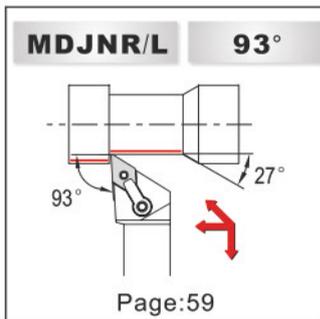
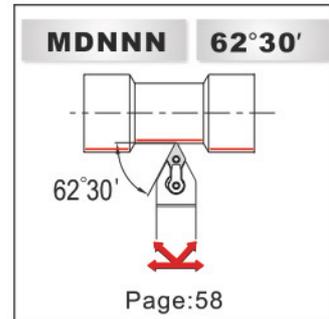
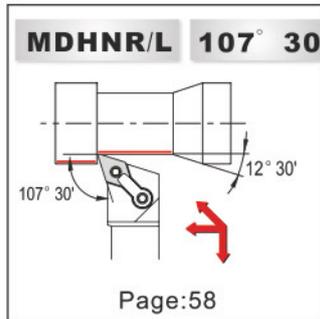
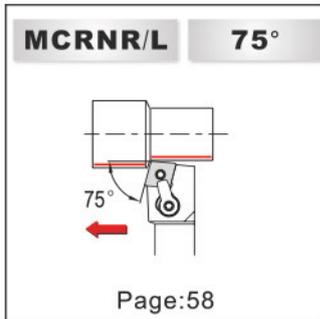
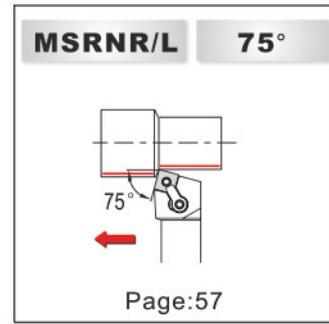
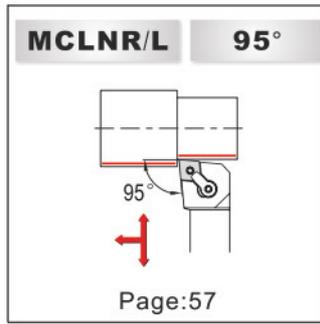
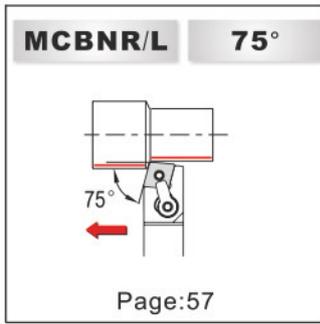


ISO CARBIDE INSERTS

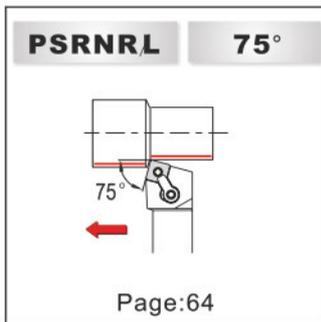
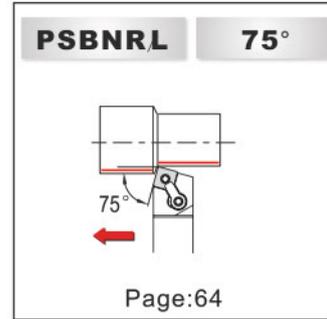
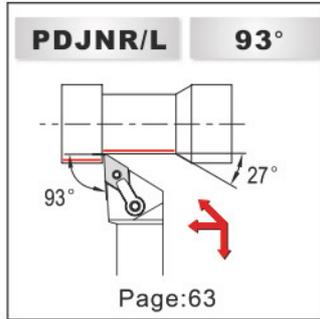
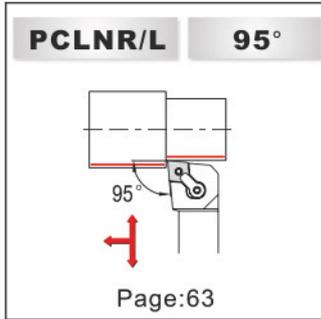
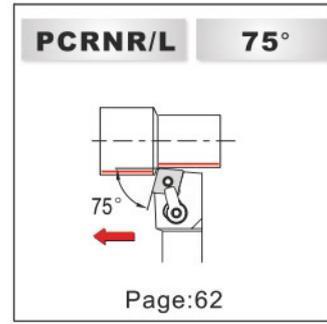
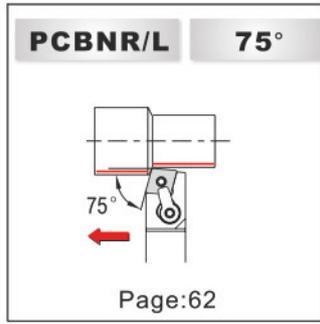
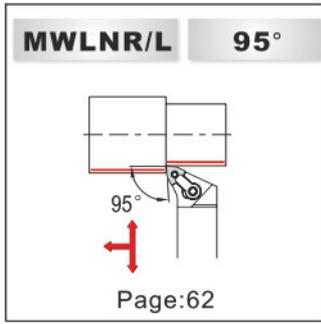
92



TOOLHOLDERS WITH NEGATIVE RAKE ANGEL

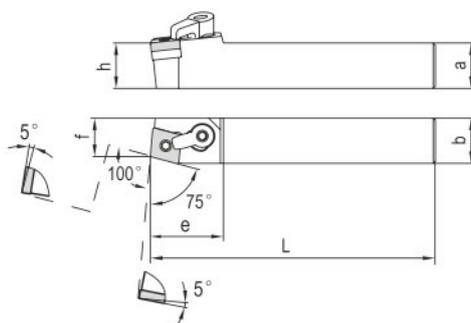
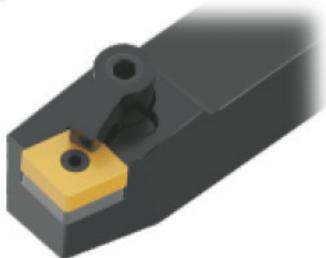
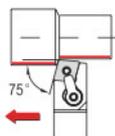


TOOLHOLDERS WITH NEGATIVE RAKE ANGEL



MCBNR/L

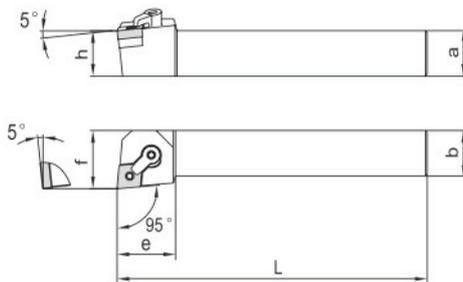
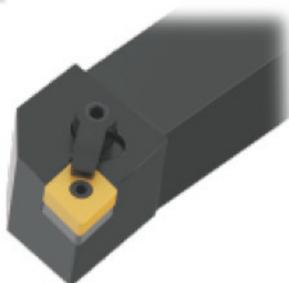
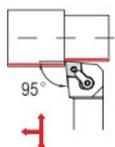
75°



Order No.		ISO Code	Size(mm)					Insert	Shim	Lock pin	Clamp	Clamp screw	
Right hand	Left hand		a	b	L	h	f						e
211-01-001	211-01-002	MCBNR/L2020K12	20	20	125	20	17	32	CN..1204..	ICSN-433	NL-46	CL-9	XNS-59
211-01-003	211-01-004	MCBNR/L2525M12	25	25	150	25	22	32	CN..1204..	ICSN-433	NL-46	CL-9	XNS-59
211-01-005	211-01-006	MCBNR/L3232P12	32	32	170	32	27	32	CN..1204..	ICSN-433	NL-46	CL-9	XNS-59
211-01-007	211-01-008	MCBNR/L2525M16	25	25	150	25	22	40	CN..1606..	ICSN-533	NL-58	CL-9	XNS-510
211-01-009	211-01-010	MCBNR/L3232P16	32	32	170	32	27	40	CN..1606..	ICSN-533	NL-58	CL-9	XNS-510
211-01-011	211-01-012	MCBNR/L4040R19	40	40	200	40	35	40	CN..1906..	ICSN-633	NL-68	CL-12	XNS-510

MCLNR/L

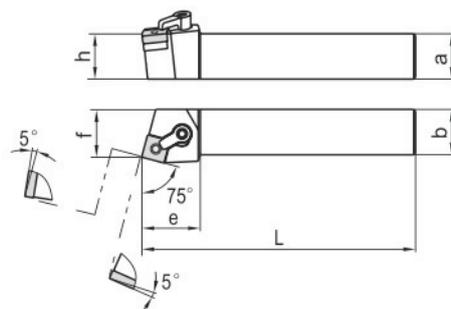
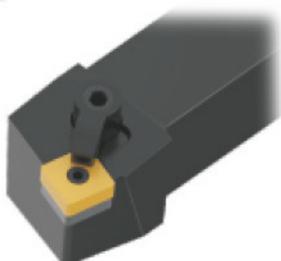
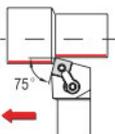
95°



Order No.		ISO Code	Size(mm)					Insert	Shim	Lock pin	Clamp	Clamp screw	
Right hand	Left hand		a	b	L	h	f						e
211-01-013	211-01-014	MCLNR/L1616H12	16	16	100	16	20	32	CN..1204..	ICSN-433	NL-46	CL-20	XNS-48
211-01-015	211-01-016	MCLNR/L2020K12	20	20	125	20	25	32	CN..1204..	ICSN-433	NL-46	CL-20	XNS-48
211-01-017	211-01-018	MCLNR/L2525M12	25	25	150	25	32	32	CN..1204..	ICSN-433	NL-46	CL-20	XNS-48
211-01-019	211-01-020	MCLNR/L3232P12	32	32	170	32	40	32	CN..1204..	ICSN-433	NL-46	CL-20	XNS-48
211-01-021	211-01-022	MCLNR/L2525M16	25	25	150	25	32	38	CN..1606..	ICSN-533	NL-58	CL-12	XNS-510
211-01-023	211-01-024	MCLNR/L3232P16	32	32	170	32	40	38	CN..1606..	ICSN-533	NL-58	CL-12	XNS-510
211-01-025	211-01-026	MCLNR/L4040R16	40	40	200	40	50	38	CN..1606..	ICSN-533	NL-58	CL-12	XNS-510
211-01-027	211-01-028	MCLNR/L2525M19	25	25	150	25	32	38	CN..1906..	ICSN-633	NL-68	CL-12	XNS-510
211-01-029	211-01-030	MCLNR/L3232P19	32	32	170	32	40	38	CN..1906..	ICSN-633	NL-68	CL-12	XNS-510
211-01-031	211-01-032	MCLNR/L4040R19	40	40	200	40	50	38	CN..1906..	ICSN-633	NL-68	CL-12	XNS-510
211-01-033	211-01-034	MCLNR/L4040R25	40	40	200	40	50	45	CN..2509..	ICSN-846	NL-810	CL-24	XNS-610

MSRNR/L

75°

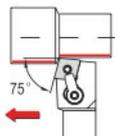


Order No.		ISO Code toolholder	Size(mm)					For insert	Shim	Lock pin	Clamp	Clamp screw	
Right hand	Left hand		a	b	L	h	f						e
211-03-019	211-03-020	MSRNR/L2525M12	25	25	150	25	27	32	SN..1204..	ISSN-433	NL-46	CL-9	XNS-59
211-03-021	211-03-022	MSRNR/L2525M15	25	25	150	25	27	38	SN..1506..	ISSN-533	NL-58	CL-12	XNS-510

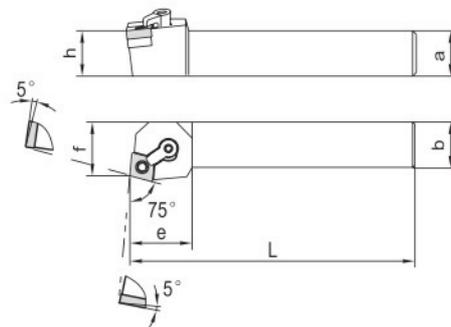
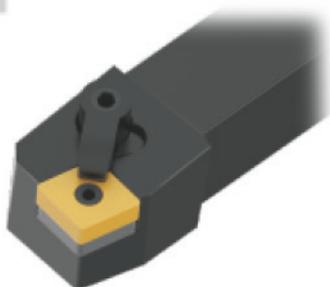
TOOLHOLDERS WITH NEGATIVE RAKE ANGEL

MCRNR/L

75°



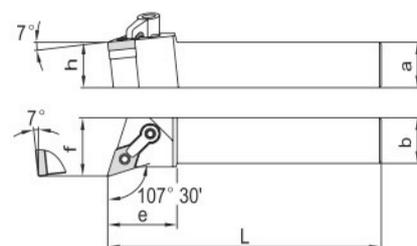
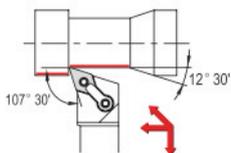
右手刀图例



Order No.		ISO Code	Size(mm)						Insert	Shim	Lock pin	Clamp	Clamp screw
Right hand	Left hand		a	b	L	h	f	e					
211-01-035	211-01-036	MCRNR/L2020K12	20	20	125	20	22	32	CN..1204..	ICSN-433	NL-46	CL-20	XNS-48
211-01-037	211-01-038	MCRNR/L2525M12	25	25	150	25	35	32	CN..1204..	ICSN-433	NL-46	CL-20	XNS-48
211-01-039	211-01-040	MCRNR/L3232P12	32	32	170	32	35	38	CN..1606..	ICSN-533	NL-58	CL-12	XNS-510
211-01-041	211-01-042	MCRNR/L2525M16	25	25	150	25	43	38	CN..1606..	ICSN-533	NL-58	CL-12	XNS-510
211-01-043	211-01-044	MCRNR/L3232P16	32	32	170	32	35	38	CN..1906..	ICSN-633	NL-68	CL-12	XNS-510
211-01-045	211-01-046	MCRNR/L4040R19	40	40	200	40	43	38	CN..1906..	ICSN-633	NL-68	CL-12	XNS-510
211-01-047	211-01-048	MCRNR/L4040R25	40	40	200	40	43	45	CN..2509..	ICSN-846	NL-810	CL-24	XNS-610

MDHNR/L

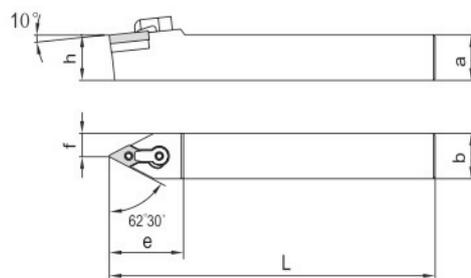
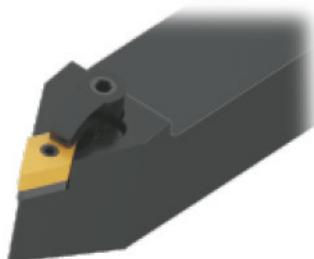
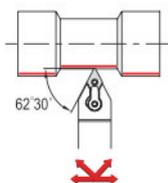
107°30'



Order No.		ISO Code	Size(mm)						Insert	Shim	Lock pin	Clamp	Clamp screw
Right hand	Left hand		a	b	L	h	f	e					
211-02-001	211-02-002	MDHNR/L2020K11	20	20	125	20	25	30	DN..1104..	IDSN-322	NL-34L	CL-20	XNS-48
211-02-003	211-02-004	MDHNR/L2525M11	25	25	150	25	32	30	DN..1104..	IDSN-322	NL-34L	CL-20	XNS-48
211-02-005	211-02-006	MDHNR/L2020K15	20	20	125	20	25	35	DN..1506..	IDSN-433	NI-46L	CL-12	XNS-510
211-02-007	211-02-008	MDHNR/L2525M15	25	25	150	25	32	35	DN..1506..	IDSN-433	NI-46L	CL-12	XNS-510
211-02-009	211-02-010	MDHNR/L3232P15	32	32	170	32	40	35	DN..1506..	IDSN-433	NI-46L	CL-12	XNS-510

MDNNN

62°30'

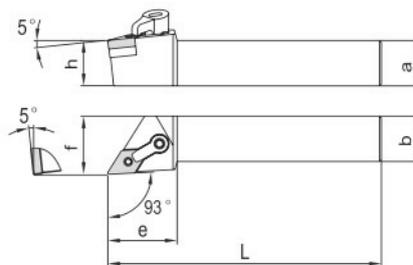
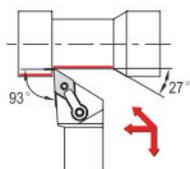


Order No.	ISO Code toolholder	Size(mm)						Insert	Shim	Lock pin	Clamp	Clamp screw
		a	b	L	h	f	e					
211-02-027	MDNNN1616H11	16	16	100	16	8	35	DN..1104..	IDSN-322	NL-34L	CL-20	XNS-48
211-02-029	MDNNN2020K11	20	20	125	20	10	35	DN..1104..	IDSN-322	NL-34L	CL-20	XNS-48
211-02-031	MDNNN2525M11	25	25	150	25	12.5	35	DN..1104..	IDSN-322	NL-34L	CL-20	XNS-48
211-02-033	MDNNN3232P11	32	32	170	32	16	35	DN..1104..	IDSN-322	NL-34L	CL-20	XNS-48
211-02-035	MDNNN2525M15	25	25	150	25	12.5	42	DN..1506..	IDSN-433	NL-46L	CL-12	XNS-510
211-02-037	MDNNN3232P15	32	32	170	32	16	42	DN..1506..	IDSN-433	NL-46L	CL-12	XNS-510

TOOLHOLDERS WITH NEGATIVE RAKE ANGEL

MDJNR/L

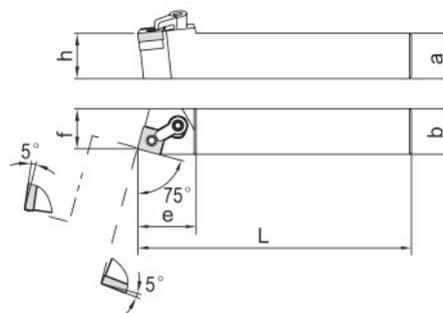
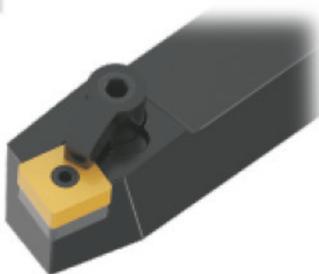
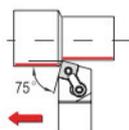
93°



Order No.		ISO Code toolholder	Size(mm)						For Insert	Shim	Lock pin	Clamp	Clamp screw
Right hand	Left hand		a	b	L	h	f	e					
211-02-011	211-02-012	MDJNR/L1616H11	16	16	100	16	20	32	DN..1104..	IDSN-322	NL-34L	CL-20	XNS-48
211-02-013	211-02-014	MDJNR/L2020K11	20	20	125	20	25	32	DN..1104..	IDSN-322	NL-34L	CL-20	XNS-48
211-02-015	211-02-016	MDJNR/L2525M11	25	25	150	25	32	32	DN..1104..	IDSN-322	NL-34L	CL-20	XNS-48
211-02-017	211-02-018	MDJNR/L3232P11	32	32	170	32	40	32	DN..1104..	IDSN-322	NL-34L	CL-20	XNS-48
211-02-019	211-02-020	MDJNR/L2020K15	20	20	125	20	25	38	DN..1506..	IDSN-433	NL-46L	CL-12	XNS-510
211-02-021	211-02-022	MDJNR/L2525M15	25	25	150	25	32	38	DN..1506..	IDSN-433	NL-46L	CL-12	XNS-510
211-02-023	211-02-024	MDJNR/L3232P15	32	32	170	32	40	38	DN..1506..	IDSN-433	NL-46L	CL-12	XNS-510
211-02-025	211-02-026	MDJNR/L4040R15	40	40	200	40	50	38	DN..1506..	IDSN-433	NL-46L	CL-12	XNS-510

MSBNR/L

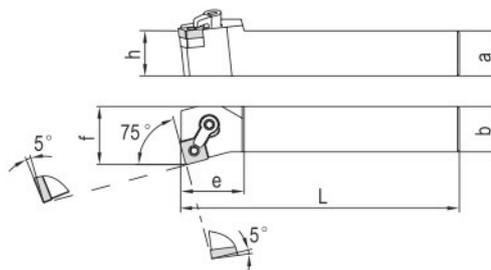
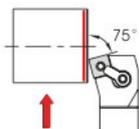
75°



Order No.		ISO Code toolholder	Size(mm)						For insert	Shim	Lock pin	Clamp	Clamp screw
Right hand	Left hand		a	b	L	h	f	e					
211-03-001	211-03-002	MSBNR/L2020K12	20	20	125	20	17	32	SN..1204..	ISSN-433	NL-46	CL-9	XNS-59
211-03-003	211-03-004	MSBNR/L3232P15	32	32	170	32	27	38	SN..1506..	ISSN-533	NL-58	CL-12	XNS-510
211-03-005	211-03-006	MSBNR/L3232P19	32	32	170	32	27	42	SN..1906..	ISSN-633	NL-68	CL-12	XNS-510

MSKNR/L

75°

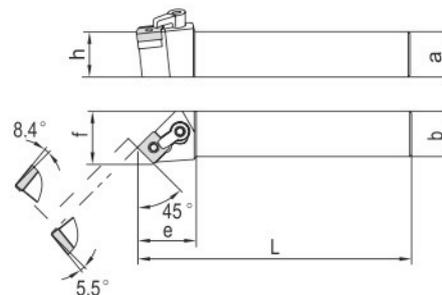
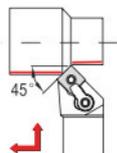


Order No.		ISO Code toolholder	Size(mm)						For insert	Shim	Lock pin	Clamp	Clamp screw
Right hand	Left hand		a	b	L	h	f	e					
211-03-007	211-03-008	MSKNR/L2020K12	20	20	125	20	25	32	SN..1204..	ISSN-433	NL-46	CL-9	XNS-59
211-03-009	211-03-010	MSKNR/L2525M12	25	25	150	25	32	32	SN..1204..	ISSN-433	NL-46	CL-9	XNS-59
211-03-011	211-03-012	MSKNR/L3232P12	32	32	170	32	40	32	SN..1204..	ISSN-433	NL-46	CL-9	XNS-59
211-03-013	211-03-014	MSKNR/L2525M15	25	25	150	25	32	38	SN..1506..	ISSN-533	NL-58	CL-12	XNS-510
211-03-015	211-03-016	MSKNR/L3232P15	32	32	170	32	40	38	SN..1506..	ISSN-533	NL-58	CL-12	XNS-510
211-03-017	211-03-018	MSKNR/L3232P19	32	32	170	32	40	38	SN..1906..	ISSN-633	NL-68	CL-12	XNS-510

TOOLHOLDERS WITH NEGATIVE RAKE ANGEL

MSSNR/L

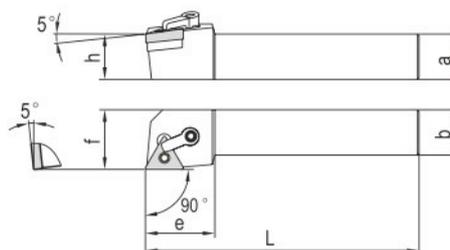
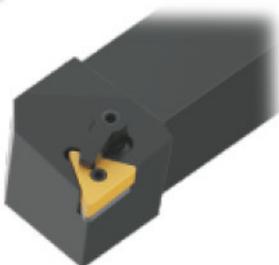
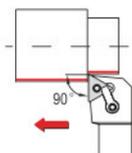
45°



Order No.		ISO Code toolholder	Size(mm)						For insert	Shim	Lock pin	Clamp	Clamp screw
Right hand	Left hand		a	b	L	h	f	e					
211-03-023	211-03-024	MSSNR/L2020K12	20	20	125	20	25	32	SN..1204..	ISSN-433	NL-46	CL-9	XNS-59
211-03-025	211-03-026	MSSNR/L2525M12	25	25	150	25	32	32	SN..1204..	ISSN-433	NL-46	CL-9	XNS-59
211-03-027	211-03-028	MSSNR/L3232P12	32	32	170	32	40	32	SN..1204..	ISSN-433	NL-46	CL-9	XNS-59
211-03-029	211-03-030	MSSNR/L3232P15	32	32	170	32	40	38	SN..1506..	ISSN-533	NL-58	CL-9	XNS-510
211-03-031	211-03-032	MSSNR/L4040R15	40	40	200	40	50	38	SN..1506..	ISSN-533	NL-58	CL-9	XNS-510
211-03-033	211-03-034	MSSNR/L4040R19	40	40	200	40	50	45	SN..1906..	ISSN-633	NL-68	CL-12	XNS-510

MTGNR/L

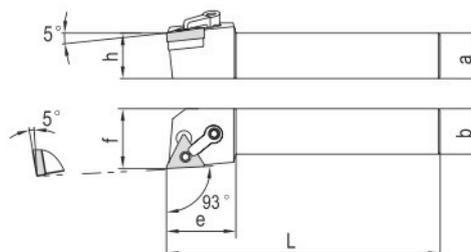
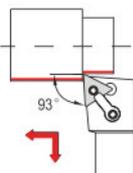
90°



Order No.		ISO Code toolholder	Size(mm)						For insert	Shim	Lock pin	Clamp	Clamp screw
Right hand	Left hand		a	b	L	h	f	e					
211-04-001	211-04-002	MTGNR/L1616H16	16	16	100	16	20	29	TN..1604..	ITSN-323	NL-34L	CL-6	XNS-36
211-04-003	211-04-004	MTGNR/L2020K16	20	20	125	20	25	29	TN..1604..	ITSN-323	NL-34L	CL-6	XNS-36
211-04-005	211-04-006	MTGNR/L2525M16	25	25	150	25	32	29	TN..1604..	ITSN-323	NL-34L	CL-6	XNS-36
211-04-007	211-04-008	MTGNR/L3232P16	32	32	170	32	40	29	TN..1604..	ITSN-323	NL-34L	CL-6	XNS-36
211-04-009	211-04-010	MTGNR/L2020K22	20	20	125	20	25	35	TN..2204..	ITSN-433	NL-46	CL-9	XNS-510
211-04-011	211-04-012	MTGNR/L2525M22	25	25	150	25	32	35	TN..2204..	ITSN-433	NL-46	CL-9	XNS-510
211-04-013	211-04-014	MTGNR/L3232P22	32	32	170	32	40	35	TN..2204..	ITSN-433	NL-46	CL-9	XNS-510

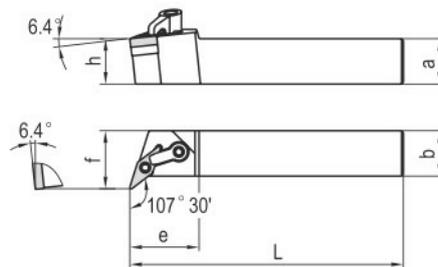
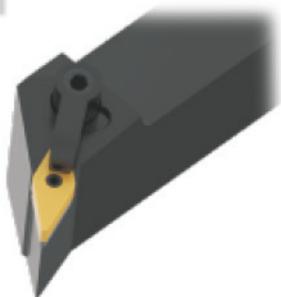
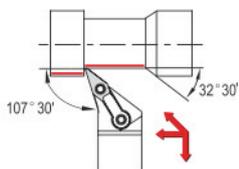
MTJNR/L

93°



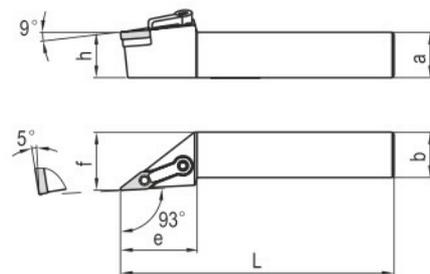
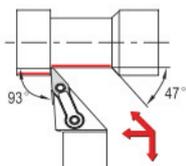
Order No.		ISO Code toolholder	Size(mm)						For insert	Shim	Lock pin	Clamp	Clamp screw
Right hand	Left hand		a	b	L	h	f	e					
211-04-015	211-04-016	MTJNR/L1616H16	16	16	100	16	20	29	TN..1604..	ITSN-323	NL-34L	CL-6	XNS-36
211-04-017	211-04-018	MTJNR/L2020K16	20	20	125	20	25	29	TN..1604..	ITSN-323	NL-34L	CL-6	XNS-36
211-04-019	211-04-020	MTJNR/L2525M16	25	25	150	25	32	29	TN..1604..	ITSN-323	NL-34L	CL-6	XNS-36
211-04-021	211-04-022	MTJNR/L3232P16	32	32	170	32	40	29	TN..1604..	ITSN-323	NL-34L	CL-6	XNS-36
211-04-023	211-04-024	MTJNR/L2525M22	25	25	150	25	32	35	TN..2204..	ITSN-433	NL-46	CL-9	XNS-510
211-04-025	211-04-026	MTJNR/L3232P22	32	32	170	32	40	35	TN..2204..	ITSN-433	NL-46	CL-9	XNS-510

MVHNR/L 107° 30'



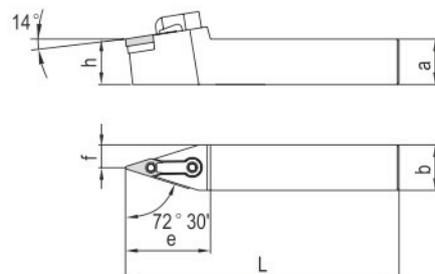
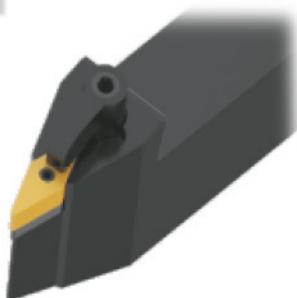
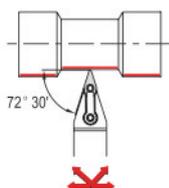
Order No.		ISO Code toolholder	Size(mm)						For insert	Shim	Lock pin	Clamp	Clamp screw
Right hand	Left hand		a	b	L	h	f	e					
211-05-001	211-05-002	MVHNR/L2525M16	25	25	150	25	32	38	VN..1604..	IVSN-322	NL-34L	CL-30	XNS-510
211-05-003	211-05-004	MVHNR/L3232P16	32	32	170	32	40	38	VN..1604..	IVSN-322	NL-34L	CL-30	XNS-510

MVJNR/L 93°



Order No.		ISO Code toolholder	Size(mm)						For insert	Shim	Lock pin	Clamp	Clamp screw
Right hand	Left hand		a	b	L	h	f	e					
211-05-005	211-05-006	MVJNR/L1616H16	16	16	100	16	20	42	VN..1604..	IVSN-322	NL-34L	CL-30	XNS-59
211-05-007	211-05-008	MVJNR/L2020K16	20	20	125	20	25	42	VN..1604..	IVSN-322	NL-34L	CL-30	XNS-510
211-05-009	211-05-010	MVJNR/L2525M16	25	25	150	25	32	42	VN..1604..	IVSN-322	NL-34L	CL-30	XNS-510
211-05-011	211-05-012	MVJNR/L3232P16	32	32	170	32	40	42	VN..1604..	IVSN-322	NL-34L	CL-30	XNS-510

MVVNN 72° 30'

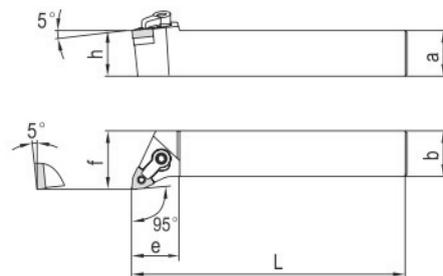
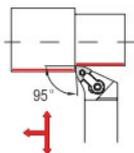


Order No.	ISO Code toolholder	Size(mm)						For insert	Shim	Lock pin	Clamp	Clamp screw
		a	b	L	h	f	e					
211-05-013	MVVNN2020K16	20	20	125	20	10	45	VN..1604..	IVSN-322	NL-34L	CL-30	XNS-510
211-05-015	MVVNN2525M16	25	25	150	25	12.5	45	VN..1604..	IVSN-322	NL-34L	CL-30	XNS-510
211-05-017	MVVNN3232P16	32	32	170	32	16	45	VN..1604..	IVSN-322	NL-34L	CL-30	XNS-510

TOOLHOLDERS WITH NEGATIVE RAKE ANGEL

MWLNR/L

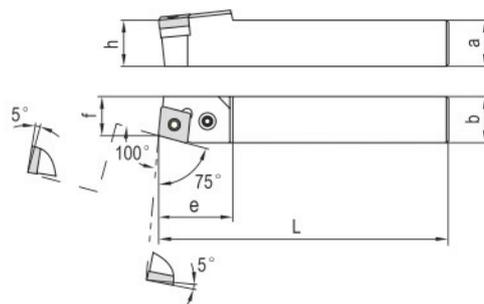
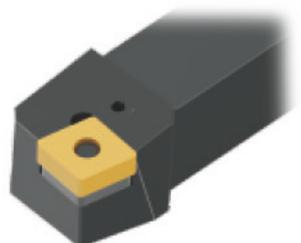
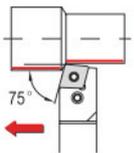
95°



Order No.		ISO Code toolholder	Size(mm)						For insert	Shim	Lock pin	Clamp	Clamp screw
Right hand	Left hand		a	b	L	h	f	e					
211-06-001	211-06-002	MWLNR/L2020K06	20	20	125	20	25	30	WN..0604..	IWSN-322	NL-34L	CL-6	XNS-36
211-06-003	211-06-004	MWLNR/L2525M06	25	25	150	25	32	30	WN..0604..	IWSN-322	NL-34L	CL-6	XNS-36
211-06-005	211-06-006	MWLNR/L3232P06	32	32	170	32	40	30	WN..0604..	IWSN-322	NL-34L	CL-6	XNS-36
211-06-007	211-06-008	MWLNR/L2020K08	20	20	125	20	25	32	WN..0804..	IWSN-433	NL-46	CL-20	XNS-48
211-06-009	211-06-010	MWLNR/L2525M08	25	25	150	25	32	32	WN..0804..	IWSN-433	NL-46	CL-20	XNS-48
211-06-011	211-06-012	MWLNR/L3232P08	32	32	170	32	40	32	WN..0804..	IWSN-433	NL-46	CL-20	XNS-48
211-06-013	211-06-014	MWLNR/L4040R08	40	40	200	40	50	32	WN..0804..	IWSN-433	NL-46	CL-20	XNS-48

PCBNR/L

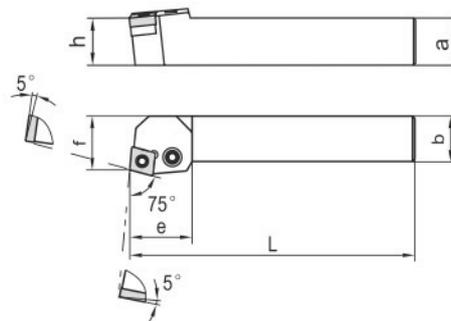
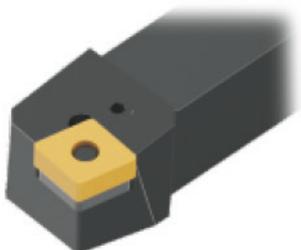
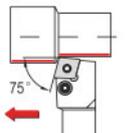
75°



Order No.		ISO Code toolholder	Size(mm)						Insert	Shim	Lever	Screw	Tubular rivet
Right hand	Left hand		a	b	L	h	f	e					
211-07-001	211-07-002	PCBNR/L3232P16	32	32	170	32	27	40	CN..1606..	PC1604	PL-5	PS0820A	SP08
211-07-003	211-07-004	PCBNR/L4040R16	40	40	200	40	35	40	CN..1606..	PC1604	PL-5	PS0820A	SP08
211-07-005	211-07-006	PCBNR/L4040R19	40	40	200	40	35	40	CN..1906..	PC1904	PL-6	PS1027	SP10
211-07-007	211-07-008	PCBNR/L5050S19	50	50	250	50	45	40	CN..1906..	PC1904	PL-6	PS1027	SP10
211-07-009	211-07-010	PCBNR/L4040R25	40	40	200	40	35	50	CN..2509..	PC2506	PL-8	PS1236	SP13
211-07-011	211-07-012	PCBNR/L5050S25	50	50	250	50	45	50	CN..2509..	PC2506	PL-8	PS1236	SP13

PCRR/L

75°

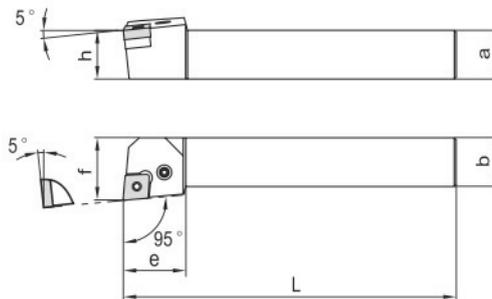
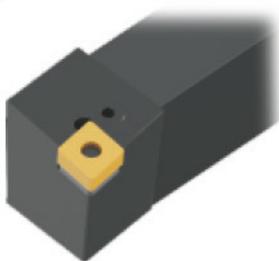
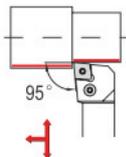


Order No.		ISO Code toolholder	Size(mm)						Insert	Shim	Lever	Screw	Tubular rivet
Right hand	Left hand		a	b	L	h	f	e					
211-07-013	211-07-014	PCRR/L3232P16	32	32	170	32	35	40	CN..1606..	PC1604	PL-5	PS0820A	SP08
211-07-015	211-07-016	PCRR/L4040R16	40	40	200	40	43	40	CN..1606..	PC1604	PL-5	PS0820A	SP08
211-07-017	211-07-018	PCRR/L4040R19	40	40	200	40	43	40	CN..1906..	PC1904	PL-6	PS1027	SP10
211-07-019	211-07-020	PCRR/L5050S19	50	50	250	50	53	40	CN..1906..	PC1904	PL-6	PS1027	SP10
211-07-021	211-07-022	PCRR/L4040R25	40	40	200	40	43	50	CN..2509..	PC2506	PL-8	PS1236	SP13
211-07-023	211-07-024	PCRR/L5050S25	50	50	250	50	53	50	CN..2509..	PC2506	PL-8	PS1236	SP13

TOOLHOLDERS WITH NEGATIVE RAKE ANGEL

PCLNR/L

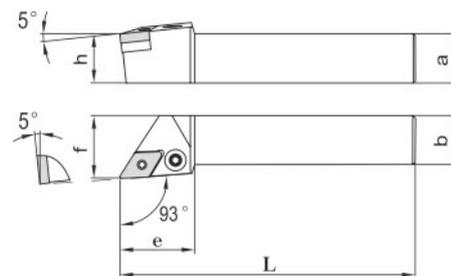
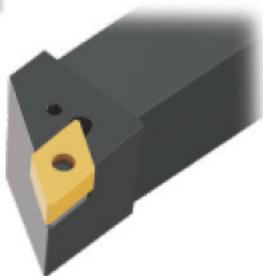
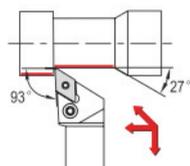
95°



Order No.		ISO Code toolholder	Size(mm)							Insert	Shim	Lever	Screw	Tubular rivet
Right hand	Left hand		a	b	L	h	f	e						
211-07-025	211-07-026	PCLNR/L3232P16	32	32	170	32	40	38	CN..1606..	PC1604	PL-5	PS0820A	SP08	
211-07-027	211-07-028	PCLNR/L4040R16	40	40	200	40	50	38	CN..1606..	PC1604	PL-5	PS0820A	SP08	
211-07-029	211-07-030	PCLNR/L4040R19	40	40	200	40	50	38	CN..1906..	PC1904	PL-6	PS1027	SP10	
211-07-031	211-07-032	PCLNR/L5050S19	50	50	250	50	60	38	CN..1906..	PC1904	PL-6	PS1027	SP10	
211-07-033	211-07-034	PCLNR/L4040R25	40	40	200	40	50	50	CN..2509..	PC2506	PL-8	PS1236	SP13	
211-07-035	211-07-036	PCLNR/L5050S25	50	50	250	50	60	50	CN..2509..	PC2506	PL-8	PS1236	SP13	

PDJNR/L

93°

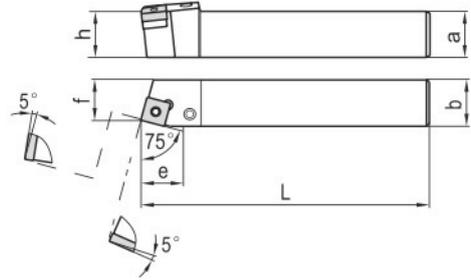
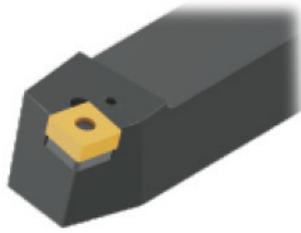
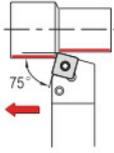


Order No.		ISO Code toolholder	Size(mm)							Insert	Shim	Lever	Screw	Tubular rivet
Right hand	Left hand		a	b	L	h	f	e						
211-08-001	211-08-002	PDJNR/L3232P15	32	32	170	32	40	38	DN..1506..	PD1503	PL-5M	PS0821	SP06	
211-08-003	211-08-004	PDJNR/L4040R15	40	40	200	40	50	38	DN..1506..	PD1503	PL-5M	PS0821	SP06	
211-08-005	211-08-006	PDJNR/L5050S15	50	50	250	50	60	38	DN..1506..	PD1503	PL-5M	PS0821	SP06	

TOOLHOLDERS WITH NEGATIVE RAKE ANGEL

PSBNR/L

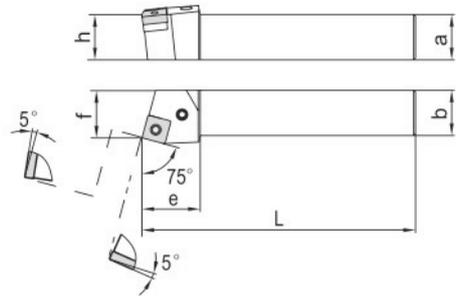
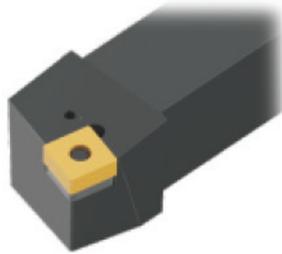
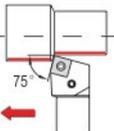
75°



Order No.		ISO Code toolholder	Size(mm)						Insert	Shim	Lever	Screw	Tubular rivet
Right hand	Left hand		a	b	L	h	f	e					
211-09-001	211-09-002	PSBNR/L3232P15	32	32	170	32	27	38	SN..1506..	PS1504	PL-5	PS0820A	SP08
211-09-003	211-09-004	PSBNR/L4040R15	40	40	200	40	35	38	SN..1506..	PS1504	PL-5	PS0820A	SP08
211-09-005	211-09-006	PSBNR/L4040R19	40	40	200	40	35	42	SN..1906..	PS1904	PL-6	PS1027	SP10
211-09-007	211-09-008	PSBNR/L5050S19	50	50	250	50	45	42	SN..1906..	PS1904	PL-6	PS1027	SP10
211-09-009	211-09-010	PSBNR/L4040R25	40	40	200	40	35	50	SN..2509..	PS2506	PL-8	PS1236	SP13
211-09-011	211-09-012	PSBNR/L5050S25	50	50	250	50	45	50	SN..2509..	PS2506	PL-8	PS1236	SP13

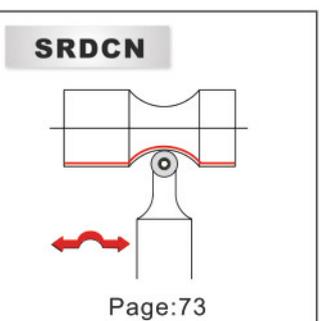
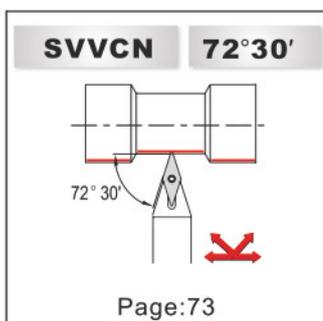
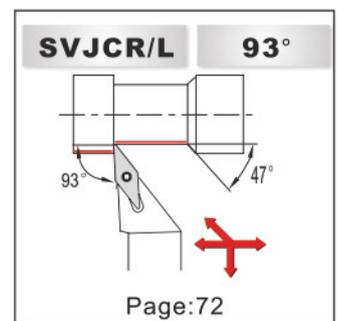
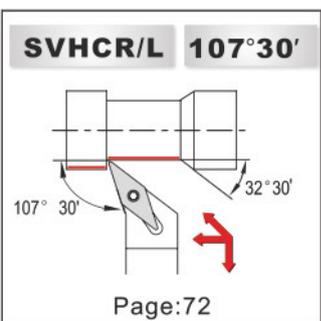
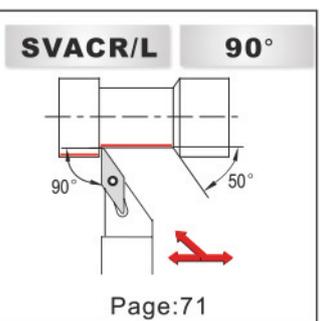
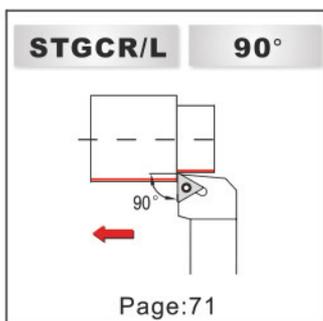
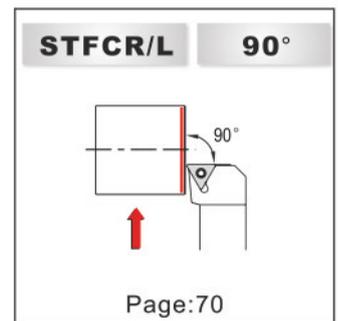
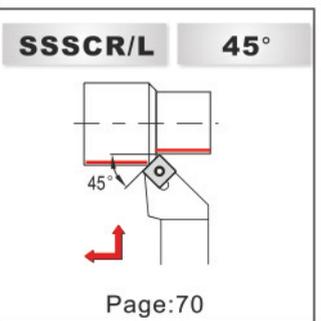
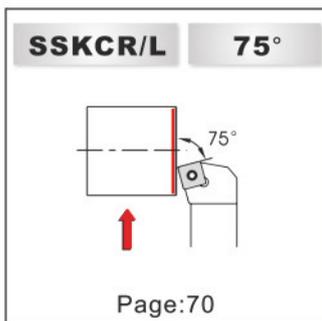
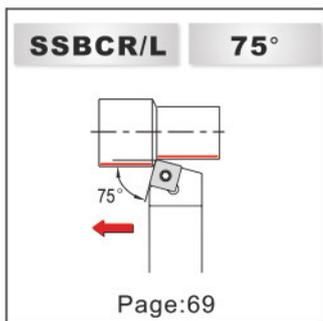
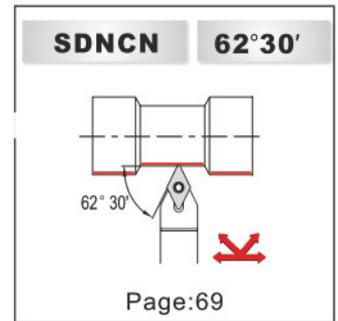
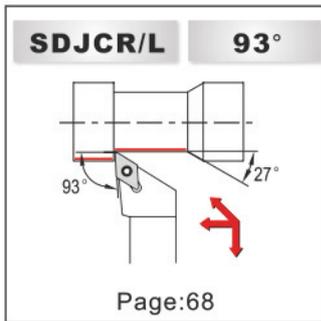
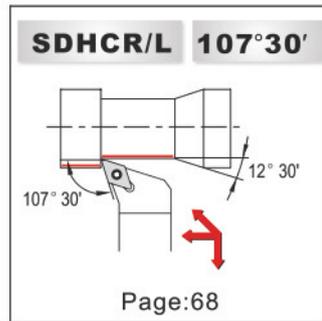
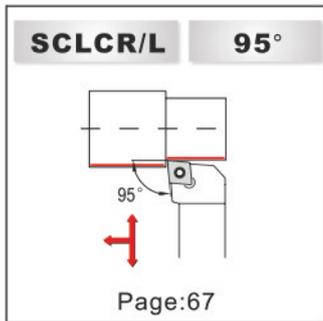
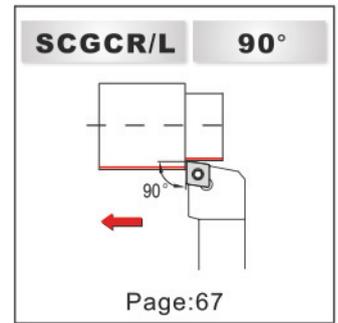
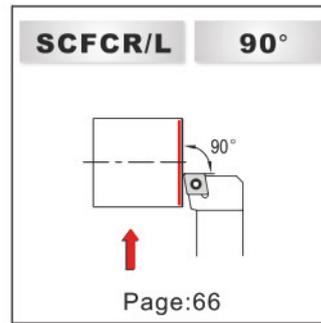
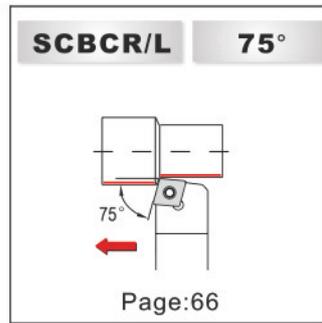
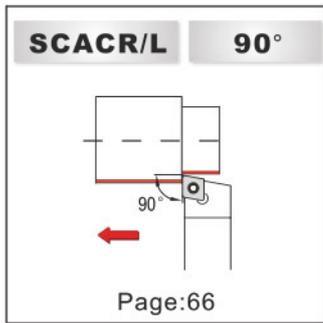
PSRNR/L

75°



Order No.		ISO Code toolholder	Size(mm)						Insert	Shim	Lever	Screw	Tubular rivet
Right hand	Left hand		a	b	L	h	f	e					
211-09-013	211-09-014	PSRNR/L3232P15	32	32	170	32	35	38	SN..1506..	PS1504	PL-5	PS0820A	SP08
211-09-015	211-09-016	PSRNR/L4040R15	40	40	200	40	43	38	SN..1506..	PS1504	PL-5	PS0820A	SP08
211-09-017	211-09-018	PSRNR/L4040R19	40	40	200	40	43	38	SN..1906..	PS1904	PL-6	PS1027	SP10
211-09-019	211-09-020	PSRNR/L5050S19	50	50	250	50	53	38	SN..1906..	PS1904	PL-6	PS1027	SP10
211-09-021	211-09-022	PSRNR/L4040R25	40	40	200	40	43	50	SN..2509..	PS2506	PL-8	PS1236	SP13
211-09-023	211-09-024	PSRNR/L5050S25	50	50	250	50	53	50	SN..2509..	PS2506	PL-8	PS1236	SP13

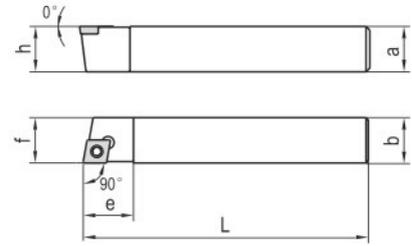
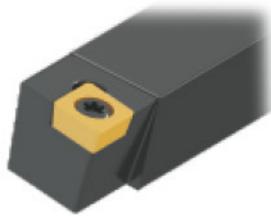
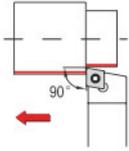
TOOLHOLDERS WITH POSITIVE RAKE ANGEL



TOOLHOLDERS WITH POSITIVE RAKE ANGEL

SCACR/L

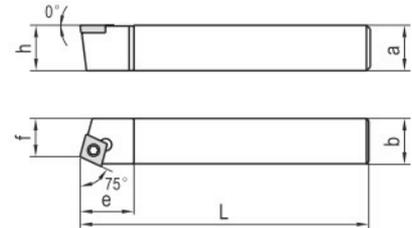
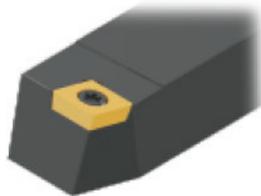
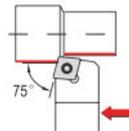
90°



Order No.		ISO Code toolholder	Size(mm)						For insert	Screw	Torx wrench
Right hand	Left hand		a	b	L	h	f	e			
211-10-001	211-10-002	SCACR/L1616H09	16	16	100	16	16	16	CC..09T3..	L60 M3.5x8.8	T15
211-10-003	211-10-004	SCACR/L1616M09	16	16	125	16	16	16	CC..09T3..	L60 M3.5x8.8	T15
211-10-005	211-10-006	SCACR/L2020H12	20	20	100	20	20	25	CC..1204..	L60 M5x10.8	T20
211-10-007	211-10-008	SCACR/L2020M12	20	20	125	20	20	25	CC..1204..	L60 M5x10.8	T20

SCBCR/L

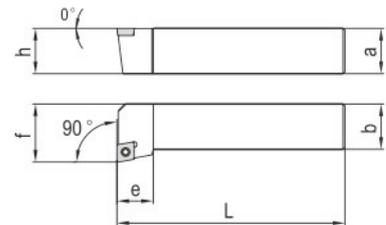
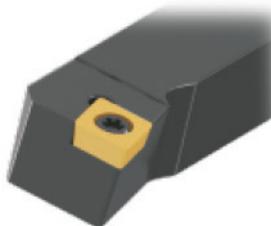
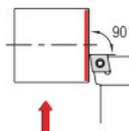
75°



Order No.		ISO Code toolholder	Size(mm)						For insert	Screw	Torx wrench
Right hand	Left hand		a	b	L	h	f	e			
211-10-009	211-10-010	SCBCR/L2525M12	25	25	150	25	22	25	CC..1204..	L60 M5x10.8	T20

SCFCR/L

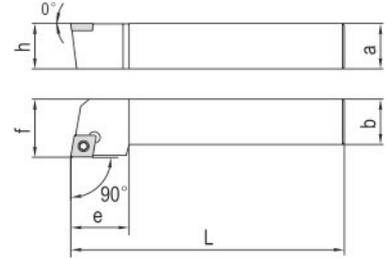
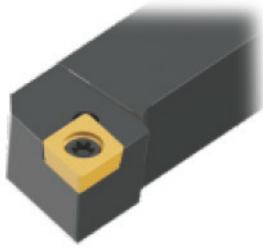
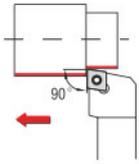
90°



Order No.		ISO Code toolholder	Size(mm)						For insert	Screw	Torx wrench
Right hand	Left hand		a	b	L	h	f	e			
211-10-011	211-10-012	SCFCR/L1616H09	16	16	100	16	20	16	CC..09T3..	L60 M3.5x8.8	T15
211-10-013	211-10-014	SCFCR/L2020K09	20	20	125	20	25	16	CC..09T3..	L60 M3.5x8.8	T15
211-10-015	211-10-016	SCFCR/L2525M12	25	25	150	25	32	25	CC..1204..	L60 M5x10.8	T20

SCGCR/L

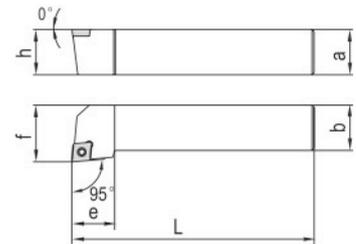
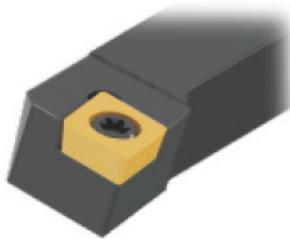
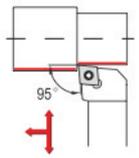
90°



Order No.		ISO Code toolholder	Size(mm)						For insert	Screw	Torx wrench
Right hand	Left hand		a	b	L	h	f	e			
211-10-017	211-10-018	SCGCR/L1616H09	16	16	100	16	20	16	CC..09T3..	L60 M3.5x8.8	T15
211-10-019	211-10-020	SCGCR/L2020K09	20	20	125	20	25	16	CC..09T3..	L60 M3.5x8.8	T15
211-10-021	211-10-022	SCGCR/L2525M12	25	25	150	25	32	25	CC..1204..	L60 M5x10.8	T20

SCLCR/L

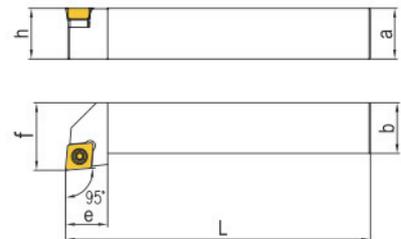
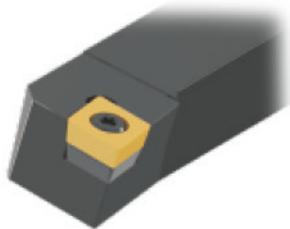
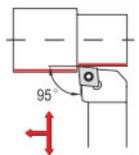
95°



Order No.		ISO Code toolholder	Size(mm)						For insert	Screw	Torx wrench
Right hand	Left hand		a	b	L	h	f	e			
211-10-023	211-10-024	SCLCR/L1616H09	16	16	100	16	20	16	CC..09T3..	L60 M3.5x8.8	T15
211-10-025	211-10-026	SCLCR/L2020K09	20	20	125	20	25	25	CC..09T3..	L60 M3.5x8.8	T15
211-10-027	211-10-028	SCLCR/L2020K12	20	20	125	20	25	25	CC..1204..	L60 M5x10.8	T20
211-10-029	211-10-030	SCLCR/L2525M12	25	25	150	25	32	25	CC..1204..	L60 M5x10.8	T20

SCLCR/L...D

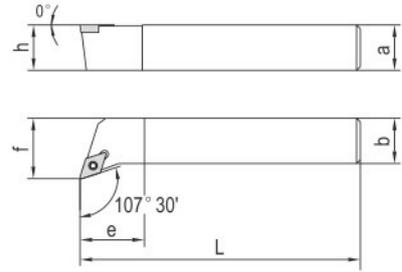
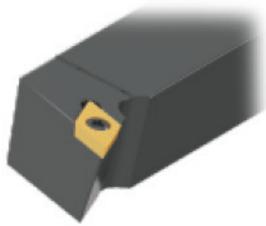
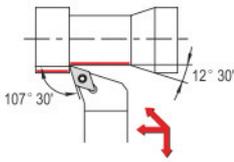
95°



Order No.		ISO Code toolholder	Size(mm)						Insert	Shim	Shim screw	Screw	Torx wrench
Right hand	Left hand		a	b	L	h	f	e					
211-10-031	211-10-032	SCLCR/L1616H09D	16	16	100	16	20	16	CC..09T3..	SKCP-343	SRS-3	MS-1156	T15
211-10-033	211-10-034	SCLCR/L2020K09D	20	20	125	20	25	25	CC..09T3..	SKCP-343	SRS-3	MS-1156	T15
211-10-035	211-10-036	SCLCR/L2020K12D	20	20	125	20	25	25	CC..1204..	SKCP-453	SRS-4	MS-1158	T20
211-10-037	211-10-038	SCLCR/L2525M12D	25	25	150	25	32	25	CC..1204..	SKCP-453	SRS-4	MS-1158	T20

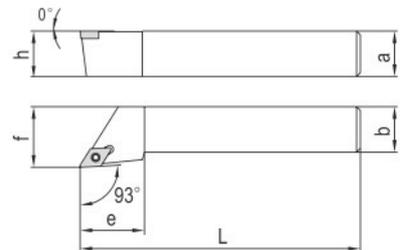
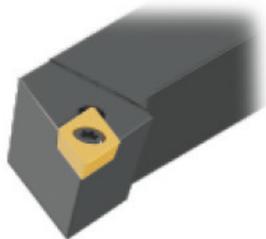
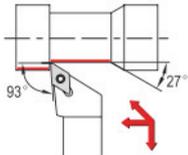
TOOLHOLDERS WITH POSITIVE RAKE ANGEL

SDHCR/L 107°30'



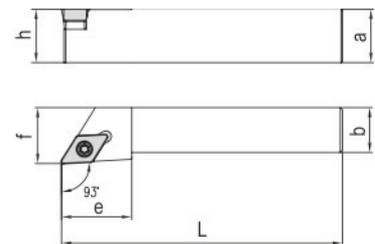
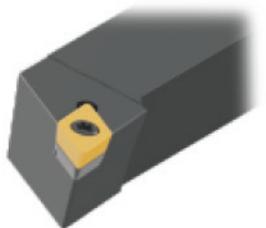
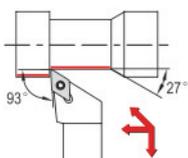
Order No.		ISO Code toolholder	Size(mm)						For insert	Screw	Torx wrench
Right hand	Left hand		a	b	L	h	f	e			
211-11-001	211-11-002	SDHCR/L1616H07	16	16	100	16	20	16	DC..0702..	L60 M2.5x5.2	T8
211-11-003	211-11-004	SDHCR/L2020K07	20	20	125	20	25	16	DC..0702..	L60 M2.5x5.2	T8
211-11-005	211-11-006	SDHCR/L2525M07	25	25	150	25	32	18	DC..0702..	L60 M2.5x5.2	T8
211-11-007	211-11-008	SDHCR/L1616H11	16	16	100	16	20	18	DC..11T3..	L60 M3.5x8.8	T15
211-11-009	211-11-010	SDHCR/L2020K11	20	20	125	20	25	18	DC..11T3..	L60 M3.5x8.8	T15
211-11-011	211-11-012	SDHCR/L2525M11	25	25	150	25	32	25	DC..11T3..	L60 M3.5x8.8	T15

SDJCR/L 93°



Order No.		ISO Code toolholder	Size(mm)						For insert	Screw	Torx wrench
Right hand	Left hand		a	b	L	h	f	e			
211-11-013	211-11-014	SDJCR/L1212F07	12	12	80	12	16	16	DC..0702..	L60 M2.5x5.2	T8
211-11-015	211-11-016	SDJCR/L1616H07	16	16	100	16	20	16	DC..0702..	L60 M2.5x5.2	T8
211-11-017	211-11-018	SDJCR/L2020K07	20	20	125	20	25	16	DC..0702..	L60 M2.5x5.2	T8
211-11-019	211-11-020	SDJCR/L1616H11	16	16	100	16	20	22	DC..11T3..	L60 M3.5x8.8	T15
211-11-021	211-11-022	SDJCR/L2020K11	20	20	125	20	25	22	DC..11T3..	L60 M3.5x8.8	T15
211-11-023	211-11-024	SDJCR/L2525M11	25	25	150	25	32	22	DC..11T3..	L60 M3.5x8.8	T15

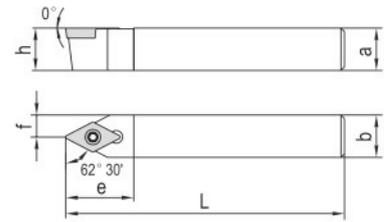
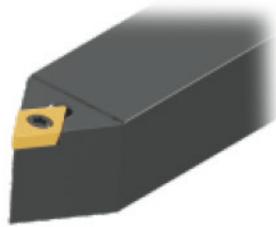
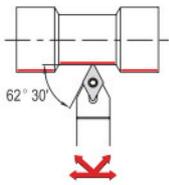
SDJCR/L...D 93°



Order No.		ISO Code toolholder	Size(mm)						Insert	Shim	Shim screw	Screw	Torx wrench
Right hand	Left hand		a	b	L	h	f	e					
211-11-025	211-11-026	SDJCR/L1616H11D	16	16	100	16	20	22	DC..11T3..	SKDP-343	SRS-3	MS-1156	T15
211-11-027	211-11-028	SDJCR/L2020K11D	20	20	125	20	25	22	DC..11T3..	SKDP-343	SRS-3	MS-1156	T15
211-11-029	211-11-030	SDJCR/L2525M11D	25	25	150	25	32	22	DC..11T3..	SKDP-343	SRS-3	MS-1156	T15

SDNCN

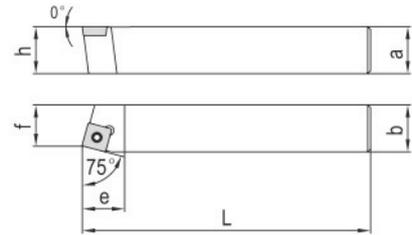
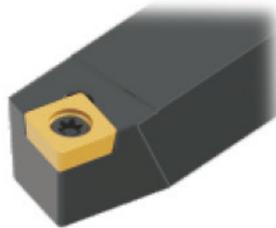
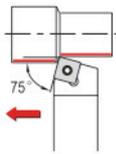
62° 30'



Order No.	ISO Code toolholder	Size(mm)						For insert	Screw	Torx wrench
		a	b	L	h	f	e			
211-11-031	SDNCN1616H07	16	16	100	16	8	16	DC..0702..	L60 M2.5x5.2	T8
211-11-033	SDNCN1616M07	16	16	150	16	8	16	DC..0702..	L60 M2.5x5.2	T8
211-11-035	SDNCN2020H07	20	20	100	20	10	16	DC..0702..	L60 M2.5x5.2	T8
211-11-037	SDNCN2020M07	20	20	150	20	10	16	DC..0702..	L60 M2.5x5.2	T8
211-11-039	SDNCN1616H11	16	16	100	16	8	22	DC..11T3..	L60 M3.5x8.8	T15
211-11-041	SDNCN1616M11	16	16	150	16	8	22	DC..11T3..	L60 M3.5x8.8	T15
211-11-043	SDNCN2020H11	20	20	100	20	10	22	DC..11T3..	L60 M3.5x8.8	T15
211-11-045	SDNCN2020K11	20	20	150	20	10	22	DC..11T3..	L60 M3.5x8.8	T15

SSBCR/L

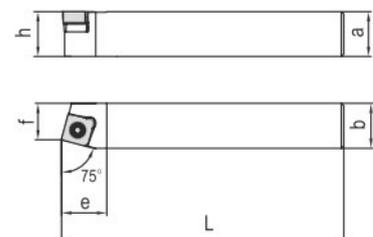
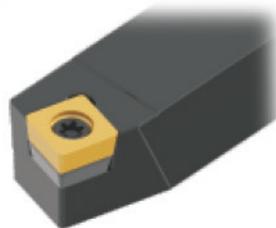
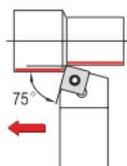
75°



Order No.		ISO Code toolholder	Size(mm)						For insert	Screw	Torx wrench
Right hand	Left hand		a	b	L	h	f	e			
211-12-001	211-12-002	SSBCR/L1616H09	16	16	100	16	13	16	SC..09T3..	L60 M3.5x8.8	T15

SSBCR/L...D

75°

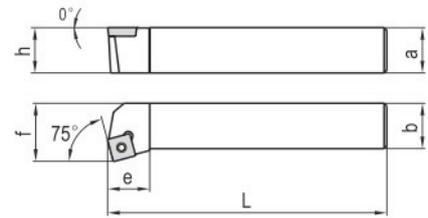
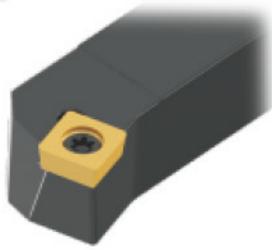
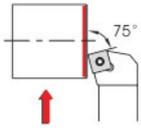


Order No.		ISO Code toolholder	Size(mm)						Insert	Shim	Shim screw	Screw	Torx wrench
Right hand	Left hand		a	b	L	h	f	e					
211-12-003	211-12-004	SSBCR/L1616H09D	16	16	100	16	20	16	SC..09T3	SKSP-343	SRS-3	MS-1156	T15
211-12-005	211-12-006	SSBCR/L2020K09D	20	20	125	20	25	25	SC..09T3	SKSP-343	SRS-3	MS-1156	T15
211-12-007	211-12-008	SSBCR/L2020K12D	20	20	125	20	25	25	SC..1204	SKSP-453	SRS-4	MS-1158	T20
211-12-009	211-12-010	SSBCR/L2525M12D	25	25	150	25	22	25	SC..1204	SKSP-453	SRS-4	MS-1158	T20

TOOLHOLDERS WITH POSITIVE RAKE ANGEL

SSKCR/L

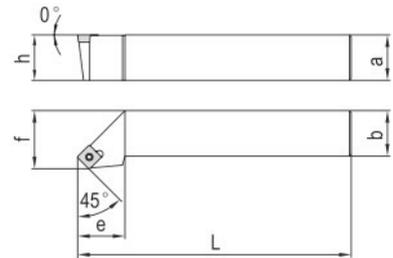
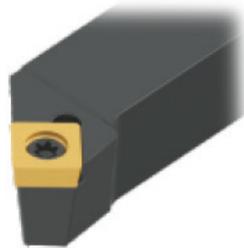
75°



Order No.		ISO Code toolholder	Size(mm)						For insert	Screw	Torx wrench
Right hand	Left hand		a	b	L	h	f	e			
211-12-011	211-12-012	SSKCR/L1616H09	16	16	100	16	20	20	SC..09T3	L60 M3.5x8.8	T15
211-12-013	211-12-014	SSKCR/L2020K09	20	20	125	20	25	20	SC..09T3	L60 M3.5x8.8	T15
211-12-015	211-12-016	SSKCR/L2020K12	20	20	125	20	25	28	SC..1204	L60 M5x10.8	T20
211-12-017	211-12-018	SSKCR/L2525M12	25	25	150	25	32	28	SC..1204	L60 M5x10.8	T20

SSSCR/L

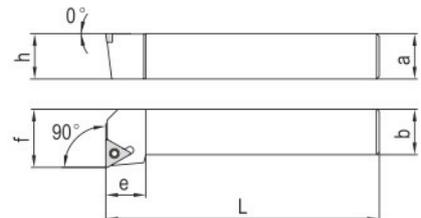
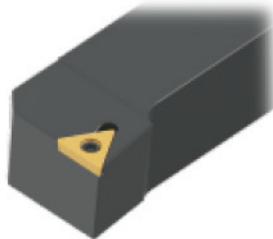
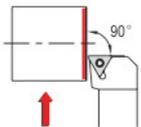
45°



Order No.		ISO Code toolholder	Size(mm)						For insert	Screw	Torx wrench
Right hand	Left hand		a	b	L	h	f	e			
211-12-019	211-12-020	SSSCR/L1616H09	16	16	100	16	20	16	SC..09T3..	L60 M3.5x8.8	T15
211-12-021	211-12-022	SSSCR/L2020K09	20	20	125	20	25	25	SC..09T3..	L60 M3.5x8.8	T15
211-12-023	211-12-024	SSSCR/L2020K12	20	20	125	20	25	25	SC..1204..	L60 M5x10.8	T20

STFCR/L

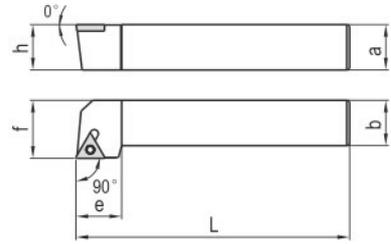
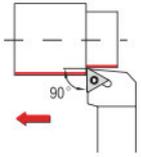
90°



Order No.		ISO Code toolholder	Size(mm)						For insert	Screw	Torx wrench
Right hand	Left hand		a	b	L	h	f	e			
211-13-001	211-13-002	STFCR/L2020K11	20	20	125	20	25	16	TC..1102..	L60 M2.5x5.2	T8
211-13-003	211-13-004	STFCR/L2020K16	20	20	125	20	25	20	TC..16T3..	L60 M3.5x8.8	T15
211-13-005	211-13-006	STFCR/L2525M16	25	25	150	25	32	20	TC..16T3..	L60 M3.5x8.8	T15

STGCR/L

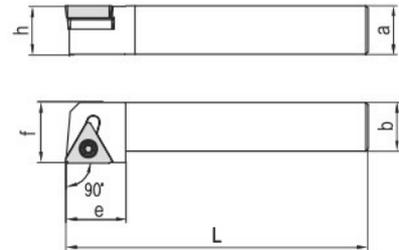
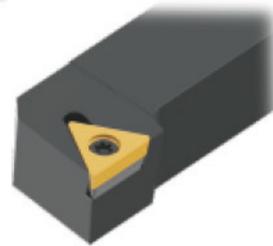
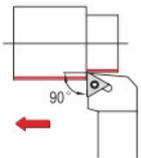
90°



Order No.		ISO Code toolholder	Size(mm)						For insert	Screw	Torx wrench
Right hand	Left hand		a	b	L	h	f	e			
211-13-007	211-13-008	STGCR/L1616H11	16	16	100	16	20	16	TC..1102..	L60 M2.5x5.2	T8
211-13-009	211-13-010	STGCR/L2020K11	20	20	125	20	25	18	TC..1102..	L60 M2.5x5.2	T8
211-13-011	211-13-012	STGCR/L1616H16	16	16	100	16	20	20	TC..16T3..	L60 M3.5x8.8	T15
211-13-013	211-13-014	STGCR/L2020K16	20	20	125	20	25	20	TC..16T3..	L60 M3.5x8.8	T15
211-13-015	211-13-016	STGCR/L2525M16	25	25	150	25	32	20	TC..16T3..	L60 M3.5x8.8	T15

STGCR/L...D

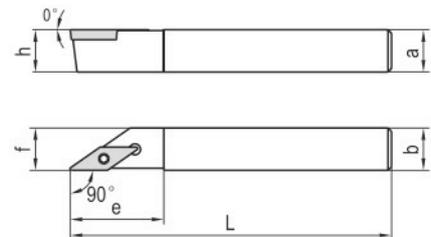
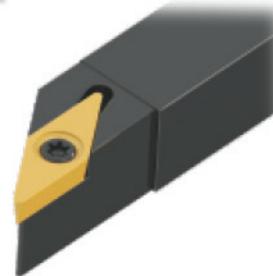
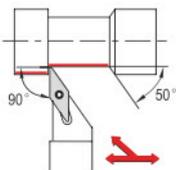
90°



Order No.		ISO Code toolholder	Size(mm)						Insert	Shim	Shim screw	Screw	Torx wrench
Right hand	Left hand		a	b	L	h	f	e					
211-13-017	211-13-018	STGCR/L1616H16D	16	16	100	16	20	20	TC..16T3..	SKTP-343	SRS-3	MS-1156	T15
211-13-019	211-13-020	STGCR/L2020K16D	20	20	125	20	25	20	TC..16T3..	SKTP-343	SRS-3	MS-1156	T15
211-13-021	211-13-022	STGCR/L2525M16D	25	25	150	25	32	20	TC..16T3..	SKTP-343	SRS-3	MS-1156	T15

SVACR/L

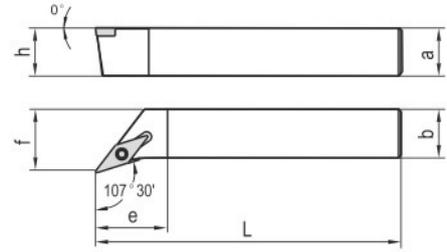
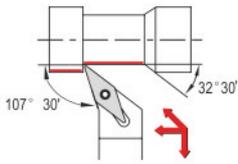
90°



Order No.		ISO Code toolholder	Size(mm)						For insert	Screw	Torx wrench
Right hand	Left hand		a	b	L	h	f	e			
211-14-001	211-14-002	SVACR/L1616M11	16	16	150	16	16	22	VC..1103..	L60 M2.5x5.2	T8
211-14-003	211-14-004	SVACR/L1616M16	16	16	150	16	16	30	VC..1604..	L60 M3.5x8.8	T15

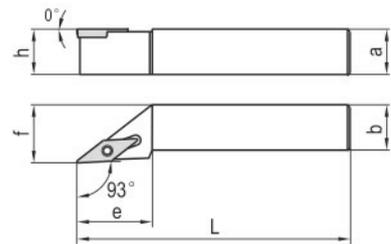
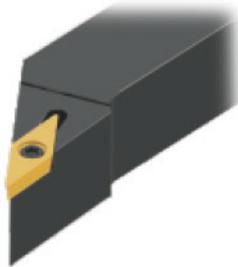
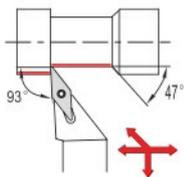
TOOLHOLDERS WITH POSITIVE RAKE ANGEL

SVHCR/L 107°30'



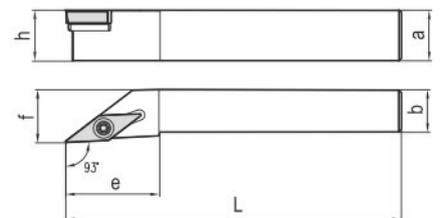
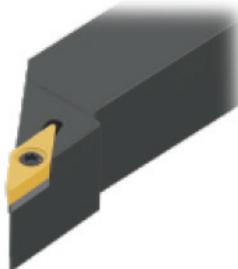
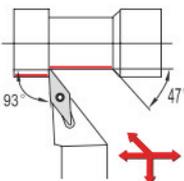
Order No.		ISO Code toolholder	Size(mm)						For insert	Screw	Torx wrench
Right hand	Left hand		a	b	L	h	f	e			
211-14-005	211-14-006	SVHCR/L1616H11	16	16	100	16	20	27	VC..1103..	L60 M2.5x5.2	T8
211-14-007	211-14-008	SVHCR/L2020K11	20	20	125	20	25	27	VC..1103..	L60 M2.5x5.2	T8
211-14-009	211-14-010	SVHCR/L2525M11	25	25	150	25	32	27	VC..1103..	L60 M2.5x5.2	T8
211-14-011	211-14-012	SVHCR/L2020K16	20	20	125	20	25	32	VC..1604..	L60 M3.5x8.8	T15
211-14-013	211-14-014	SVHCR/L2525M16	25	25	150	25	32	32	VC..1604..	L60 M3.5x8.8	T15

SVJCR/L 93°



Order No.		ISO Code toolholder	Size(mm)						For insert	Screw	Torx wrench
Right hand	Left hand		a	b	L	h	f	e			
211-14-015	211-14-016	SVJCR/L1616H11	16	16	100	16	20	22	VC..1103..	L60 M2.5x5.2	T8
211-14-017	211-14-018	SVJCR/L2020K11	20	20	125	20	25	25	VC..1103..	L60 M2.5x5.2	T8
211-14-019	211-14-020	SVJCR/L2525M11	25	25	150	25	32	35	VC..1103..	L60 M2.5x5.2	T8
211-14-021	211-14-022	SVJCR/L2020K16	20	20	125	20	25	35	VC..1604..	L60 M3.5x8.8	T15
211-14-023	211-14-024	SVJCR/L2525M16	25	25	150	25	32	35	VC..1604..	L60 M3.5x8.8	T15

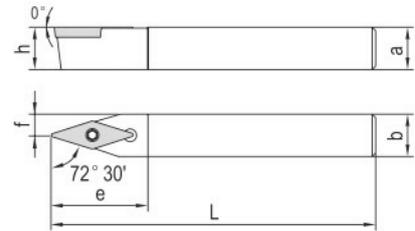
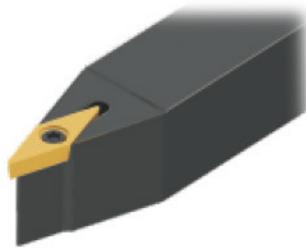
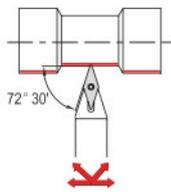
SVJBR/L...D 93°



Order No.		ISO Code toolholder	Size(mm)						Insert	Shim	Shim screw	Screw	Torx wrench
Right hand	Left hand		a	b	L	h	f	e					
211-14-025	211-14-026	SVJBR/L2020K16D	20	20	125	20	25	25	VB..1604..	SKVN-343	SRS-3	MS-1156	T15
211-14-027	211-14-028	SVJBR/L2525M16D	25	25	150	25	32	35	VB..1604..	SKVN-343	SRS-3	MS-1156	T15

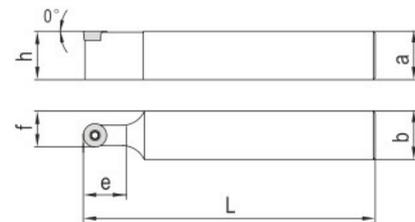
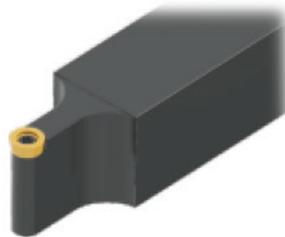
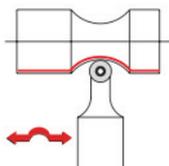
SVVCN

72° 30'



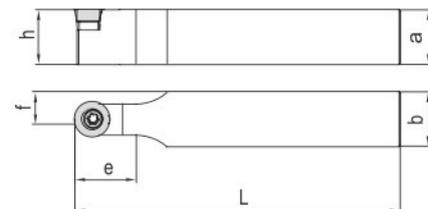
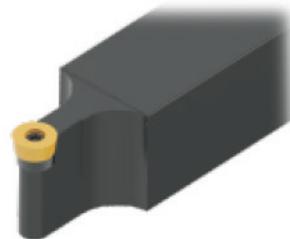
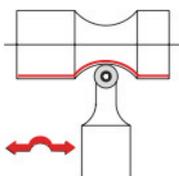
Order No.	ISO Code toolholder	Size(mm)						For insert	Screw	Torx wrench
		a	b	L	h	f	e			
211-14-029	SVVCN1616H11	16	16	100	16	8	25	VC..1103..	L60 M2.5x5.2	T8
211-14-031	SVVCN2020K11	20	20	125	20	10	25	VC..1103..	L60 M2.5x5.2	T8
211-14-033	SVVCN2525M11	25	25	150	25	12.5	25	VC..1103..	L60 M2.5x5.2	T8
211-14-035	SVVCN2020K16	20	20	125	20	10	35	VC..1604..	L60 M3.5x8.8	T15
211-14-037	SVVCN2525M16	25	25	150	25	12.5	35	VC..1604..	L60 M3.5x8.8	T15

SRDCN



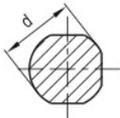
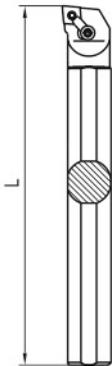
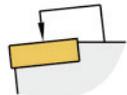
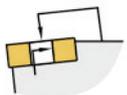
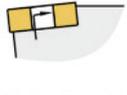
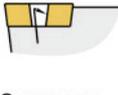
Order No.	ISO Code toolholder	Size(mm)						For insert	Screw	Hex wrench
		a	b	L	h	f	e			
211-15-001	SRDCN2020K08	20	20	125	20	10	35	RC..0803..	L60 M3x6	T10
211-15-002	SRDCN2525M08	25	25	150	25	12.5	35	RC..0803..	L60 M3x6	T10
211-15-003	SRDCN2020K10	20	20	125	20	10	35	RC..1003..	L60 M3.5x8.8	T15
211-15-004	SRDCN2525M10	25	25	150	25	12.5	35	RC..1003..	L60 M3.5x8.8	T15
211-15-005	SRDCN2020K12	20	20	125	20	10	35	RC..1204..	L60 M3.5x14	T15
211-15-006	SRDCN2525M12	25	25	150	25	12.5	35	RC..1204..	L60 M3.5x14	T15
211-15-007	SRDCN3232P12	32	32	170	32	16	40	RC..1204..	L60 M3.5x14	T15
211-15-008	SRDCN2525M16	25	25	170	25	12.5	35	RC..1606..	L60 M4x15	T15
211-15-009	SRDCN3232P16	32	32	170	32	16	40	RC..1606..	L60 M4x15	T15

SRDCN...D



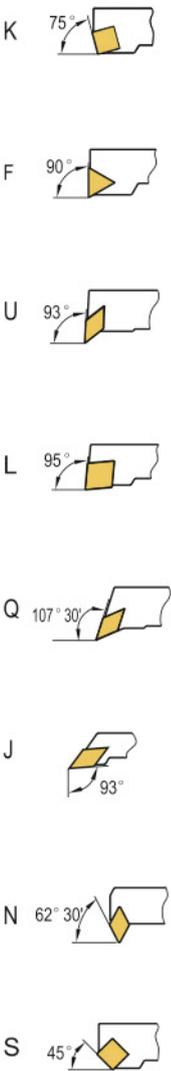
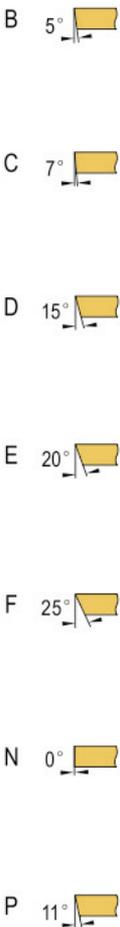
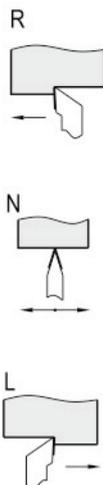
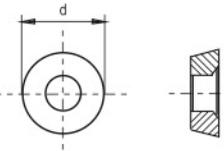
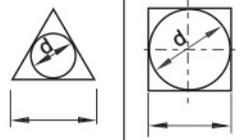
Order No.	ISO Code toolholder	Size(mm)						Insert	Shim	Shim screw	Screw	Torx wrench
		a	b	L	h	f	e					
211-15-010	SRDCN2020K09D	20	20	125	20	10	10	RC..09T3..	SR-3	-	MS-1156	T15
211-15-011	SRDCN2525M09D	25	25	150	25	12.5	12.5	RC..09T3..	SR-3	-	MS-1156	T15

ISO NAMENCLATURE FOR BORING BAR

<p>S: Steel Bar</p> <p>A: Steel Bar with inner coolant</p> <p>C: Carbide shank Bar</p> <p>E: Carbide shank Bar with inner coolant</p>	 <p>toleranze: g7</p>	 <p>A = 32 B = 40 C = 50 D = 60 E = 70 F = 80 G = 90 H = 100 J = 110 K = 125 L = 140 M = 150 N = 160 P = 170 Q = 180 R = 200 S = 250 T = 300 U = 350 V = 400 W = 450 Y = 500</p>	<p>C</p>  <p>Top Clamping</p> <p>M</p>  <p>Top and hole clamping</p> <p>P</p>  <p>Hole clamping</p> <p>S</p>  <p>Screw on</p>	<p>C </p> <p>D </p> <p>K </p> <p>L </p> <p>R </p> <p>S </p> <p>T </p> <p>V </p> <p>W </p>
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S	25	U	S	T
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Type of Bar	Shank diameter	Total Length	Clamping Method	Insert Shape
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d (mm)																																																					
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09	7/32	5.55	05																																																		
11	1/4	6.35	06																																																		
16	3/8	9.52	09																																																		
22	1/2	12.7	12																																																		
27	5/8	15.8	15																																																		
33	3/4	19.0	19																																																		
44	1	25.4	25																																																		

F

C

R

16

D

Style & lead angle

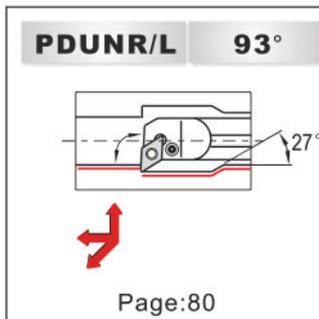
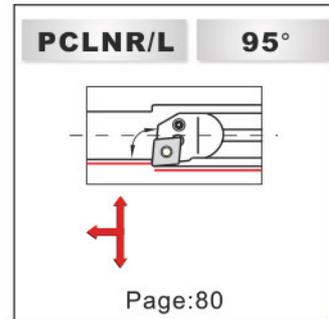
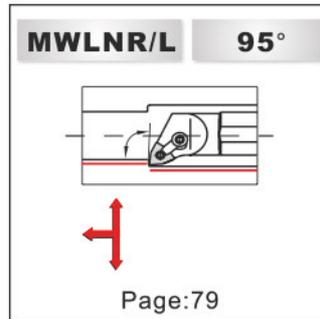
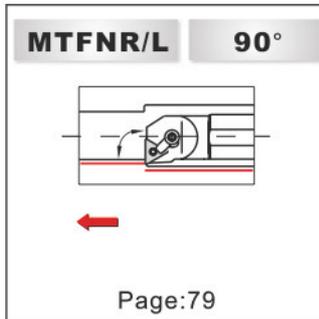
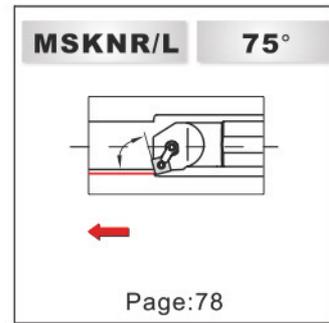
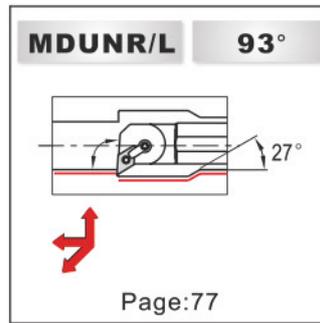
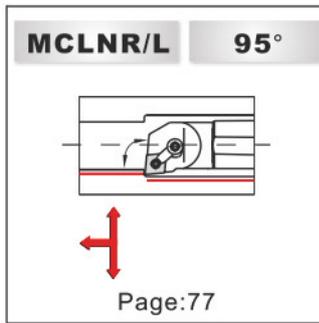
Clearance angle

Hand of Bar

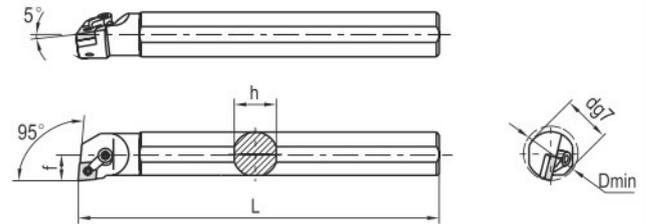
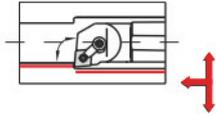
Length of cutting edge

Defined by the manufacturer

BORING BAR WITH NEGATIVE RAKE ANGEL

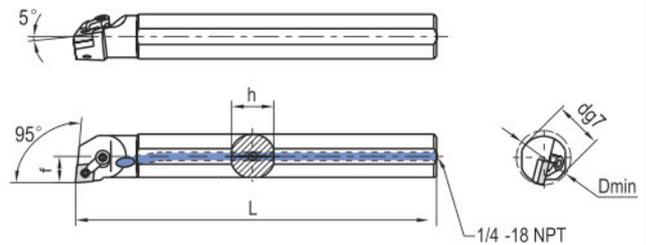
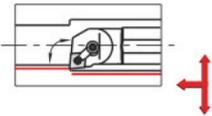


S..MCLNR/L 95°



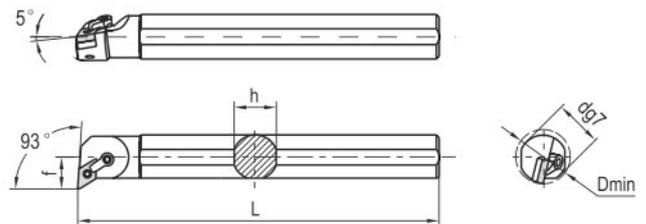
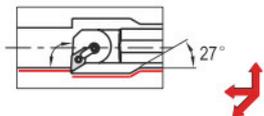
Order No.		ISO Code toolholder	Size(mm)					For Insert	Shim	Lock pin	Clamp	Clamp screw
Right hand	Left hand		d	f	L	h	Dmin					
221-01-001	221-01-002	S25R-MCLNR/L12	25	17	200	23	32	CN..1204..	-	NL-44	CL-12	XNS-47
221-01-003	221-01-004	S32S-MCLNR/L12	32	22	250	30	40	CN..1204..	ICSN-433	NL-46	CL-12	XNS-48
221-01-005	221-01-006	S40T-MCLNR/L12	40	27	300	37	50	CN..1204..	ICSN-433	NL-46	CL-12	XNS-48
221-01-007	221-01-008	S50W-MCLNR/L12	50	35	450	47	63	CN..1204..	ICSN-433	NL-46	CL-12	XNS-48
221-01-009	221-01-010	S40T-MCLNR/L16	40	27	300	37	50	CN..1606..	ICSN-533	NL-58	CL-12	XNS-59
221-01-011	221-01-012	S50W-MCLNR/L16	50	35	450	47	63	CN..1606..	ICSN-533	NL-58	CL-12	XNS-59

A..MCLNR/L 95°



Order No.		ISO Code toolholder	Size(mm)					For Insert	Shim	Lock pin	Clamp	Clamp screw
Right hand	Left hand		d	f	L	h	Dmin					
225-01-001	225-01-002	A25R-MCLNR/L12	25	17	200	23	32	CN..1204..	-	NL-44	CL-20	XNS-47
225-01-003	225-01-004	A32S-MCLNR/L12	32	22	250	30	40	CN..1204..	ICSN-433	NL-46	CL-20	XNS-48
225-01-005	225-01-006	A40T-MCLNR/L12	40	27	300	37	50	CN..1204..	ICSN-433	NL-46	CL-20	XNS-48
225-01-007	225-01-008	A50W-MCLNR/L12	50	35	450	46	63	CN..1204..	ICSN-433	NL-46	CL-20	XNS-48
225-01-009	225-01-010	A40T-MCLNR/L16	40	27	300	37	50	CN..1606..	ICSN-533	NL-58	CL-12	XNS-59
225-01-011	225-01-012	A50W-MCLNR/L16	50	35	450	47	63	CN..1606..	ICSN-533	NL-58	CL-12	XNS-59

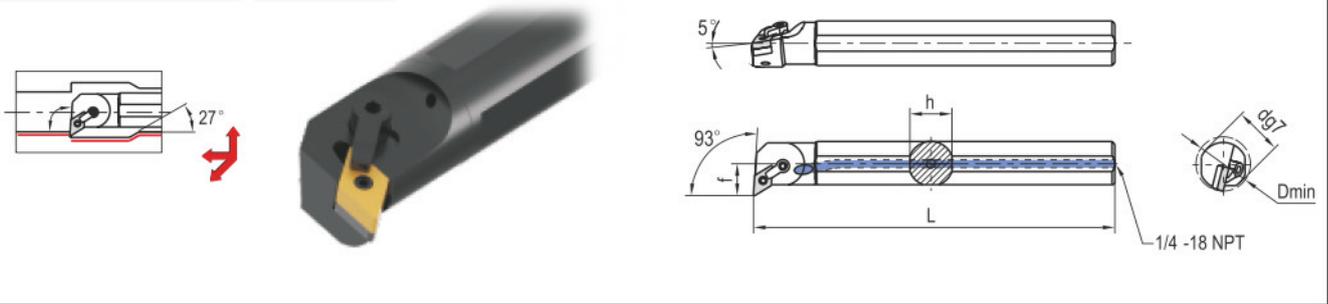
S..MDUNR/L 93°



Order No.		ISO Code toolholder	Size(mm)					For Insert	Shim	Lock pin	Clamp	Clamp screw
Right hand	Left hand		d	f	L	h	Dmin					
221-02-001	221-02-002	S25R-MDUNR/L11	25	17	200	23	32	DN..1104..	-	NL-33L	CL-20	XNS-48
221-02-003	221-02-004	S32S-MDUNR/L11	32	22	250	30	40	DN..1104..	IDSN-322	NL-34L	CL-20	XNS-48
221-02-005	221-02-006	S32S-MDUNR/L15	32	22	250	30	40	DN..1506..	IDSN-433	NL-46L	CL-12	XNS-59
221-02-007	221-02-008	S40T-MDUNR/L15	40	27	300	37	50	DN..1506..	IDSN-433	NL-46L	CL-12	XNS-59
221-02-009	221-02-010	S50W-MDUNR/L15	50	35	450	47	63	DN..1506..	IDSN-433	NL-46L	CL-12	XNS-59

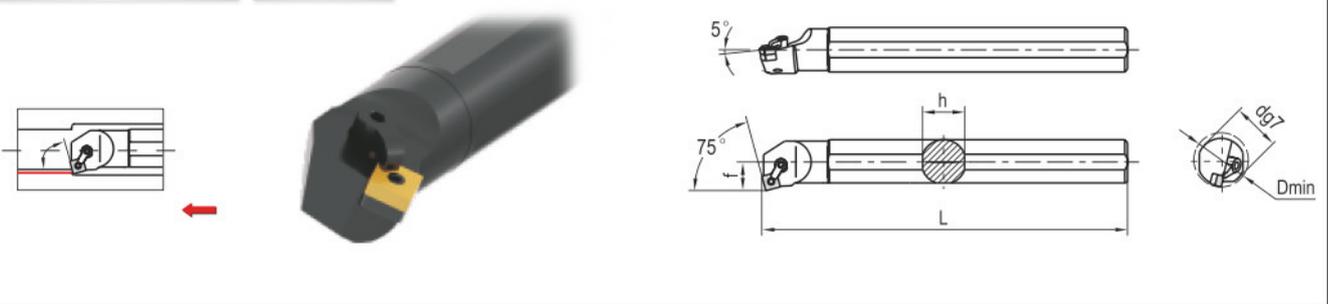
BORING BAR WITH NEGATIVE RAKE ANGEL

A..MDUNR/L 93°



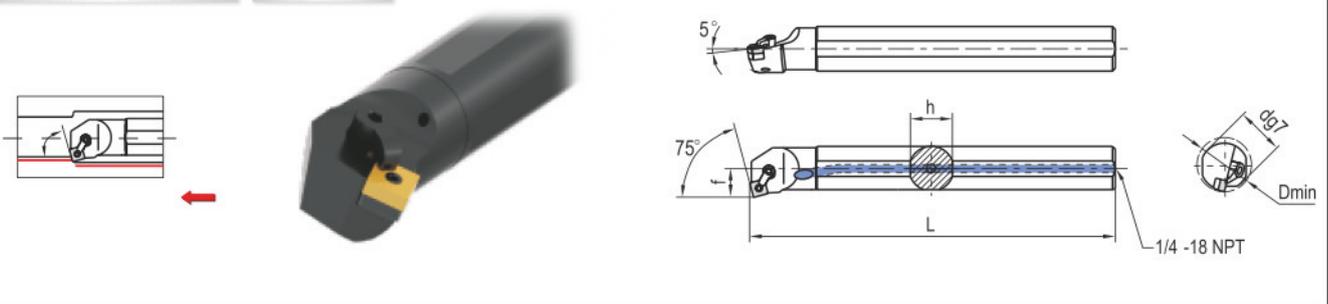
Order No.		ISO Code toolholder	Size(mm)					For Insert	Shim	Lock pin	Clamp	Clamp screw
Right hand	Left hand		d	f	L	h	Dmin					
225-02-001	225-02-002	A25R-MDUNR/L11	25	17	200	23	32	DN..1104..	-	NL-33L	CL-20	XNS-48
225-02-003	225-02-004	A32S-MDUNR/L11	32	22	250	30	40	DN..1104..	IDSN-322	NL-34L	CL-20	XNS-48
225-02-005	225-02-006	A32S-MDUNR/L15	32	22	250	30	40	DN..1506..	IDSN-433	NL-46L	CL-12	XNS-59
225-02-007	225-02-008	A40T-MDUNR/L15	40	27	300	37	50	DN..1506..	IDSN-433	NL-46L	CL-12	XNS-59
225-02-009	225-02-010	A50W-MDUNR/L15	50	35	450	47	63	DN..1506..	IDSN-433	NL-46L	CL-12	XNS-59

S..MSKNR/L 75°



Order No.		ISO Code toolholder	Size(mm)					For Insert	Shim	Lock pin	Clamp	Clamp screw
Right hand	Left hand		d	f	L	h	Dmin					
221-03-001	221-03-002	S32S-MSKNR/L12	32	22	250	30	40	SN..1204..	ISSN-433	NL-46	CL-9	XNS-59
221-03-003	221-03-004	S40T-MSKNR/L12	40	27	300	37	50	SN..1204..	ISSN-433	NL-46	CL-9	XNS-59
221-03-005	221-03-006	S50W-MSKNR/L12	50	35	450	46	63	SN..1204..	ISSN-433	NL-46	CL-9	XNS-59
221-03-007	221-03-008	S40T-MSKNR/L15	40	27	300	37	50	SN..1506..	ISSN-533	NL-58	CL-12	XNS-59
221-03-009	221-03-010	S50W-MSKNR/L15	50	35	450	47	63	SN..1506..	ISSN-533	NL-58	CL-12	XNS-59

A..MSKNR/L 75°

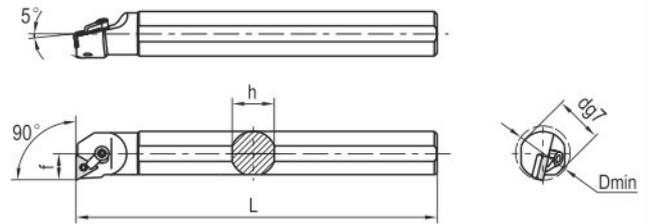
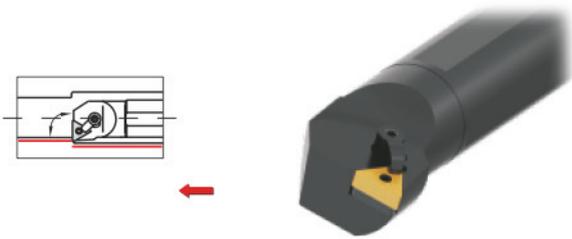


Order No.		ISO Code toolholder	Size(mm)					For Insert	Shim	Lock pin	Clamp	Clamp screw
Right hand	Left hand		d	f	L	h	Dmin					
225-03-001	225-03-002	A32S-MSKNR/L12	32	22	250	30	40	SN..1204..	ISSN-433	NL-46	CL-9	XNS-59
225-03-003	225-03-004	A40T-MSKNR/L12	40	27	300	37	50	SN..1204..	ISSN-433	NL-46	CL-9	XNS-59
225-03-005	225-03-006	A40T-MSKNR/L15	40	27	300	37	50	SN..1506..	ISSN-533	NL-58	CL-12	XNS-59

BORING BAR WITH NEGATIVE RAKE ANGEL

S..MTFNR/L

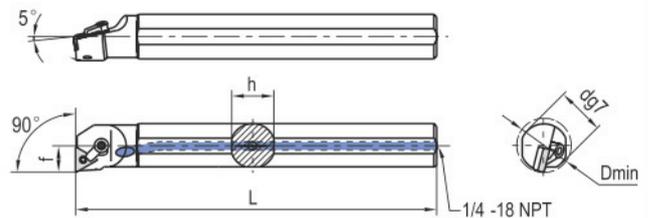
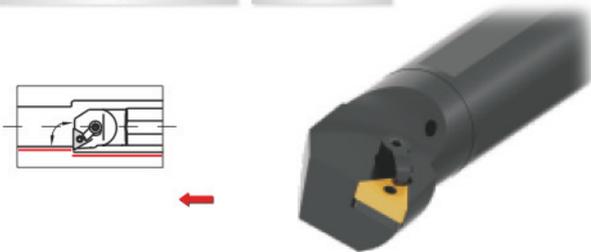
90°



Order No.		ISO Code toolholder	Size(mm)					For Insert	Shim	Lock pin	Clamp	Clamp screw
Right hand	Left hand		d	f	L	h	Dmin					
221-04-001	221-04-002	S25R-MTFNR/L16	25	17	200	23	32	TN..1604..	-	NL-33L	CL-6	XNS-36
221-04-003	221-04-004	S32S-MTFNR/L16	32	22	250	30	40	TN..1604..	ITSN-323	NL-34L	CL-6	XNS-36
221-04-005	221-04-006	S40T-MTFNR/L16	40	27	300	37	50	TN..1604..	ITSN-323	NL-34L	CL-6	XNS-36
221-04-007	221-04-008	S50W-MTFNR/L16	50	35	450	47	63	TN..1604..	ITSN-323	NL-34L	CL-6	XNS-36
221-04-009	221-04-010	S40T-MTFNR/L22	40	27	300	37	50	TN..2204..	ITSN-433	NL46	CL-9	XNS-59
221-04-011	221-04-012	S50W-MTFNR/L22	50	35	450	47	63	TN..2204..	ITSN-433	NL46	CL-9	XNS-59

A..MTFNR/L

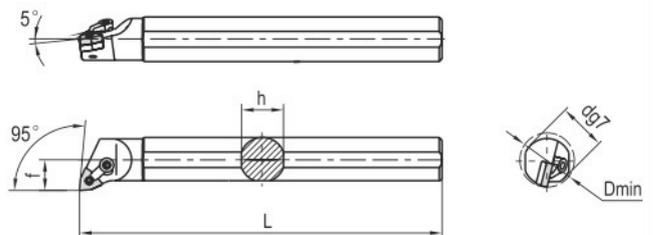
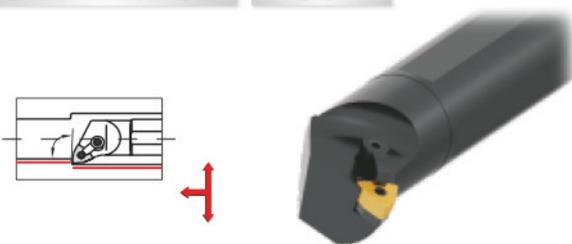
90°



Order No.		ISO Code toolholder	Size(mm)					For Insert	Shim	Lock pin	Clamp	Clamp screw
Right hand	Left hand		d	f	L	h	Dmin					
225-04-001	225-04-002	A25R-MTFNR/L16	25	17	200	23	32	TN..1604..	-	NL-33L	CL-6	XNS-36
225-04-003	225-04-004	A32S-MTFNR/L16	32	22	250	30	40	TN..1604..	ITSN-323	NL-34L	CL-6	XNS-36
225-04-005	225-04-006	A40T-MTFNR/L16	40	27	300	37	50	TN..1604..	ITSN-323	NL-34L	CL-6	XNS-36
225-04-007	225-04-008	A50W-MTFNR/L16	50	35	450	46	63	TN..1604..	ITSN-323	NL-34L	CL-6	XNS-36
225-04-009	225-04-010	A40T-MTFNR/L22	40	27	300	37	50	TN..2204..	ITSN-433	NL-46	CL-9	XNS-59
225-04-011	225-04-012	A50W-MTFNR/L22	50	35	450	47	63	TN..2204..	ITSN-433	NL-46	CL-9	XNS-59

S..MWLNR/L

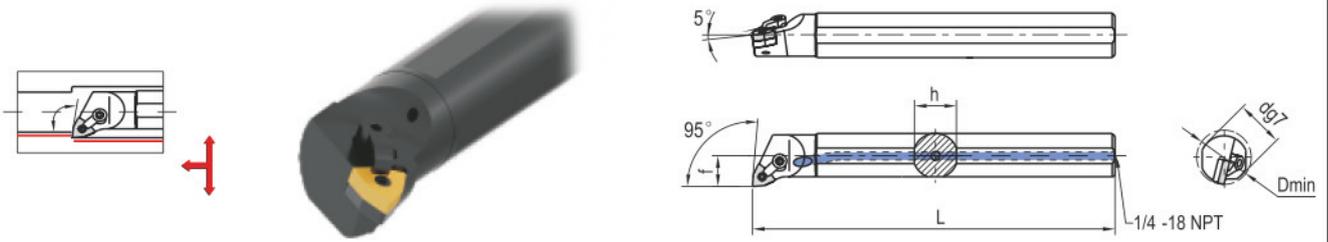
95°



Order No.		ISO Code toolholder	Size(mm)					For Insert	Shim	Lock pin	Clamp	Clamp screw
Right hand	Left hand		d	f	L	h	Dmin					
221-06-001	221-06-002	S25R-MWLNR/L06	25	17	200	23	32	WN..0604..	-	NL-33L	CL-6	XNS-36
221-06-003	221-06-004	S32S-MWLNR/L06	32	22	250	30	40	WN..0604..	IWSN-322	NL-34L	CL-6	XNS-36
221-06-005	221-06-006	S25R-MWLNR/L08	25	17	200	23	32	WN..0804..	-	NL-44	CL-20	XNS-47
221-06-007	221-06-008	S32S-MWLNR/L08	32	22	250	30	40	WN..0804..	IWSN-433	NL-46	CL-20	XNS-48
221-06-009	221-06-010	S40T-MWLNR/L08	40	27	300	37	50	WN..0804..	IWSN-433	NL-46	CL-20	XNS-48
221-06-011	221-06-012	S50W-MWLNR/L08	50	35	450	47	63	WN..0804..	IWSN-433	NL-46	CL-20	XNS-48

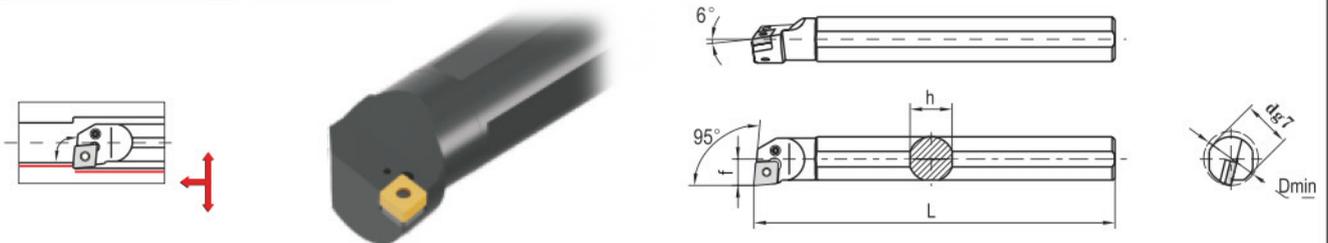
BORING BAR WITH NEGATIVE RAKE ANGEL

A..MWLNR/L 95°



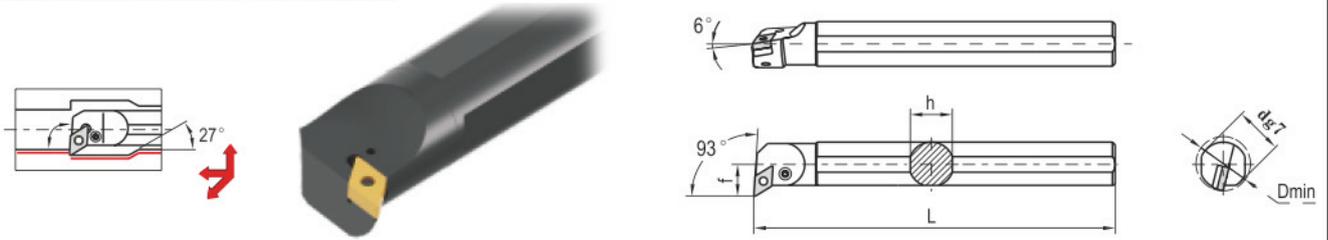
Order No.		ISO Code toolholder	Size(mm)					For Insert	Shim	Lock pin	Clamp	Clamp screw
Right hand	Left hand		d	f	L	h	Dmin					
225-06-001	225-06-002	A25R-MWLNR/L06	25	17	200	23	32	WN..0604..	-	NL-33L	CL-6	XNS-36
225-06-003	225-06-004	A32S-MWLNR/L06	32	22	250	30	40	WN..0604..	IWSN-322	NL-34L	CL-6	XNS-36
225-06-005	225-06-006	A25R-MWLNR/L08	25	17	200	23	32	WN..0804..	-	NL-44	CL-20	XNS-47
225-06-007	225-06-008	A32S-MWLNR/L08	32	22	250	30	40	WN..0804..	IWSN-433	NL-46	CL-20	XNS-48
225-06-009	225-06-010	A40T-MWLNR/L08	40	27	300	37	50	WN..0804..	IWSN-433	NL-46	CL-20	XNS-48

S..PCLNR/L 95°

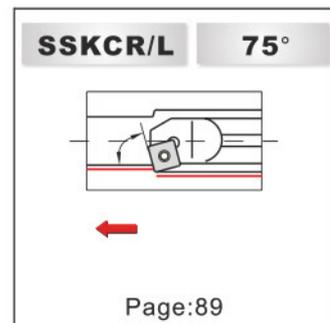
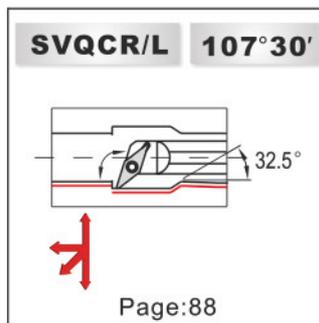
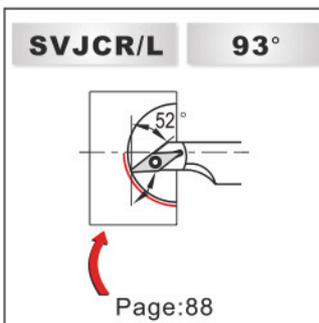
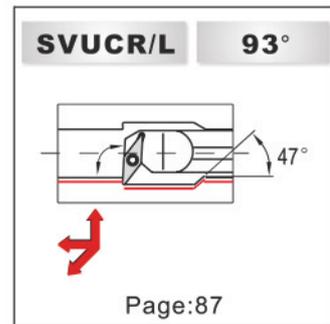
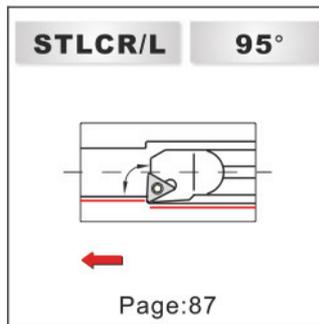
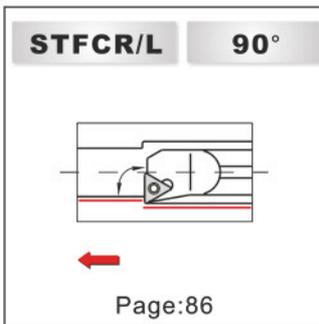
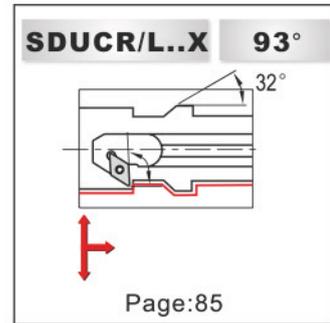
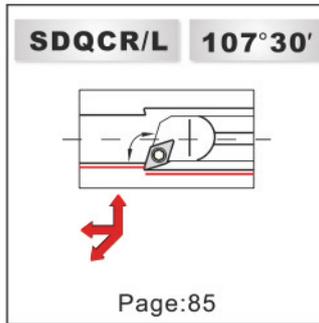
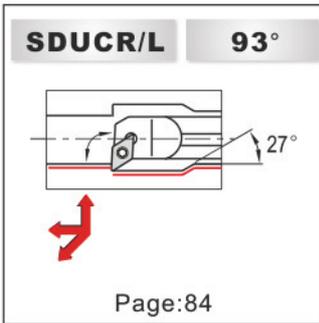
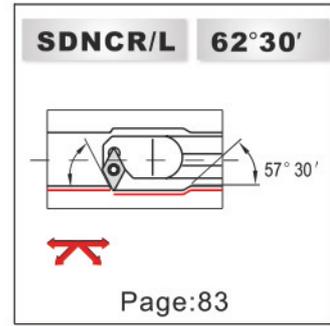
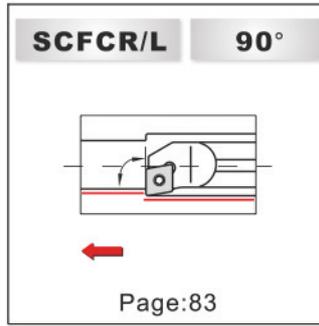
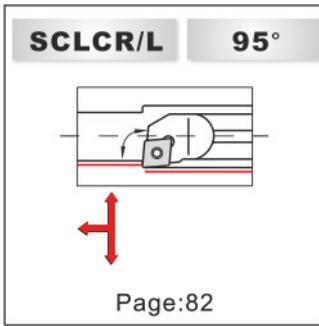


Order No.		ISO Code toolholder	Size(mm)					For Insert	Shim	Lever	Screw	Tubular rivet
Right hand	Left hand		d	f	L	h	Dmin					
221-07-001	221-07-002	S32U-PCLNR/L12	32	22	350	30	40	CN..1204..	PC1203	PL-4	PS0820B	SP06
221-07-003	221-07-004	S40V-PCLNR/L12	40	27	400	37	50	CN..1204..	PC1203	PL-4	PS0820B	SP06
221-07-005	221-07-006	S50WPCLNR/L12	50	35	450	47	63	CN..1204..	PC1203	PL-4	PS0820B	SP06
221-07-007	221-07-008	S40V-PCLNR/L16	40	27	400	37	50	CN..1606..	PC1604	PL-5	PS0825	SP08
221-07-009	221-07-010	S50WPCLNR/L16	50	35	450	47	63	CN..1606..	PC1604	PL-5	PS0825	SP08

S..PDUNR/L 93°



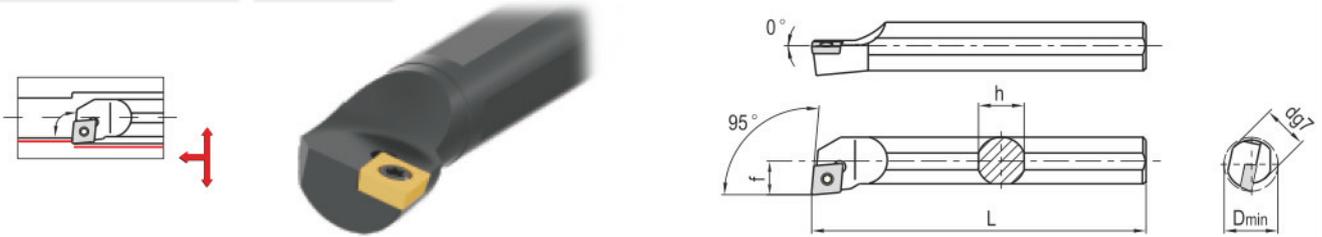
Order No.		ISO Code toolholder	Size(mm)					For Insert	Shim	Lever	Screw	Tubular rivet
Right hand	Left hand		d	f	L	h	Dmin					
221-08-001	221-08-002	S32U-PDUNR/L11	32	22	350	30	40	DN..1104..	PD1103	PL-3	PS0617	SP05
221-08-003	221-08-004	S40V-PDUNR/L11	40	27	400	37	50	DN..1104..	PD1103	PL-3	PS0617	SP05
221-08-005	221-08-006	S50WPDUNR/L11	50	35	450	47	63	DN..1104..	PD1103	PL-3	PS0617	SP05
221-08-007	221-08-008	S40V-PDUNR/L15	40	27	400	37	50	DN..1506..	PD1503	PL-4	PS0820B	SP06
221-08-009	221-08-010	S50WPDUNR/L15	50	35	450	47	63	DN..1506..	PD1503	PL-4	PS0820B	SP06



BORING BAR WITH POSITIVE RAKE ANGEL

S..SCLCR/L

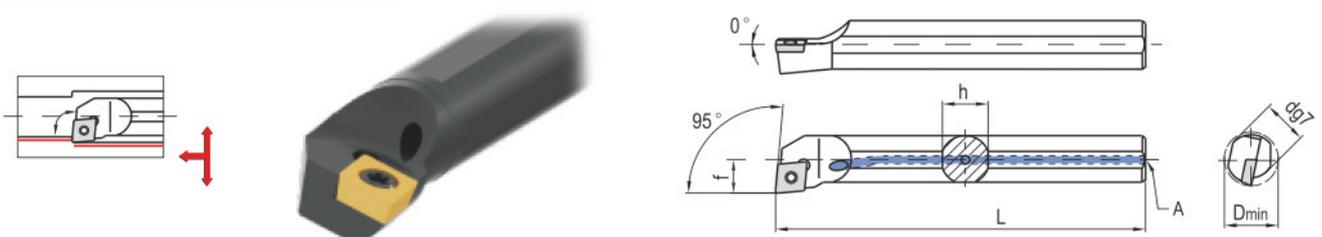
95°



Order No.		ISO Code toolholder	Size(mm)					For Insert	Screw	Torx wrench
Right hand	Left hand		d	f	L	h	Dmin			
221-10-001	221-10-002	S08H-SCLCR/L06	8	6	100	7	11	CC..0602..	L60 M2.5x5.2	T8
221-10-003	221-10-004	S10K-SCLCR/L06	10	7	125	9	13	CC..0602..	L60 M2.5x5.2	T8
221-10-005	221-10-006	S12M-SCLCR/L06	12	9	150	11	16	CC..0602..	L60 M2.5x5.2	T8
221-10-007	221-10-008	S16R-SCLCR/L09	16	11	200	15	20	CC..09T3..	L60 M3.5x8.8	T15
221-10-009	221-10-010	S20S-SCLCR/L09	20	13	250	18	25	CC..09T3..	L60 M3.5x8.8	T15
221-10-011	221-10-012	S25T-SCLCR/L12	25	17	300	23	32	CC..1204..	L60 M5x10.8	T20
221-10-013	221-10-014	S32U-SCLCR/L12	32	22	350	30	40	CC..1204..	L60 M5x10.8	T20

A..SCLCR/L

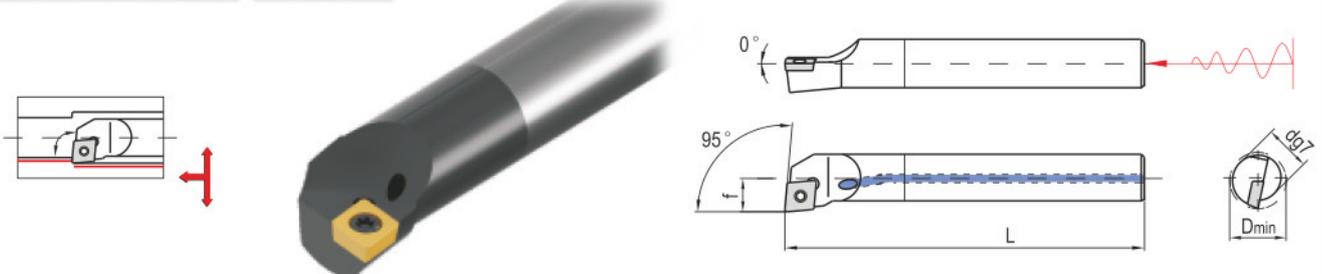
95°



Order No.		ISO Code toolholder	Size(mm)					A	For Insert	Screw	Torx wrench
Right hand	Left hand		d	f	L	h	Dmin				
225-10-001	225-10-002	A16R-SCLCR/L06	16	11	200	15	20	1/8"-27NPT	CC..0602..	L60 M2.5x5.2	T8
225-10-003	225-10-004	A16R-SCLCR/L09	16	11	200	15	20	1/8"-27NPT	CC..09T3..	L60 M3.5x8.8	T15
225-10-005	225-10-006	A20S-SCLCR/L09	20	13	250	18	25	1/8"-27NPT	CC..09T3..	L60 M3.5x8.8	T15
225-10-007	225-10-008	A25T-SCLCR/L09	25	17	300	23	32	1/4"-18NPT	CC..09T3..	L60 M3.5x8.8	T15

E..SCLCR/L

95°

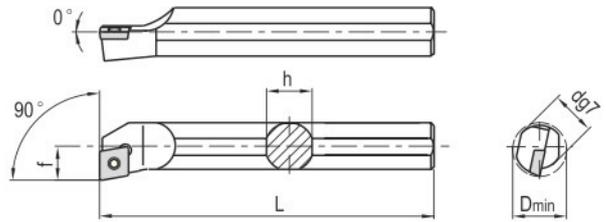
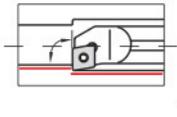


Order No.		ISO Code toolholder	Size(mm)				For Insert	Screw	Torx wrench
Right hand	Left hand		d	f	Dmin	L			
224-10-001	224-10-002	E20S-SCLCR/L09	20	13	25	250	CC..09T3..	L60 M3.5x8.8	T15

BORING BAR WITH POSITIVE RAKE ANGEL

S..SCFCR/L

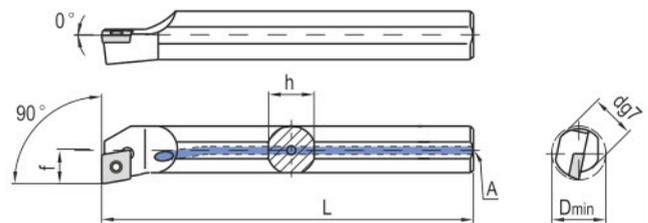
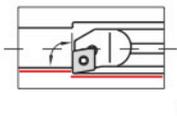
90°



Order No.		ISO Code toolholder	Size(mm)					For Insert	Screw	Torx wrench
Right hand	Left hand		d	f	L	h	Dmin			
221-10-015	221-10-016	S08H-SCFCR/L06	8	6	100	7	11	CC..0602..	L60 M2.5x5.2	T8
221-10-017	221-10-018	S10K-SCFCR/L06	10	7	125	9	13	CC..0602..	L60 M2.5x5.2	T8
221-10-019	221-10-020	S12M-SCFCR/L06	12	9	150	11	16	CC..0602..	L60 M2.5x5.2	T8
221-10-021	221-10-022	S16R-SCFCR/L09	16	11	200	15	20	CC..09T3..	L60 M3.5x8.8	T15
221-10-023	221-10-024	S20S-SCFCR/L09	20	13	250	18	25	CC..09T3..	L60 M3.5x8.8	T15
221-10-025	221-10-026	S25T-SCFCR/L12	25	17	300	23	32	CC..1204..	L60 M5x10.8	T20
221-10-027	221-10-028	S32U-SCFCR/L12	32	22	350	30	40	CC..1204..	L60 M5x10.8	T20

A..SCFCR/L

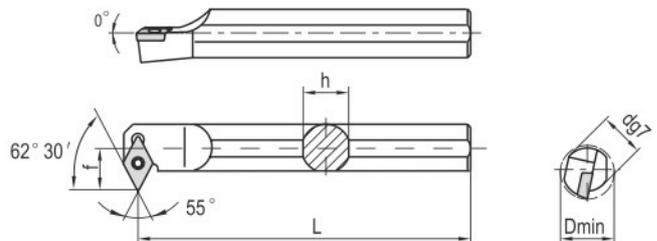
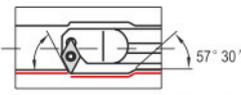
90°



Order No.		ISO Code toolholder	Size(mm)					A	For Insert	Screw	Torx wrench
Right hand	Left hand		d	f	L	h	Dmin				
225-10-009	225-10-010	A20S-SCFCR09	20	13	250	18	25	1/8"-27NPT	CC..09T3..	L60 M3.5x8.8	T15
225-10-011	225-10-012	A25T-SCFCR09	25	17	300	23	32	1/4"-18NPT	CC..09T3..	L60 M3.5x8.8	T15

S..SDNCR/L

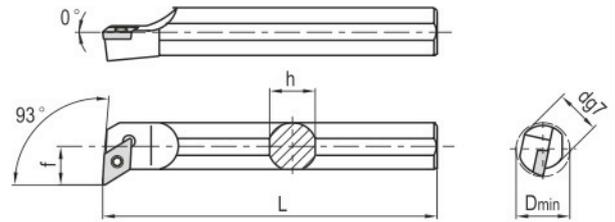
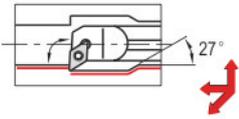
62° 30'



Order No.		ISO Code toolholder	Size(mm)					For Insert	Screw	Torx wrench
Right hand	Left hand		d	f	L	h	Dmin			
221-11-001	221-11-002	S12M-SDNCR/L07	12	9	150	11	16	DC..0702..	L60 M2.5x5.2	T8
221-11-003	221-11-004	S20S-SDNCR/L11	20	13	250	18	25	DC..11T3..	L60 M3.5x8.8	T15
221-11-005	221-11-006	S25T-SDNCR/L11	25	17	300	23	32	DC..11T3..	L60 M3.5x8.8	T15

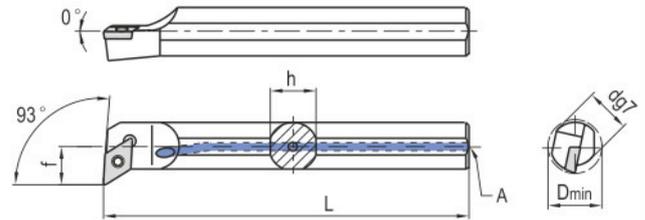
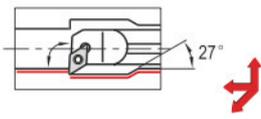
BORING BAR WITH POSITIVE RAKE ANGEL

S..SDUCR/L 93°



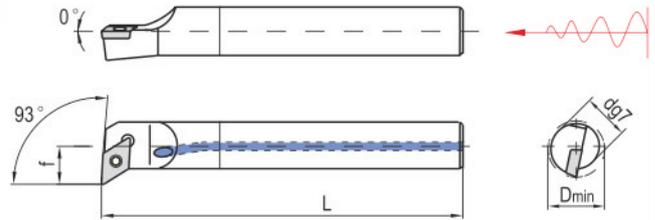
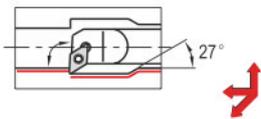
Order No.		ISO Code toolholder	Size(mm)					For Insert	Screw	Torx wrench
Right hand	Left hand		d	f	L	h	Dmin			
221-11-019	221-11-020	S10K-SDUCR/L07	10	7	125	9	13	DC..0702..	L60 M2.5x5.2	T8
221-11-021	221-11-022	S12M-SDUCR/L07	12	9	150	11	16	DC..0702..	L60 M2.5x5.2	T8
221-11-023	221-11-024	S16R-SDUCR/L07	16	11	200	15	20	DC..0702..	L60 M2.5x5.2	T8
221-11-025	221-11-026	S20S-SDUCR/L11	20	13	250	18	25	DC..11T3..	L60 M3.5x8.8	T15
221-11-027	221-11-028	S25T-SDUCR/L11	25	17	300	23	32	DC..11T3..	L60 M3.5x8.8	T15
221-11-029	221-11-030	S32U-SDUCR/L11	32	22	350	30	40	DC..11T3..	L60 M3.5x8.8	T15

A..SDUCR/L 93°



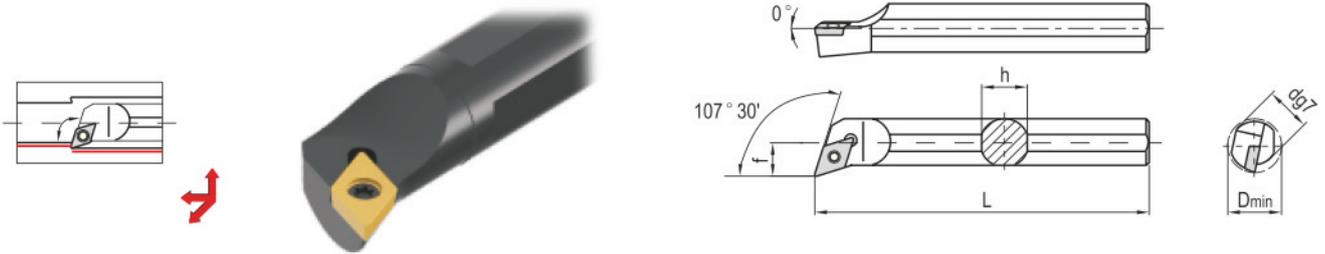
Order No.		ISO Code toolholder	Size(mm)					A	For Insert	Screw	Torx wrench
Right hand	Left hand		d	f	L	h	Dmin				
225-11-001	225-11-002	A10K-SDUCR/L07	10	7	125	9	13	dia.3.3	DC..0702..	L60 M2.5x5.2	T8
225-11-003	225-11-004	A12M-SDUCR/L07	12	9	150	11	16	1/16"-27NPT	DC..0702..	L60 M2.5x5.2	T8
225-11-005	225-11-006	A16R-SDUCR/L07	16	11	200	15	20	1/8"-27NPT	DC..0702..	L60 M2.5x5.2	T8
225-11-007	225-11-008	A20S-SDUCR/L11	20	13	250	18	25	1/8"-27NPT	DC..11T3..	L60 M3.5x8.8	T15
225-11-009	225-11-010	A25T-SDUCR/L11	25	17	300	23	32	1/4"-18NPT	DC..11T3..	L60 M3.5x8.8	T15

E..SDUCR/L 93°



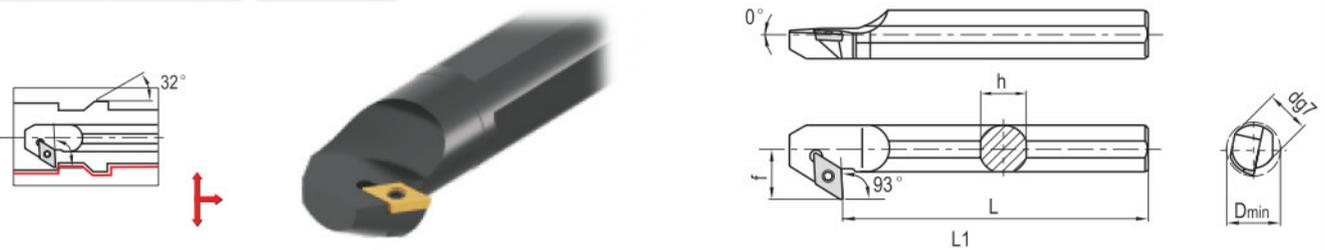
Order No.		ISO Code toolholder	Size(mm)				For Insert	Screw	Torx wrench
Right hand	Left hand		d	f	Dmin	L			
224-11-001	224-11-002	E10M-SDUCR/L07	10	7	13	150	DC..0702..	L60 M2.5x5.2	T8
224-11-003	224-11-004	E12Q-SDUCR/L07	12	9	16	180	DC..0702..	L60 M2.5x5.2	T8
224-11-005	224-11-006	E16R-SDUCR/L07	16	11	20	200	DC..0702..	L60 M2.5x5.2	T8
224-11-007	224-11-008	E20S-SDUCR/L11	20	13	25	250	DC..11T3..	L60 M3.5x8.8	T15
224-11-009	224-11-010	E25T-SDUCR/L11	25	17	32	300	DC..11T3..	L60 M3.5x8.8	T15

S..SDQCR/L 107°30'



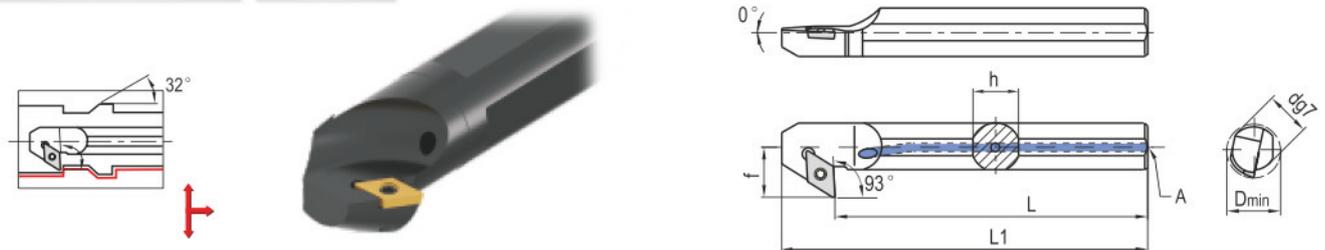
Order No.		ISO Code toolholder	Size(mm)						For Insert	Screw	Torx wrench
Right hand	Left hand		d	f	L	h	Dmin				
221-11-007	221-11-008	S10K-SDQCR/L07	10	7	125	9	13	DC..0702..	L60 M2.5x5.2	T8	
221-11-009	221-11-010	S12M-SDQCR/L07	12	9	150	11	16	DC..0702..	L60 M2.5x5.2	T8	
221-11-011	221-11-012	S16R-SDQCR/L07	16	11	200	15	20	DC..0702..	L60 M2.5x5.2	T8	
221-11-013	221-11-014	S20S-SDQCR/L11	20	13	250	18	25	DC..11T3..	L60 M3.5x8.8	T15	
221-11-015	221-11-016	S25T-SDQCR/L11	25	17	300	23	32	DC..11T3..	L60 M3.5x8.8	T15	
221-11-017	221-11-018	S32U-SDQCR/L11	32	22	350	30	40	DC..11T3..	L60 M3.5x8.8	T15	

S..SDUCR/L-X 93°



Order No.		ISO Code toolholder	Size(mm)						For Insert	Screw	Torx wrench
Right hand	Left hand		d	f	L	L1	h	Dmin			
221-11-031	221-11-032	S16R-SDUCR/L07-EX	16	13	200	212	15	22	DC..0702..	L60 M2.5x5.2	T8
221-11-033	221-11-034	S20S-SDUCR/L07-EX	20	15	250	262	18	27	DC..0702..	L60 M2.5x5.2	T8
221-11-035	221-11-036	S25T-SDUCR/L07-DX	25	18	300	312	23	33	DC..0702..	L60 M2.5x5.2	T8
221-11-037	221-11-038	S32U-SDUCR/L11-X	32	22	350	366	30	40	DC..11T3..	L60 M3.5x8.8	T15

A..SDUCR/L-X 93°



Order No.		ISO Code toolholder	Size(mm)						A	For Insert	Screw	Torx wrench
Right hand	Left hand		d	f	L	L1	h	Dmin				
225-11-011	225-11-012	A16R-SDUCR/L07-EX	16	13	200	212	15	22	1/8"-27NPT	DC..0702..	L60 M2.5x5.2	T8
225-11-013	225-11-014	A20S-SDUCR/L07-EX	20	15	250	262	18	27	1/8"-27NPT	DC..0702..	L60 M2.5x5.2	T8
225-11-015	225-11-016	A25T-SDUCR/L07-DX	25	18	300	312	23	33	1/4"-18NPT	DC..0702..	L60 M2.5x5.2	T8

BORING BAR WITH POSITIVE RAKE ANGEL

S..STFCR/L **90°**

Order No.		ISO Code toolholder	Size(mm)					For Insert	Screw	Torx wrench
Right hand	Left hand		d	f	L	h	Dmin			
221-13-001	221-13-002	S10K-STFCR/L11	10	7	125	9	13	TC..1102..	L60 M2.5x5.2	T8
221-13-003	221-13-004	S12M-STFCR/L11	12	9	150	11	16	TC..1102..	L60 M2.5x5.2	T8
221-13-005	221-13-006	S16R-STFCR/L11	16	11	200	15	20	TC..1102..	L60 M2.5x5.2	T8
221-13-007	221-13-008	S20S-STFCR/L16	20	13	250	18	25	TC..16T3..	L60 M3.5x8.8	T15
221-13-009	221-13-010	S25T-STFCR/L16	25	17	300	23	32	TC..16T3..	L60 M3.5x8.8	T15
221-13-011	221-13-012	S32U-STFCR/L16	32	22	350	30	40	TC..16T3..	L60 M3.5x8.8	T15

A..STFCR/L **90°**

Order No.		ISO Code toolholder	Size(mm)					A	For Insert	Screw	Torx wrench
Right hand	Left hand		d	f	L	h	Dmin				
225-13-001	225-13-002	A10K-STFCR/L11	10	7	125	9	13	φ 3.3	TC..1102..	L60 M2.5x5.2	T8
225-13-003	225-13-004	A12M-STFCR/L11	12	9	150	11	16	1/16"-27NPT	TC..1102..	L60 M2.5x5.2	T8
225-13-005	225-13-006	A16R-STFCR/L11	16	11	200	15	20	1/8"-27NPT	TC..1102..	L60 M2.5x5.2	T8
225-13-007	225-13-008	A20S-STFCR/L16	20	13	250	18	25	1/8"-27NPT	TC..16T3..	L60 M3.5x8.8	T15
225-13-009	225-13-010	A25T-STFCR/L16	25	17	300	23	32	1/4"-18NPT	TC..16T3..	L60 M3.5x8.8	T15

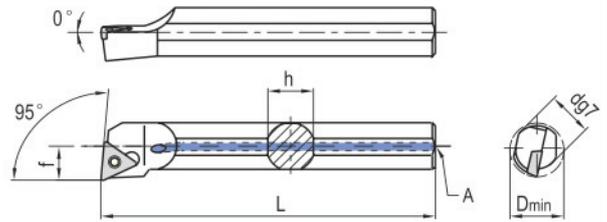
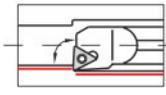
E..STFCR/L **90°**

Order No.		ISO Code toolholder	Size(mm)				For Insert	Screw	Torx wrench
Right hand	Left hand		d	f	Dmin	L			
224-13-001	224-13-002	E10M-STFPR/L11	10	7	13	150	TP..1103..	L60 M3x6	T9
224-13-003	224-13-004	E12Q-STFPR/L11	12	9	16	180	TP..1103..	L60 M3x6	T9
224-13-005	224-13-006	E16R-STFPR/L11	16	11	20	200	TP..1103..	L60 M3x6	T9

BORING BAR WITH POSITIVE RAKE ANGEL

A..STLCR/L

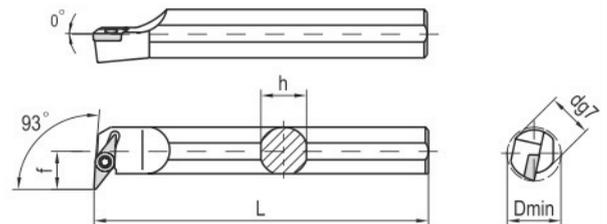
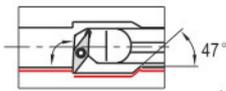
95°



Order No.		ISO Code toolholder	Size(mm)					A	For Insert	Screw	Torx wrench
Right hand	Left hand		d	f	L	h	Dmin				
225-13-011	225-13-012	A10K-STLCR/L11	10	7	125	9	13	φ 3.3	TC..1102..	L60 M2.5x5.2	T8
225-13-013	225-13-014	A12M-STLCR/L11	12	9	150	11	16	1/16"-27NPT	TC..1102..	L60 M2.5x5.2	T8
225-13-015	225-13-016	A16R-STLCR/L11	16	11	200	15	20	1/8"-27NPT	TC..1102..	L60 M2.5x5.2	T8

S..SVUCR/L

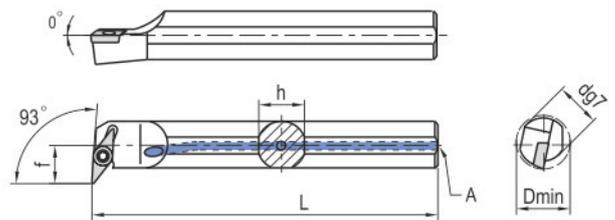
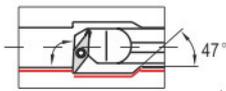
93°



Order No.		ISO Code toolholder	Size(mm)					For Insert	Screw	Torx wrench
Right hand	Left hand		d	f	L	h	Dmin			
221-14-001	221-14-002	S16R-SVUCR/L11	16	11	200	15	20	VC..1103..	L60 M2.5x5.2	T8
221-14-003	221-14-004	S20S-SVUCR/L11	20	13	250	18	25	VC..1103..	L60 M2.5x5.2	T8
221-14-005	221-14-006	S25T-SVUCR/L16	25	17	300	23	32	VC..1604..	L60 M3.5x8.8	T15

A..SVUCR/L

93°



Order No.		ISO Code toolholder	Size(mm)					A	For Insert	Screw	Torx wrench
Right hand	Left hand		d	f	L	h	Dmin				
225-14-001	225-14-002	A20S-SVUCR/L11	20	13	250	18	25	1/8"-27NPT	VC..1103..	L60 M2.5x5.2	T8
225-14-003	225-14-004	A25T-SVUCR/L16	25	17	300	23	32	1/4"-18NPT	VC..1604..	L60 M3.5x8.8	T15

BORING BAR WITH POSITIVE RAKE ANGEL

S..SVJCR/L 93°

Order No.		ISO Code toolholder	Size(mm)						For Insert	Screw	Torx wrench
Right hand	Left hand		d	f	L1	L2	h	Dmin			
221-14-007	221-14-008	S20S-SVJCR/L11	20	2	250	37.5	18	25	VC..1103..	L60 M2.5x5.2	T8
221-14-009	221-14-010	S25T-SVJCR/L11	25	3.5	300	45	23	30	VC..1103..	L60 M2.5x5.2	T8

A..SVJCR/L 93°

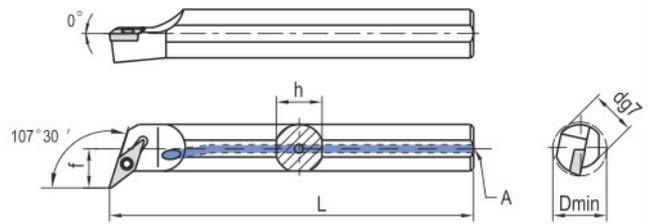
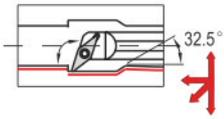
Order No.		ISO Code toolholder	Size(mm)						A	For Insert	Screw	Torx wrench
Right hand	Left hand		d	f	L1	L2	h	Dmin				
225-14-005	225-14-006	A20S-SVJCR/L11	20	2	250	37.5	18	25	1/8"-27NPT	VC..1103..	L60 M2.5x5.2	T8
225-14-007	225-14-008	A25T-SVJCR/L11	25	3.5	300	45	23	30	1/4"-18NPT	VC..1103..	L60 M2.5x5.2	T8

S..SVQCR/L 107°30'

Order No.		ISO Code toolholder	Size(mm)					For Insert	Screw	Torx wrench
Right hand	Left hand		d	f	L	h	Dmin			
221-14-011	221-14-012	S16R-SVQCR/L11	16	11	200	15	20	VC..1103..	L60 M2.5x5.2	T8
221-14-013	221-14-014	S20S-SVQCR/L11	20	13	250	18	25	VC..1103..	L60 M2.5x5.2	T8
221-14-015	221-14-016	S25T-SVQCR/L16	25	17	300	23	32	VC..1604..	L60 M3.5x8.8	T15

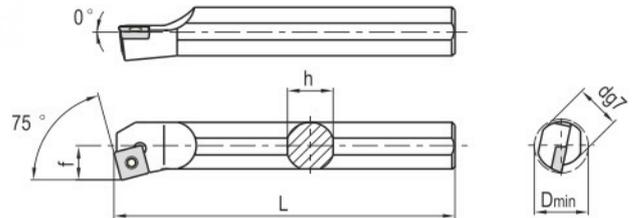
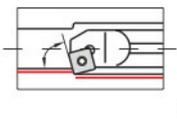
BORING BAR WITH POSITIVE RAKE ANGEL

A..SVQCR/L 10730'



Order No.		ISO Code toolholder	Size(mm)					A	For Insert	Screw	Torx wrench
Right hand	Left hand		d	f	L	h	Dmin				
225-14-009	225-14-010	A16R-SVQCR/L11	16	11	200	15	20	1/8"-27NPT	VC..1103..	L60 M2.5x5.2	T8
225-14-011	225-14-012	A20S-SVQCR/L11	20	13	250	18	25	1/8"-27NPT	VC..1103..	L60 M2.5x5.2	T8
225-14-013	225-14-014	A25T-SVQCR/L16	25	17	300	23	32	1/4"-18NPT	VC..1604..	L60 M3.5x8.8	T15

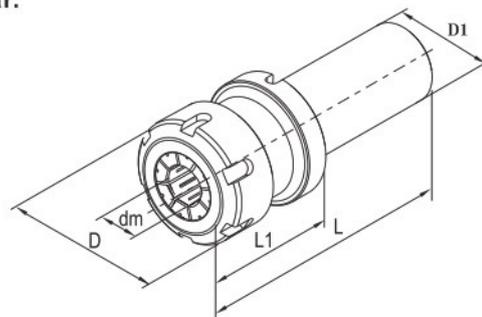
S..SSKCR/L 75°



Order No.		ISO Code toolholder	Size(mm)					For Insert	Screw	Torx wrench
Right hand	Left hand		d	f	L	h	Dmin			
221-12-001	221-12-002	S20S-SSKCR/L09	20	13	250	18	25	SC..09T3..	L60 M3.5x8.8	T15
221-12-003	221-12-004	S25T-SSKCR/L12	25	17	300	23	32	SC..1204..	L60 M5x10.8	T20

ER COLLET CHUCK WITH CYLINDER SHANK

this extension can be used on NC lathe for clamping boring bar.

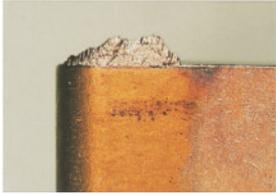
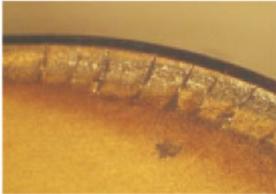


Order No.	Modle	Shank diameter (mm)	for Collets	Size(mm)					Nuts	Screw	Wrench
				dm	D	D1	L1	L			
172-04-005	C32-ER25-105	32	ER25	1.0~16	42	32	35	105	CN25B	SER25C	YER25B
172-04-010	C32-ER32-120	32	ER32	2.0~20	50	32	50	120	CN32B	SER32C	YER32B
172-04-015	C32-ER40-130	32	ER40	3.0~26	63	32	60	130	CN40B	SER32C	YER40B
172-04-020	C40-ER25-105	40	ER25	1.0~16	42	40	35	105	CN25B	SER25C	YER25B
172-04-025	C40-ER32-120	40	ER32	2.0~20	50	40	35	105	CN32B	SER32C	YER32B
172-04-030	C40-ER40-130	40	ER40	3.0~26	63	40	60	130	CN40B	SER40C	YER40B

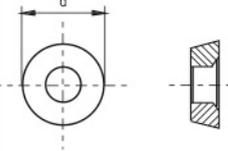
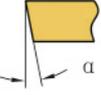
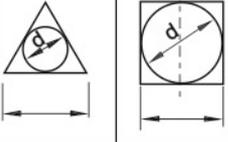
Insert Failure Mode Guide

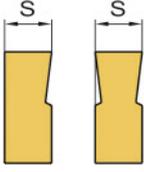
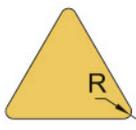
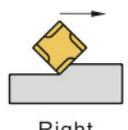
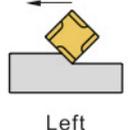
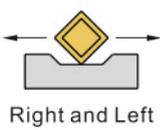
Problem/Failure Mode	Cause	Control Action/Remedy
<p>Rapid Flank Wear</p> 	<ul style="list-style-type: none"> <input type="checkbox"/> Excessive cutting speed. <input type="checkbox"/> Work material microstructure contains carbides. 	<ul style="list-style-type: none"> <input type="checkbox"/> Reduce cutting speed. <input type="checkbox"/> Use harder grade. <input type="checkbox"/> Select more positive rake chipbreaker. <input type="checkbox"/> Flood cutting zone with coolant.
<p>Edge Chipping</p> 	<ul style="list-style-type: none"> <input type="checkbox"/> Excessive feed rate. <input type="checkbox"/> Interrupted cut. <input type="checkbox"/> Vibration 	<ul style="list-style-type: none"> <input type="checkbox"/> Reduce feed rate. <input type="checkbox"/> Select tougher grade. <input type="checkbox"/> Select stronger chipbreaker. <input type="checkbox"/> Increase lead angel. <input type="checkbox"/> Increase system rigidity.
<p>Crater</p> 	<ul style="list-style-type: none"> <input type="checkbox"/> Excessive cutting speed. <input type="checkbox"/> Ineffective use of coolant. 	<ul style="list-style-type: none"> <input type="checkbox"/> Reduce cutting speed & feed. <input type="checkbox"/> Select harder grade with oxide coating. <input type="checkbox"/> Select more positive rake chipbreaker. <input type="checkbox"/> Flood cutting zone with coolant.
<p>Built-up Edge, Torn Finish, Chip Welding</p> 	<ul style="list-style-type: none"> <input type="checkbox"/> High work hardening material. 	<ul style="list-style-type: none"> <input type="checkbox"/> Increase lead angel. <input type="checkbox"/> Select tougher grade. <input type="checkbox"/> Select stronger chipbreaker. <input type="checkbox"/> Vary depth-of-cut if possible.

Insert Failure Mode Guide

Problem/Failure Mode	Cause	Control Action/Remedy
<p>Built-up Edge, Torn Finish, Chip Welding</p> 	<ul style="list-style-type: none"> <input type="checkbox"/> Low cutting speed. <input type="checkbox"/> Low feed rate. <input type="checkbox"/> Poor shearing action. 	<ul style="list-style-type: none"> <input type="checkbox"/> Increase cutting speed and feed rate. <input type="checkbox"/> Select more positive rake chipbreaker. <input type="checkbox"/> Select tougher grade (use PVD coated insert). <input type="checkbox"/> Flood cutting zone with coolant.
<p>Fracture</p> 	<ul style="list-style-type: none"> <input type="checkbox"/> Improper selection of grade/ chipbreaker and /or cutting conditions. 	<ul style="list-style-type: none"> <input type="checkbox"/> Reduce feed rate. <input type="checkbox"/> Select tougher grade. <input type="checkbox"/> Select stronger chipbreaker. <input type="checkbox"/> make sure set-up is as rigid as possible.
<p>Thermal Cracking</p> 	<ul style="list-style-type: none"> <input type="checkbox"/> Extreme variation in cutting temperatures. <input type="checkbox"/> Interrupted cut. 	<ul style="list-style-type: none"> <input type="checkbox"/> Reduce feed rate. <input type="checkbox"/> Increase cutting speed. <input type="checkbox"/> Select stronger chipbreaker.

ISO NAMENCLATURE FOR INDEXABLE CARBIDE INSERTS

																																																																																																																																																																																																																																																				
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 <p>01 S=1,59 T1 S=1,98 02 S=2,38 03 S=3,18 T3 S=3,97 04 S=4,76 05 S=5,56 06 S=6,35 07 S=7,94 09 S=9,52</p>	 <table border="1" data-bbox="462 765 566 1110"> <thead> <tr> <th></th> <th>R (mm)</th> </tr> </thead> <tbody> <tr><td>02</td><td>0,2</td></tr> <tr><td>04</td><td>0,4</td></tr> <tr><td>05</td><td>0,5</td></tr> <tr><td>08</td><td>0,8</td></tr> <tr><td>12</td><td>1,2</td></tr> <tr><td>16</td><td>1,6</td></tr> <tr><td>20</td><td>2,0</td></tr> <tr><td>24</td><td>2,4</td></tr> <tr><td>32</td><td>3,2</td></tr> </tbody> </table> <p>MO: round insert</p>		R (mm)	02	0,2	04	0,4	05	0,5	08	0,8	12	1,2	16	1,6	20	2,0	24	2,4	32	3,2	<p>F Sharp</p> <p>E Rounded</p> <p>T Chamfered</p> <p>S Chamfered and Rounded</p>	 <p>Right</p>  <p>Left</p>  <p>Right and Left</p>	<p>Chipbreaker</p> <p>NPF NPM NPR MSF NMF NMM NTM NTR</p>
	R (mm)																							
02	0,2																							
04	0,4																							
05	0,5																							
08	0,8																							
12	1,2																							
16	1,6																							
20	2,0																							
24	2,4																							
32	3,2																							
<p>04</p>	<p>04</p>	<p>E</p>	<p>N</p>	<p>NPF</p>																				
<p>Height of cutting edge</p>	<p>Corner radius</p>	<p>Cutting edge preparation</p>	<p>Hand of tool</p>	<p>Defined by the manufacturer</p>																				

INSERT TECHNICAL INFORMATION

Insert selection guide

Step 1: Choose workpiece material (ISO P/steel, ISO M/stainless steel, ISO K/cast iron, ISO N/aluminum alloys, ISO S/heat resistant alloys, ISO H/hardened steel)

Step 2: Choose type of application (turning, parting & grooving, milling, drilling).

Step 3: Choose a grade based on machining conditions (good, average or difficult conditions).

Step 4: Choose a geometry based on operation (finishing/light, medium, roughing/heavy).

Description of Harlingen Carbide Grades

ISO	P					M				K				
	High		Medium		Low	High	Medium	Low	High	Medium		Low		
Cutting speeds Material	P01	P10	P20	P30	P40	M10	M20	M30	M40	K01	K10	K20	K30	K40
Turning insert with coating			HC2115									HC3215		
				HC2125			HP1215							
				HC2025										

P steel:

HC2025 Toughness and wear resistance. It is wide range applicative and suitable for semi-finishing and finishing ISO P material.

HC2115 Adopted with thick TiCN and thick Al₂O₃ coating, HC2115 is the best option for semi-finishing and finishing ISO P material, and optimized for impact resistance and wear resistance.
Contracting with prime grade, the cutting speed can be increased over 25% and the flank wear can be decreased 30% in same cutting speed.

HC2125 Adopted with thick TiCN and thick Al₂O₃ coating, HC2125 is optimized for blade intensity and resisting plastic deformation. It is the preferred option in roughing/medium finishing ISO P material.
HC2125 can be worked stably in high removal rate cutting parameters and serious work conditions. Besides, it's qualified in cutting without cutting fluid. In addition, the cutting speed can be increased over 25% in same cutting condition meanwhile tool life can be extended 50% in the same cutting speed.

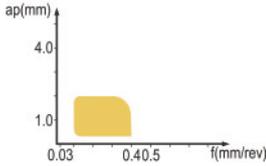
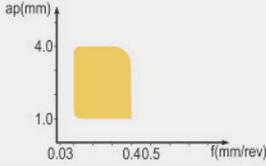
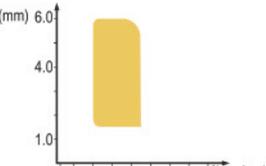
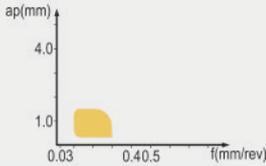
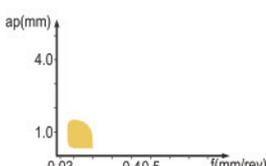
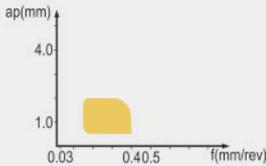
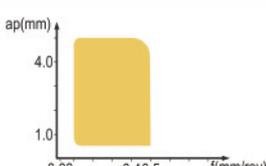
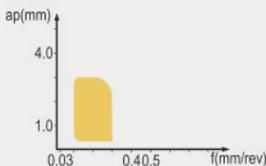
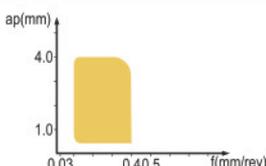
M stainless steel

HP1215 The highly hard substrate combines both favorable shock resistance and blade security.
Used PVD coating with excellent versatility, it is preferred in interrupted turning and milling stainless steel.

K cast iron

HC3215 The medium-coarse substrate has high strength and toughness, columnar textured MT-TiCN and α -Al₂O₃ CVD coating has excellent adhesion between the coating and substrate.
After coating treatment, optimized extremely smooth coating surface, reduce the surface stress and cutting resistance.
Suitable for continue and slight interrupt cast iron cutting at medium to high velocity due to perfect universality.

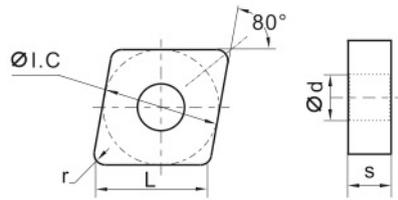
Chipbreaker for turning

Chip breaker	Application range	High lights
 <p>NPF</p>		<p>For finish machining of steel. Cutting depth = 0.3mm-2.0mm, Feed = 0.2mm/r(0.1-0.4)</p>
 <p>NPM</p>		<p>For semi-finish machining of steel. Cutting depth = 1.0mm-4.0mm, Feed = 0.2mm/r(0.1-0.4)</p>
 <p>NPR</p>		<p>For rough machining of steel. Cutting depth = 1.5mm-6mm, Feed = 0.3mm/r(0.2-0.45)</p>
 <p>MSF</p>		<p>For finish machining of stainless steel. Cutting depth = 0.2mm-1.5mm, Feed = 0.15mm/r(0.1-0.3)</p>
 <p>NMF</p>		<p>For finish machining of stainless steel. Cutting depth = 0.2mm-1.5mm, Feed = 0.1mm/r(0.05-0.2)</p>
 <p>NMM</p>		<p>For semi-finish machining of stainless steel. Cutting depth = 0.5mm-2.0mm, Feed = 0.2mm/r(0.15-0.4)</p>
 <p>PLAIN</p>		<p>For semi-finishing to roughing of cast iron. Cutting depth = 0.5mm-5.0mm, Feed = 0.3mm/r(0.1-0.5)</p>
 <p>NTM</p>		<p>Semi-finishing for stainless steel, steel and cast iron. Cutting depth = 0.3mm-3.0mm, Feed = 0.15mm/r(0.1-0.3)</p>
 <p>NTR</p>		<p>Roughing for steel and cast iron. Cutting depth = 0.5mm-4.0mm, Feed = 0.2mm/r(0.1-0.4)</p>

Cutting Data recommendations for turning

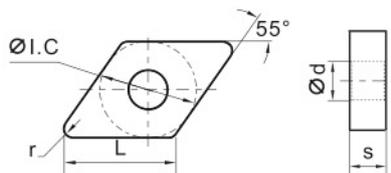
Workpiece material	Alloy treatment and status		Hardness (HB)	Cutting speed Vc(m/min)						
				HC2115	HC2125	HC2025	HP1215	HC3215	HK434	
P	Mild steel	annealed	<=0.15%C	125						
		annealed	0.15%-0.45%C	150-250		330m/min (200-400)				
		tempered	>=0.45%	300						
	Lower alloy steel	annealed		180						
		annealed		250-300	380m/min (220-480)					
		tempered		350						
	Higher alloy steel	annealed		200			310m/min (190-390)			
tempered			350							
M	Stainless steel	annealed	ferritic/martensitic	200						
		quenching	austenitic	180				180m/min (140-260)		
		quenching	duplex	230-260						
		quenching	austenitic/austenitic	330						
K	Grey cast iron		pearlitic/ferritic	180					450m/min (300-500)	
			pearlitic/ferritic	260						
	Nodular cast iron		ferritic	160					260m/min (200-420)	
			pearlitic	250						
	Malleable cast iron		ferritic	130					260m/min (200-420)	
			pearlitic	230						
N	Alu. forging alloy	no hardened		60						
		hardened		100						
	Alu. casting alloy	no hardened	<12%Si	80						
		hardened	<12%Si	90						
		no hardened	>12%Si	130						600m/min (400-1200)
	Copper and copper alloy	brass		-						
		bronze		90						
	Non metallic material	thermoset		100						
		fiber reinforced plastic		-						
ebonite			-							

CNMG



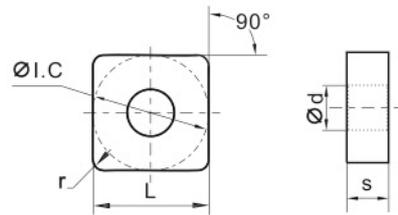
Order No.	Application	Model	Chip Breaker	Grade	Dimensions(mm)					Photos
					L	I.C	S	d	r	
311-01-001	finishing of steel.	CNMG120404	NPF	HC2115	12.9	12.7	4.76	5.16	0.4	
311-01-002	finishing of steel.	CNMG120408	NPF	HC2115	12.9	12.7	4.76	5.16	0.8	
312-01-001	semi-finishing of steel	CNMG120404	NPM	HC2115	12.9	12.7	4.76	5.16	0.4	
312-01-002	semi-finishing of steel	CNMG120408	NPM	HC2115	12.9	12.7	4.76	5.16	0.8	
312-01-003	semi-finishing of steel	CNMG120412	NPM	HC2115	12.9	12.7	4.76	5.16	1.2	
312-01-004	semi-finishing of steel	CNMG160608	NPM	HC2115	16.1	15.875	6.35	6.35	0.8	
312-01-005	semi-finishing of steel	CNMG160612	NPM	HC2115	16.1	15.875	6.35	6.35	1.2	
312-01-006	semi-finishing of steel	CNMG160616	NPM	HC2115	16.1	15.875	6.35	6.35	1.6	
312-01-007	semi-finishing of steel	CNMG190608	NPM	HC2115	19.3	19.05	6.35	7.94	0.8	
312-01-008	semi-finishing of steel	CNMG190612	NPM	HC2115	19.3	19.05	6.35	7.94	1.2	
312-01-009	semi-finishing of steel	CNMG190616	NPM	HC2115	19.3	19.05	6.35	7.94	1.6	
313-01-001	roughing of steel	CNMG120408	NPR	HC2025	12.9	12.7	4.76	5.16	0.8	
313-01-002	roughing of steel	CNMG120412	NPR	HC2025	12.9	12.7	4.76	5.16	1.2	
313-01-003	roughing of steel	CNMG120416	NPR	HC2025	12.9	12.7	4.76	5.16	1.6	
313-01-004	roughing of steel	CNMG160608	NPR	HC2025	16.1	15.875	6.35	6.35	0.8	
313-01-005	roughing of steel	CNMG160612	NPR	HC2025	16.1	15.875	6.35	6.35	1.2	
313-01-006	roughing of steel	CNMG160616	NPR	HC2025	16.1	15.875	6.35	6.35	1.6	
313-01-007	roughing of steel	CNMG190608	NPR	HC2025	19.3	19.05	6.35	7.94	0.8	
313-01-008	roughing of steel	CNMG190612	NPR	HC2025	19.3	19.05	6.35	7.94	1.2	
313-01-009	roughing of steel	CNMG190616	NPR	HC2025	19.3	19.05	6.35	7.94	1.6	
321-01-001	finishing of stainless steel.	CNMG090304	MSF	HP1215	9.7	9.525	3.18	3.81	0.4	
321-01-002	finishing of stainless steel.	CNMG120404	MSF	HP1215	12.9	12.7	4.76	5.16	0.4	
321-01-003	finishing of stainless steel.	CNMG120404	NMF	HP1215	12.9	12.7	4.76	5.16	0.4	
321-01-004	finishing of stainless steel.	CNMG120408	NMF	HP1215	12.9	12.7	4.76	5.16	0.8	
322-01-001	semi-finishing of stainless steel	CNMG120404	NMM	HP1215	12.9	12.7	4.76	5.16	0.4	
322-01-002	semi-finishing of stainless steel	CNMG120408	NMM	HP1215	12.9	12.7	4.76	5.16	0.8	
322-01-003	semi-finishing of stainless steel	CNMG160608	NMM	HP1215	16.1	15.875	6.35	6.35	0.8	
335-01-001	semi-finishing to roughing of cast iron	CNMG120404	-	HC3215	12.9	12.7	4.76	5.16	0.4	
335-01-002	semi-finishing to roughing of cast iron	CNMG120408	-	HC3215	12.9	12.7	4.76	5.16	0.8	
335-01-003	semi-finishing to roughing of cast iron	CNMG120412	-	HC3215	12.9	12.7	4.76	5.16	1.2	
335-01-004	semi-finishing to roughing of cast iron	CNMG160608	-	HC3215	16.1	15.875	6.35	6.35	0.8	
335-01-005	semi-finishing to roughing of cast iron	CNMG160612	-	HC3215	16.1	15.875	6.35	6.35	1.2	
335-01-006	semi-finishing to roughing of cast iron	CNMG160616	-	HC3215	16.1	15.875	6.35	6.35	1.6	
335-01-007	semi-finishing to roughing of cast iron	CNMG190608	-	HC3215	19.3	19.05	6.35	7.94	0.8	
335-01-008	semi-finishing to roughing of cast iron	CNMG190612	-	HC3215	19.3	19.05	6.35	7.94	1.2	
335-01-009	semi-finishing to roughing of cast iron	CNMG190616	-	HC3215	19.3	19.05	6.35	7.94	1.6	

DNMG



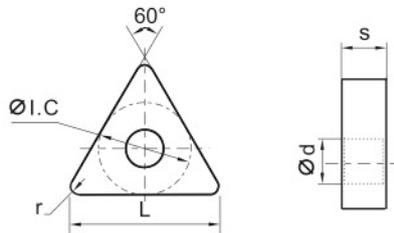
Order No.	Application	Model	Chip Breaker	Grade	Dimensions(mm)					Photos
					L	I.C	S	d	r	
311-02-001	finishing of steel.	DNMG150404	NPF	HC2115	15.5	12.7	4.76	5.16	0.4	
311-02-002	finishing of steel.	DNMG150408	NPF	HC2115	15.5	12.7	4.76	5.16	0.8	
311-02-003	finishing of steel.	DNMG150604	NPF	HC2115	15.5	12.7	6.35	5.16	0.4	
311-02-004	finishing of steel.	DNMG150608	NPF	HC2115	15.5	12.7	6.35	5.16	0.8	
312-02-001	semi-finishing of steel	DNMG110404	NPM	HC2115	11.6	9.525	4.76	3.81	0.4	
312-02-002	semi-finishing of steel	DNMG110408	NPM	HC2115	11.6	9.525	4.76	3.81	0.8	
312-02-003	semi-finishing of steel	DNMG110412	NPM	HC2115	11.6	9.525	4.76	3.81	1.2	
312-02-004	semi-finishing of steel	DNMG150404	NPM	HC2115	15.5	12.7	4.76	5.16	0.4	
312-02-005	semi-finishing of steel	DNMG150408	NPM	HC2115	15.5	12.7	4.76	5.16	0.8	
312-02-006	semi-finishing of steel	DNMG150412	NPM	HC2115	15.5	12.7	4.76	5.16	1.2	
312-02-007	semi-finishing of steel	DNMG150604	NPM	HC2115	15.5	12.7	6.35	5.16	0.4	
312-02-008	semi-finishing of steel	DNMG150608	NPM	HC2115	15.5	12.7	6.35	5.16	0.8	
312-02-009	semi-finishing of steel	DNMG150612	NPM	HC2115	15.5	12.7	6.35	5.16	1.2	
313-02-001	roughing of steel	DNMG150412	NPR	HC2025	15.5	12.7	4.76	5.16	1.2	
313-02-002	roughing of steel	DNMG150608	NPR	HC2025	15.5	12.7	6.35	5.16	0.8	
313-02-003	roughing of steel	DNMG150612	NPR	HC2025	15.5	12.7	6.35	5.16	1.2	
313-02-004	roughing of steel	DNMG150616	NPR	HC2025	15.5	12.7	6.35	5.16	1.6	
321-02-001	finishing of stainless steel.	DNMG110404	MSF	HP1215	11.6	9.525	4.76	3.81	0.4	
321-02-002	finishing of stainless steel.	DNMG150404	MSF	HP1215	15.5	12.7	4.76	5.16	0.4	
321-02-003	finishing of stainless steel.	DNMG150604	NMF	HP1215	15.5	12.7	6.35	5.16	0.4	
321-02-004	finishing of stainless steel.	DNMG150608	NMF	HP1215	15.5	12.7	6.35	5.16	0.8	
322-02-001	semi-finishing of stainless steel	DNMG110404	NMM	HP1215	11.6	9.525	4.76	3.81	0.4	
322-02-002	semi-finishing of stainless steel	DNMG110408	NMM	HP1215	11.6	9.525	4.76	3.81	0.8	
322-02-003	semi-finishing of stainless steel	DNMG150604	NMM	HP1215	15.5	12.7	6.35	5.16	0.4	
322-02-004	semi-finishing of stainless steel	DNMG150608	NMM	HP1215	15.5	12.7	6.35	5.16	0.8	
322-02-005	semi-finishing of stainless steel	DNMG150612	NMM	HP1215	15.5	12.7	6.35	5.16	1.2	
335-02-001	semi-finishing to roughing of cast iron	DNMG110408	-	HC3215	11.6	9.525	4.76	3.81	0.8	
335-02-002	semi-finishing to roughing of cast iron	DNMG150404	-	HC3215	15.5	12.7	4.76	5.16	0.4	
335-02-003	semi-finishing to roughing of cast iron	DNMG150408	NPM	HC3215	15.5	12.7	4.76	5.16	0.8	
335-02-004	semi-finishing to roughing of cast iron	DNMG150608	-	HC3215	15.5	12.7	6.35	5.16	0.8	
335-02-005	semi-finishing to roughing of cast iron	DNMG150612	-	HC3215	15.5	12.7	6.35	5.16	1.2	

SNMG



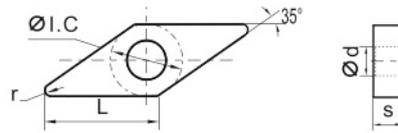
Order No.	Application	Model	Chip Breaker	Grade	Dimensions(mm)					Photos
					L	I.C	S	d	r	
311-03-001	finishing of steel.	SNMG 120404	NPF	HC2115	12.7	12.7	4.76	5.16	0.4	
311-03-002	finishing of steel.	SNMG 120408	NPF	HC2115	12.7	12.7	4.76	5.16	0.8	
312-03-001	semi-finishing of steel	SNMG 120404	NPM	HC2115	12.7	12.7	4.76	5.16	0.4	
312-03-002	semi-finishing of steel	SNMG 120408	NPM	HC2115	12.7	12.7	4.76	5.16	0.8	
312-03-003	semi-finishing of steel	SNMG 120412	NPM	HC2115	12.7	12.7	4.76	5.16	1.2	
312-03-004	semi-finishing of steel	SNMG 150608	NPM	HC2115	15.9	15.9	6.35	6.35	0.8	
312-03-005	semi-finishing of steel	SNMG 150612	NPM	HC2115	15.9	15.9	6.35	6.35	1.2	
312-03-006	semi-finishing of steel	SNMG 190612	NPM	HC2115	19.1	19.1	6.35	7.94	1.2	
313-03-001	roughing of steel	SNMG 120408	NPR	HC2025	12.7	12.7	4.76	5.16	0.4	
313-03-002	roughing of steel	SNMG 120412	NPR	HC2025	12.7	12.7	4.76	5.16	0.8	
313-03-003	roughing of steel	SNMG 150612	NPR	HC2025	15.9	15.9	6.35	6.35	1.2	
313-03-004	roughing of steel	SNMG 150616	NPR	HC2025	15.9	15.9	6.35	6.35	1.6	
313-03-005	roughing of steel	SNMG 190612	NPR	HC2025	19.1	19.1	6.35	7.94	1.2	
313-03-006	roughing of steel	SNMG 190616	NPR	HC2025	19.1	19.1	6.35	7.94	1.6	
321-03-001	finishing of stainless steel.	SNMG 120408	NMF	HP1215	12.7	12.7	4.76	5.16	0.8	
322-03-001	semi-finishing of stainless steel	SNMG 120404	NMM	HP1215	12.7	12.7	4.76	5.16	0.4	
322-03-002	semi-finishing of stainless steel	SNMG 120408	NMM	HP1215	12.7	12.7	4.76	5.16	0.8	
322-03-003	semi-finishing of stainless steel	SNMG 120412	NMM	HP1215	12.7	12.7	4.76	5.16	1.2	
322-03-004	semi-finishing of stainless steel	SNMG 150608	NMM	HP1215	15.9	15.9	6.35	6.35	0.8	
335-03-001	semi-finishing to roughing of cast iron	SNMG090304	-	HC3215	9.525	9.525	3.18	3.81	0.4	
335-03-002	semi-finishing to roughing of cast iron	SNMG090308	-	HC3215	9.525	9.525	3.18	3.81	0.8	
335-03-003	semi-finishing to roughing of cast iron	SNMG 120404	-	HC3215	12.7	12.7	4.76	5.16	0.4	
335-03-004	semi-finishing to roughing of cast iron	SNMG 120408	-	HC3215	12.7	12.7	4.76	5.16	0.8	
335-03-005	semi-finishing to roughing of cast iron	SNMG 120412	-	HC3215	12.7	12.7	4.76	5.16	1.2	
335-03-006	semi-finishing to roughing of cast iron	SNMG 150608	-	HC3215	15.9	15.9	6.35	6.35	0.8	
335-03-007	semi-finishing to roughing of cast iron	SNMG 150612	-	HC3215	15.9	15.9	6.35	6.35	1.2	
335-03-008	semi-finishing to roughing of cast iron	SNMG190612	-	HC3215	19.1	19.1	6.35	7.94	1.2	
335-03-009	semi-finishing to roughing of cast iron	SNMG190616	-	HC3215	19.1	19.1	6.35	7.94	1.6	
335-03-010	semi-finishing to roughing of cast iron	SNMG250724	-	HC3215	25.4	25.4	7.94	9.12	2.4	
335-03-011	semi-finishing to roughing of cast iron	SNMG250924	-	HC3215	25.4	25.4	9.525	9.12	2.4	

TNMG



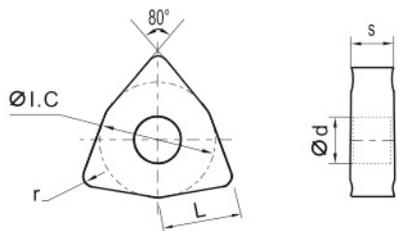
Order No.	Application	Modle	Chip Breaker	Grade	Dimensions(mm)					Photos
					L	I.C	S	d	r	
311-04-001	finishing of steel.	TNMG 160404	NPF	HC2115	16.5	9.525	4.76	3.81	0.4	
311-04-002	finishing of steel.	TNMG 160408	NPF	HC2115	16.5	9.525	4.76	3.81	0.8	
312-04-001	semi-finishing of steel	TNMG 160404	NPM	HC2115	16.5	9.525	4.76	3.81	0.4	
312-04-002	semi-finishing of steel	TNMG 160408	NPM	HC2115	16.5	9.525	4.76	3.81	0.8	
312-04-003	semi-finishing of steel	TNMG 160412	NPM	HC2115	16.5	9.525	4.76	3.81	1.2	
312-04-004	semi-finishing of steel	TNMG 220404	NPM	HC2115	22	12.7	4.76	5.16	0.4	
312-04-005	semi-finishing of steel	TNMG 220408	NPM	HC2115	22	12.7	4.76	5.16	0.8	
312-04-006	semi-finishing of steel	TNMG 220412	NPM	HC2115	22	12.7	4.76	5.16	1.2	
		TNMG 220416	NPM	HC2115	22	12.7	4.76	5.16	1.6	
313-04-001	roughing of steel	TNMG 160404	NPR	HC2025	16.5	9.525	4.76	3.81	0.4	
313-04-002	roughing of steel	TNMG 160408	NPR	HC2025	16.5	9.525	4.76	3.81	0.8	
313-04-003	roughing of steel	TNMG 160412	NPR	HC2025	16.5	9.525	4.76	3.81	1.2	
313-04-004	roughing of steel	TNMG 220412	NPR	HC2025	22	12.7	4.76	5.16	1.2	
313-04-005	roughing of steel	TNMG 220416	NPR	HC2025	22	12.7	4.76	5.16	1.6	
313-04-006	roughing of steel	TNMG 270612	NPR	HC2025	27.5	15.9	6.35	6.35	1.2	
321-04-001	finishing of stainless steel.	TNMG 160404	MSF	HP1215	16.5	9.525	4.76	3.81	0.4	
321-04-002	finishing of stainless steel.	TNMG 160404	NMF	HP1215	16.5	9.525	4.76	3.81	0.4	
321-04-003	finishing of stainless steel.	TNMG 160408	NMF	HP1215	16.5	9.525	4.76	3.81	0.8	
322-04-001	semi-finishing of stainless steel	TNMG 160404	NMM	HP1215	16.5	9.525	4.76	3.81	0.4	
322-04-002	semi-finishing of stainless steel	TNMG 160408	NMM	HP1215	16.5	9.525	4.76	3.81	0.8	
322-04-003	semi-finishing of stainless steel	TNMG 220404	NMM	HP1215	22	12.7	4.76	5.16	0.4	
322-04-004	semi-finishing of stainless steel	TNMG 220408	NMM	HP1215	22	12.7	4.76	5.16	0.8	
322-04-005	semi-finishing of stainless steel	TNMG 220412	NMM	HP1215	22	12.7	4.76	5.16	1.2	
335-04-001	semi-finishing to roughing of cast iron	TNMG 160404	-	HC3215	16.5	9.525	4.76	3.81	0.4	
335-04-002	semi-finishing to roughing of cast iron	TNMG 160408	-	HC3215	16.5	9.525	4.76	3.81	0.8	
335-04-003	semi-finishing to roughing of cast iron	TNMG 160412	-	HC3215	16.5	9.525	4.76	3.81	1.2	
335-04-004	semi-finishing to roughing of cast iron	TNMG 220408	-	HC3215	22	12.7	4.76	5.16	0.8	
335-04-005	semi-finishing to roughing of cast iron	TNMG 220412	-	HC3215	22	12.7	4.76	5.16	1.2	
335-04-006	semi-finishing to roughing of cast iron	TNMG 220416	-	HC3215	22	12.7	4.76	5.16	1.6	

VNMG



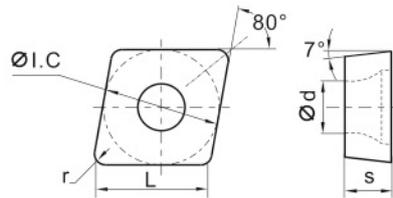
Order No.	Application	Model	Chip Breaker	Grade	Dimensions(mm)					Photos
					L	I.C	S	d	r	
311-05-001	finishing of steel.	VNMG160404	NPF	HC2115	16.6	9.525	4.76	3.81	0.4	
311-05-002	finishing of steel.	VNMG160408	NPF	HC2115	16.6	9.525	4.76	3.81	0.8	
312-05-001	semi-finishing of steel	VNMG160404	NPM	HC2115	16.6	9.525	4.76	3.81	0.4	
312-05-002	semi-finishing of steel	VNMG160408	NPM	HC2115	16.6	9.525	4.76	3.81	0.8	
312-05-003	semi-finishing of steel	VNMG160412	NPM	HC2115	16.6	9.525	4.76	3.81	1.2	
313-05-001	roughing of steel	VNMG160412	NPR	HC2125	16.6	9.525	4.76	3.81	1.2	
321-05-001	finishing of stainless steel.	VNMG160404	MSF	HP1215	16.6	9.525	4.76	3.81	0.4	
322-05-001	semi-finishing of stainless steel	VNMG160404	NMM	HP1215	16.6	9.525	4.76	3.81	0.4	
322-05-002	semi-finishing of stainless steel	VNMG160408	NMM	HP1215	16.6	9.525	4.76	3.81	0.8	
335-05-001	semi-finishing to roughing of cast iron	VNMG160404	-	HC3215	16.6	9.525	4.76	3.81	0.4	
335-05-002	semi-finishing to roughing of cast iron	VNMG160408	-	HC3215	16.6	9.525	4.76	3.81	0.8	

WNMG



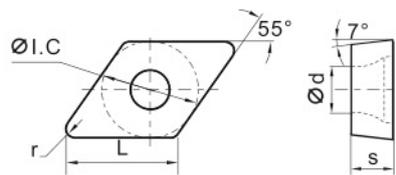
Order No.	Application	Model	Chip Breaker	Grade	Dimensions(mm)					Photos
					L	I.C	S	d	r	
311-06-001	finishing of steel.	WNMG060404	NPF	HC2115	6.5	9.525	4.76	3.81	0.4	
311-06-002	finishing of steel.	WNMG060408	NPF	HC2115	6.5	9.525	4.76	3.81	0.8	
311-06-003	finishing of steel.	WNMG080404	NPF	HC2115	8.7	12.7	4.76	5.16	0.4	
311-06-004	finishing of steel.	WNMG080408	NPF	HC2115	8.7	12.7	4.76	5.16	0.5	
312-06-001	semi-finishing of steel	WNMG060408	NPM	HC2115	6.5	9.525	4.76	3.81	0.8	
312-06-002	semi-finishing of steel	WNMG080404	NPM	HC2115	8.7	12.7	4.76	5.16	0.4	
312-06-003	semi-finishing of steel	WNMG080408	NPM	HC2115	8.7	12.7	4.76	5.16	0.5	
312-06-004	semi-finishing of steel	WNMG080412	NPM	HC2115	8.7	12.7	4.76	5.16	1.2	
313-06-001	roughing of steel	WNMG080408	NPR	HC2025	8.7	12.7	4.76	5.16	0.5	
313-06-002	roughing of steel	WNMG080412	NPR	HC2025	8.7	12.7	4.76	5.16	1.2	
321-06-001	finishing of stainless steel.	WNMG060404	MSF	HP1215	6.5	9.525	4.76	3.81	0.4	
321-06-002	finishing of stainless steel.	WNMG080404	MSF	HP1215	8.7	12.7	4.76	5.16	0.4	
321-06-003	finishing of stainless steel.	WNMG060408	NMF	HP1215	6.5	9.525	4.76	3.81	0.8	
321-06-004	finishing of stainless steel.	WNMG080404	NMF	HP1215	8.7	12.7	4.76	5.16	0.4	
321-06-005	finishing of stainless steel.	WNMG080408	NMF	HP1215	8.7	12.7	4.76	5.16	0.5	
322-06-001	semi-finishing of stainless steel	WNMG060408	NMM	HP1215	6.5	9.525	4.76	3.81	0.8	
322-06-002	semi-finishing of stainless steel	WNMG060412	NMM	HP1215	6.5	9.525	4.76	3.81	1.2	
322-06-003	semi-finishing of stainless steel	WNMG080404	NMM	HP1215	8.7	12.7	4.76	5.16	0.4	
322-06-004	semi-finishing of stainless steel	WNMG080408	NMM	HP1215	8.7	12.7	4.76	5.16	0.5	
335-06-001	semi-finishing to roughing of cast iron	WNMG080404	-	HC3215	8.7	12.7	4.76	5.16	0.4	
335-06-002	semi-finishing to roughing of cast iron	WNMG080408	-	HC3215	8.7	12.7	4.76	5.16	0.5	
335-06-003	semi-finishing to roughing of cast iron	WNMG080412	-	HC3215	8.7	12.7	4.76	5.16	1.2	

CCMT



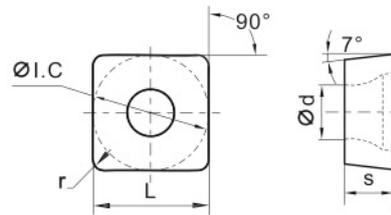
Order No.	Application	Model	Chip Breaker	Grade	Dimensions(mm)					Photos
					L	I.C.	S	d	r	
311-07-001	finishing of steel.	CCMT060202	NTF	HC2115	6.4	6.35	2.38	2.8	0.2	
311-07-002	finishing of steel.	CCMT060204	NTF	HC2115	6.4	6.35	2.38	2.8	0.4	
311-07-003	finishing of steel.	CCMT09T304	NTF	HC2115	9.7	9.525	3.97	4.4	0.4	
311-07-004	finishing of steel.	CCMT09T308	NTF	HC2115	9.7	9.525	3.97	4.4	0.8	
311-07-005	finishing of steel.	CCMT120404	NTF	HC2115	12.9	12.7	4.76	5.56	0.4	
311-07-006	finishing of steel.	CCMT120408	NTF	HC2115	12.9	12.7	4.76	5.56	0.8	
312-07-001	semi-finishing of steel	CCMT060204	NTM	HC2115	6.4	6.35	2.38	2.8	0.4	
312-07-002	semi-finishing of steel	CCMT060208	NTM	HC2115	6.4	6.35	2.38	2.8	0.8	
312-07-003	semi-finishing of steel	CCMT09T304	NTM	HC2115	9.7	9.525	3.97	4.4	0.4	
312-07-004	semi-finishing of steel	CCMT09T308	NTM	HC2115	9.7	9.525	3.97	4.4	0.8	
312-07-005	semi-finishing of steel	CCMT120404	NTM	HC2115	12.9	12.7	4.76	5.56	0.4	
312-07-006	semi-finishing of steel	CCMT120408	NTM	HC2115	12.9	12.7	4.76	5.56	0.8	
313-07-001	roughing of steel	CCMT060208	NTR	HC2125	6.4	6.35	2.38	2.8	0.8	
313-07-002	roughing of steel	CCMT09T304	NTR	HC2125	9.7	9.525	3.97	4.4	0.4	
313-07-003	roughing of steel	CCMT09T308	NTR	HC2125	9.7	9.525	3.97	4.4	0.8	
313-07-004	roughing of steel	CCMT120408	NTR	HC2125	12.9	12.7	4.76	5.56	0.8	
313-07-005	roughing of steel	CCMT120412	NTR	HC2125	12.9	12.7	4.76	5.56	1.2	
321-07-001	finishing of stainless steel.	CCMT060202	NTF	HP1215	6.4	6.35	2.38	2.8	0.2	
321-07-002	finishing of stainless steel.	CCMT060204	NTF	HP1215	6.4	6.35	2.38	2.8	0.4	
321-07-003	finishing of stainless steel.	CCMT09T304	NTF	HP1215	9.7	9.525	3.97	4.4	0.4	
321-07-004	finishing of stainless steel.	CCMT09T308	NTF	HP1215	9.7	9.525	3.97	4.4	0.8	
321-07-005	finishing of stainless steel.	CCMT120404	NTF	HP1215	12.9	12.7	4.76	5.56	0.4	
321-07-006	finishing of stainless steel.	CCMT120408	NTF	HP1215	12.9	12.7	4.76	5.56	0.8	
322-07-001	semi-finishing of stainless steel	CCMT060204	NTM	HP1215	6.4	6.35	2.38	2.8	0.4	
322-07-002	semi-finishing of stainless steel	CCMT060208	NTM	HP1215	6.4	6.35	2.38	2.8	0.8	
322-07-003	semi-finishing of stainless steel	CCMT09T304	NTM	HP1215	9.7	9.525	3.97	4.4	0.4	
322-07-004	semi-finishing of stainless steel	CCMT09T308	NTM	HP1215	9.7	9.525	3.97	4.4	0.8	
322-07-005	semi-finishing of stainless steel	CCMT120404	NTM	HP1215	12.9	12.7	4.76	5.56	0.4	
322-07-006	semi-finishing of stainless steel	CCMT120408	NTM	HP1215	12.9	12.7	4.76	5.56	0.8	
335-07-001	semi-finishing to roughing of cast iron	CCMT060208	NTR	HC3215	6.4	6.35	2.38	2.8	0.8	
335-07-002	semi-finishing to roughing of cast iron	CCMT09T304	NTR	HC3215	9.7	9.525	3.97	4.4	0.4	
335-07-003	semi-finishing to roughing of cast iron	CCMT09T308	NTR	HC3215	9.7	9.525	3.97	4.4	0.8	
335-07-004	semi-finishing to roughing of cast iron	CCMT120408	NTR	HC3215	12.9	12.7	4.76	5.56	0.8	
335-07-005	semi-finishing to roughing of cast iron	CCMT120412	NTR	HC3215	12.9	12.7	4.76	5.56	1.2	

DCMT



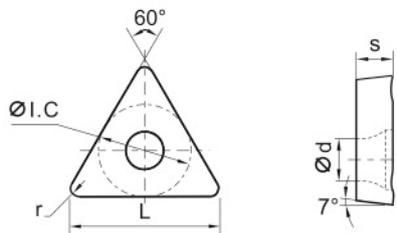
Order No.	Application	Model	Chip Breaker	Grade	Dimensions(mm)					Photos
					L	I.C	S	d	r	
311-08-001	finishing of steel.	DCMT070204	NTF	HC2115	7.8	6.35	2.38	2.8	0.4	
311-08-002	finishing of steel.	DCMT11T302	NTF	HC2115	11.6	9.525	3.97	4.4	0.2	
311-08-003	finishing of steel.	DCMT11T304	NTF	HC2115	11.6	9.525	3.97	4.4	0.4	
312-08-001	semi-finishing of steel	DCMT070204	NTM	HC2115	7.8	6.35	2.38	2.8	0.4	
312-08-002	semi-finishing of steel	DCMT070208	NTM	HC2115	7.8	6.35	2.38	2.8	0.8	
312-08-003	semi-finishing of steel	DCMT11T304	NTM	HC2115	11.6	9.525	3.97	4.4	0.4	
312-08-004	semi-finishing of steel	DCMT11T308	NTM	HC2115	11.6	9.525	3.97	4.4	0.8	
313-08-001	roughing of steel	DCMT11T304	NTR	HC2125	11.6	9.525	3.97	4.4	0.4	
313-08-002	roughing of steel	DCMT11T308	NTR	HC2125	11.6	9.525	3.97	4.4	0.8	
321-08-001	finishing of stainless steel.	DCMT070204	NTF	HP1215	7.8	6.35	2.38	2.8	0.4	
321-08-002	finishing of stainless steel.	DCMT11T302	NTF	HP1215	11.6	9.525	3.97	4.4	0.2	
321-08-003	finishing of stainless steel.	DCMT11T304	NTF	HP1215	11.6	9.525	3.97	4.4	0.4	
322-08-001	semi-finishing of stainless steel	DCMT070204	NTM	HP1215	7.8	6.35	2.38	2.8	0.4	
322-08-002	semi-finishing of stainless steel	DCMT070208	NTM	HP1215	7.8	6.35	2.38	2.8	0.8	
322-08-003	semi-finishing of stainless steel	DCMT11T304	NTM	HP1215	11.6	9.525	3.97	4.4	0.4	
322-08-004	semi-finishing of stainless steel	DCMT11T308	NTM	HP1215	11.6	9.525	3.97	4.4	0.8	
335-08-001	semi-finishing to roughing of cast iron	DCMT11T304	NTR	HC3215	11.6	9.525	3.97	4.4	0.4	
335-08-002	semi-finishing to roughing of cast iron	DCMT11T308	NTR	HC3215	11.6	9.525	3.97	4.4	0.8	

SCMT



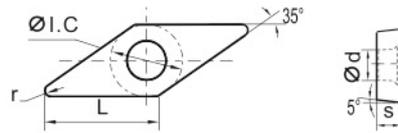
Order No.	Application	Model	Chip Breaker	Grade	Dimensions(mm)					Photos
					L	I.C	S	d	r	
311-09-001	finishing of steel.	SCMT09T304	NTF	HC2115	9.525	9.525	3.97	4.4	0.4	
311-09-002	finishing of steel.	SCMT09T308	NTF	HC2115	9.525	9.525	3.97	4.4	0.8	
311-09-003	finishing of steel.	SCMT120404	NTF	HC2115	12.7	12.7	4.76	5.56	0.4	
312-09-001	semi-finishing of steel	SCMT09T304	NTM	HC2115	9.525	9.525	3.97	4.4	0.4	
312-09-002	semi-finishing of steel	SCMT09T308	NTM	HC2115	9.525	9.525	3.97	4.4	0.8	
312-09-003	semi-finishing of steel	SCMT120404	NTM	HC2115	12.7	12.7	4.76	5.56	0.4	
312-09-004	semi-finishing of steel	SCMT120408	NTM	HC2115	12.7	12.7	4.76	5.56	0.8	
312-09-005	semi-finishing of steel	SCMT120412	NTM	HC2115	12.7	12.7	4.76	5.56	1.2	
313-09-001	roughing of steel	SCMT09T304	NTR	HC2125	9.525	9.525	3.97	4.4	0.4	
313-09-002	roughing of steel	SCMT09T308	NTR	HC2125	9.525	9.525	3.97	4.4	0.8	
313-09-003	roughing of steel	SCMT120404	NTR	HC2125	12.7	12.7	4.76	5.56	0.4	
313-09-004	roughing of steel	SCMT120408	NTR	HC2125	12.7	12.7	4.76	5.56	0.8	
313-09-005	roughing of steel	SCMT120412	NTR	HC2125	12.7	12.7	4.76	5.56	1.2	
321-09-001	semi-finishing to roughing of steel	SCMT09T304	-	HC2115	9.525	9.525	3.97	4.4	0.4	
321-09-002	semi-finishing to roughing of steel	SCMT120404	-	HC2115	12.7	12.7	4.76	5.56	0.4	
321-09-003	finishing of stainless steel.	SCMT09T304	NTF	HP1215	9.525	9.525	3.97	4.4	0.4	
321-09-004	finishing of stainless steel.	SCMT09T308	NTF	HP1215	9.525	9.525	3.97	4.4	0.8	
321-09-005	finishing of stainless steel.	SCMT120404	NTF	HP1215	12.7	12.7	4.76	5.56	0.4	
322-09-001	semi-finishing of stainless steel	SCMT09T304	NTM	HP1215	9.525	9.525	3.97	4.4	0.4	
322-09-002	semi-finishing of stainless steel	SCMT09T308	NTM	HP1215	9.525	9.525	3.97	4.4	0.8	
322-09-003	semi-finishing of stainless steel	SCMT120404	NTM	HP1215	12.7	12.7	4.76	5.56	0.4	
322-09-004	semi-finishing of stainless steel	SCMT120408	NTM	HP1215	12.7	12.7	4.76	5.56	0.8	
322-09-005	semi-finishing of stainless steel	SCMT120412	NTM	HP1215	12.7	12.7	4.76	5.56	1.2	
335-09-001	semi-finishing to roughing of cast iron	SCMT09T304	NTR	HC3215	9.525	9.525	3.97	4.4	0.4	
335-09-002	semi-finishing to roughing of cast iron	SCMT09T308	NTR	HC3215	9.525	9.525	3.97	4.4	0.8	
335-09-003	semi-finishing to roughing of cast iron	SCMT120404	NTR	HC3215	12.7	12.7	4.76	5.56	0.4	
335-09-004	semi-finishing to roughing of cast iron	SCMT120408	NTR	HC3215	12.7	12.7	4.76	5.56	0.8	
335-09-005	semi-finishing to roughing of cast iron	SCMT120412	NTR	HC3215	12.7	12.7	4.76	5.56	1.2	

TCMT



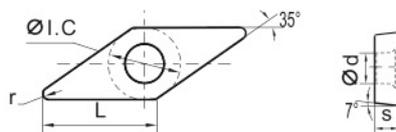
Order No.	Application	Model	Chip Breaker	Grade	Dimensions(mm)					Photos
					L	I.C	S	d	r	
311-10-001	finishing of steel.	TCMT110202	NTF	HC2115	11	6.35	2.38	2.8	0.2	
311-10-002	finishing of steel.	TCMT110204	NTF	HC2115	11	6.35	2.38	2.8	0.4	
311-10-003	finishing of steel.	TCMT16T304	NTF	HC2115	16.5	9.525	3.97	4.4	0.4	
311-10-004	finishing of steel.	TCMT16T308	NTF	HC2115	16.5	9.525	3.97	4.4	0.8	
312-10-001	semi-finishing of steel	TCMT090204	NTM	HC2115	9.6	5.56	2.38	2.5	0.4	
312-10-002	semi-finishing of steel	TCMT090208	NTM	HC2115	9.6	5.56	2.38	2.5	0.8	
312-10-003	semi-finishing of steel	TCMT110204	NTM	HC2115	11	6.35	2.38	2.8	0.4	
312-10-004	semi-finishing of steel	TCMT110208	NTM	HC2115	11	6.35	2.38	2.8	0.8	
312-10-005	semi-finishing of steel	TCMT16T304	NTM	HC2115	16.5	9.525	3.97	4.4	0.4	
312-10-006	semi-finishing of steel	TCMT16T308	NTM	HC2115	16.5	9.525	3.97	4.4	0.8	
312-10-007	semi-finishing of steel	TCMT16T312	NTM	HC2115	16.5	9.525	3.97	4.4	1.2	
313-10-001	roughing of steel	TCMT16T308	NTR	HC2125	16.5	9.525	3.97	4.4	0.8	
313-10-002	roughing of steel	TCMT220408	NTR	HC2125	22	12.7	4.76	5.5	0.8	
321-10-001	finishing of stainless steel.	TCMT110202	NTF	HP1215	11	6.35	2.38	2.8	0.2	
321-10-002	finishing of stainless steel.	TCMT110204	NTF	HP1215	11	6.35	2.38	2.8	0.4	
321-10-003	finishing of stainless steel.	TCMT16T304	NTF	HP1215	16.5	9.525	3.97	4.4	0.4	
321-10-004	finishing of stainless steel.	TCMT16T308	NTF	HP1215	16.5	9.525	3.97	4.4	0.8	
322-10-001	semi-finishing of stainless steel	TCMT090204	NTM	HP1215	9.6	5.56	2.38	2.5	0.4	
322-10-002	semi-finishing of stainless steel	TCMT090208	NTM	HP1215	9.6	5.56	2.38	2.5	0.8	
322-10-003	semi-finishing of stainless steel	TCMT110204	NTM	HP1215	11	6.35	2.38	2.8	0.4	
322-10-004	semi-finishing of stainless steel	TCMT110208	NTM	HP1215	11	6.35	2.38	2.8	0.8	
322-10-005	semi-finishing of stainless steel	TCMT16T304	NTM	HP1215	16.5	9.525	3.97	4.4	0.4	
322-10-006	semi-finishing of stainless steel	TCMT16T308	NTM	HP1215	16.5	9.525	3.97	4.4	0.8	
322-10-007	semi-finishing of stainless steel	TCMT16T312	NTM	HP1215	16.5	9.525	3.97	4.4	1.2	
335-10-001	semi-finishing to roughing of cast iron	TCMT16T308	NTR	HC3215	16.5	9.525	3.97	4.4	0.8	
335-10-002	semi-finishing to roughing of cast iron	TCMT220408	NTR	HC3215	22	12.7	4.76	5.5	0.8	

VBMT



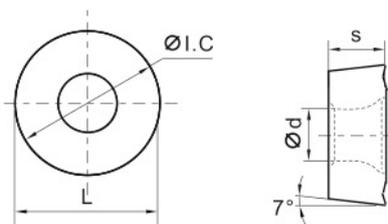
Order No.	Application	Modle	Chip Breaker	Grade	Dimensions(mm)					Photos
					L	I.C	S	d	r	
311-11-001	finishing of steel.	VBMT 160404	NTF	HC2115	16.5	9.525	4.76	4.4	0.4	
311-11-002	finishing of steel.	VBMT 160408	NTF	HC2115	16.5	9.525	4.76	4.4	0.8	
312-11-001	semi-finishing of steel	VBMT 110304	NTM	HC2115	11	6.35	3.18	2.8	0.4	
312-11-002	semi-finishing of steel	VBMT 160404	NTM	HC2115	16.5	9.525	4.76	4.4	0.4	
312-11-003	semi-finishing of steel	VBMT 160408	NTM	HC2115	16.5	9.525	4.76	4.4	0.8	
312-11-004	semi-finishing of steel	VBMT 160412	NTM	HC2115	16.5	9.525	4.76	4.4	1.2	
313-11-001	roughing of steel	VBMT 160404	NTR	HC2125	16.5	9.525	4.76	4.4	0.4	
313-11-002	roughing of steel	VBMT 160408	NTR	HC2125	16.5	9.525	4.76	4.4	0.8	
321-11-001	finishing of stainless steel.	VBMT 160404	NTF	OP1215	16.5	9.525	4.76	4.4	0.4	
321-11-002	finishing of stainless steel.	VBMT 160408	NTF	OP1215	16.5	9.525	4.76	4.4	0.8	
322-11-001	semi-finishing of stainless steel	VBMT 110304	NTM	OP1215	11	6.35	3.18	2.8	0.4	
322-11-002	semi-finishing of stainless steel	VBMT 160404	NTM	OP1215	16.5	9.525	4.76	4.4	0.4	
322-11-003	semi-finishing of stainless steel	VBMT 160408	NTM	OP1215	16.5	9.525	4.76	4.4	0.8	
322-11-004	semi-finishing of stainless steel	VBMT 160412	NTM	OP1215	16.5	9.525	4.76	4.4	1.2	
335-11-001	semi-finishing to roughing of cast iron	VBMT 160404	NTR	HC3215	16.5	9.525	4.76	4.4	0.4	
335-11-002	semi-finishing to roughing of cast iron	VBMT 160408	NTR	HC3215	16.5	9.525	4.76	4.4	0.8	

VCMT



Order No.	Application	Model	Chip Breaker	Grade	Dimensions(mm)					Photos
					L	I.C	S	d	r	
311-12-001	finishing of steel.	VCMT110302	NTF	HC2115	11	6.35	3.18	2.8	0.2	
311-12-002	finishing of steel.	VCMT110304	NTF	HC2115	11	6.35	3.18	2.8	0.4	
311-12-003	finishing of steel.	VCMT160404	NTF	HC2115	16.6	9.525	4.76	3.81	0.4	
312-12-001	semi-finishing of steel	VCMT160404	NTM	HC2115	16.6	9.525	4.76	3.81	0.4	
312-12-002	semi-finishing of steel	VCMT160408	NTM	HC2115	16.6	9.525	4.76	3.81	0.8	
313-12-001	roughing of steel	VCMT160404	NTR	HC2125	16.6	9.525	4.76	3.81	0.4	
321-12-001	finishing of stainless steel.	VCMT110302	NTF	OP1215	11	6.35	3.18	2.8	0.2	
321-12-002	finishing of stainless steel.	VCMT110304	NTF	OP1215	11	6.35	3.18	2.8	0.4	
321-12-003	finishing of stainless steel.	VCMT160404	NTF	OP1215	16.6	9.525	4.76	3.81	0.4	

RCMT

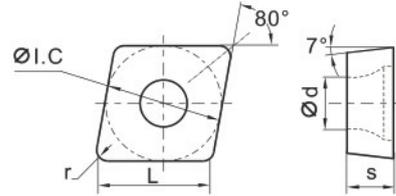


Order No.	Application	Model	Chip Breaker	Grade	Dimensions(mm)					Photos
					L	I.C	S	d	r	
315-13-001	semi-finishing to roughing of steel	RCMX0803MO	-	HC2125	8	8	3.18	3.36		
315-13-002	semi-finishing to roughing of steel	RCMX1003MO	-	HC2125						
315-13-003	semi-finishing to roughing of steel	RCMX1204MO	-	HC2125						
315-13-004	semi-finishing to roughing of steel	RCMT1606MO	-	HC2125	16	16	6.35	5.5		
325-13-001	semi-finishing to roughing of cast iron	RCMT0803MO	-	HC3215	8	8	3.18	3.36		
325-13-002	semi-finishing to roughing of cast iron	RCMX1003MO	-	HC3215						
325-13-003	semi-finishing to roughing of cast iron	RCMX1204MO	-	HC3215						
325-13-004	semi-finishing to roughing of cast iron	RCMT1606MO	-	HC3215	16	16	6.35	5.5		

Feature:

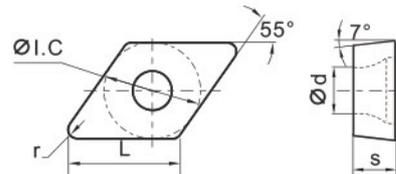
- Grade HK434 without coating: combined with extra micrograin tungsten carbide and cobalt powder, achieved fully density in internal organization by low pressure sintering. High hardness, high strength and good thermal conductivity fit for finishing to semi-finishing of non-ferrous and cast iron.
- Chipbreaker NL : suitable for aluminum and aluminum alloy material.

CCGX



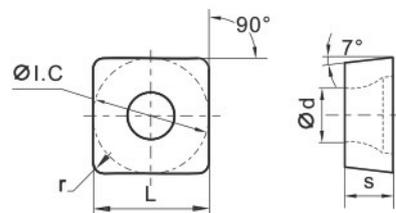
Order No.	Modle	Chip Breaker	Grade	Dimensions(mm)				
				L	I.C	S	d	r
344-14-001	CCGX060202	NL	HK434	6.4	6.35	2.38	2.8	0.2
344-14-002	CCGX060204	NL	HK434	6.4	6.35	2.38	2.8	0.4
344-14-003	CCGX09T302	NL	HK434	9.7	9.525	3.97	4.4	0.2
344-14-004	CCGX09T304	NL	HK434	9.7	9.525	3.97	4.4	0.4
344-14-005	CCGX09T308	NL	HK434	9.7	9.525	3.97	4.4	0.8
344-14-006	CCGX120404	NL	HK434	12.9	12.7	4.76	5.56	0.4
344-14-007	CCGX120408	NL	HK434	12.9	12.7	4.76	5.56	0.8

DCGX



Order No.	Modle	Chip Breaker	Grade	Dimensions(mm)				
				L	I.C	S	d	r
344-15-001	DCGX070202	NL	HK434	7.8	6.35	2.38	2.8	0.2
344-15-002	DCGX070204	NL	HK434	7.8	6.35	2.38	2.8	0.4
344-15-003	DCGX11T302	NL	HK434	11.6	9.525	3.97	4.4	0.2
344-15-004	DCGX11T304	NL	HK434	11.6	9.525	3.97	4.4	0.4
344-15-005	DCGX11T308	NL	HK434	11.6	9.525	3.97	4.4	0.8

SCGX



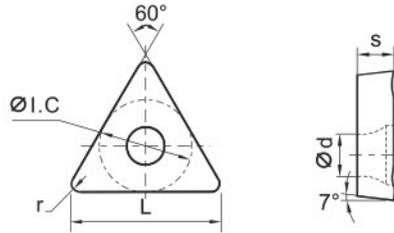
Order No.	Modle	Chip Breaker	Grade	Dimensions(mm)				
				L	I.C	S	d	r
344-16-001	SCGX09T304	NL	HK434	9.525	9.525	3.97	4.4	0.2
344-16-002	SCGX09T308	NL	HK434	9.525	9.525	3.97	4.4	0.8
344-16-003	SCGX120408	NL	HK434	12.7	12.7	4.76	5.56	0.8

TURING POSITIVE INSERTS FOR ALUMINIUM

Feature:

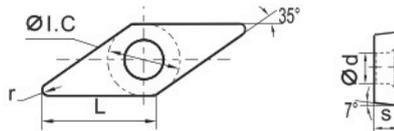
- Grade HK434 without coating: combined with extra micrograin tungsten carbide and cobalt powder, achieved fully density in internal organization by low pressure sintering. High hardness, high strength and good thermal conductivity fit for finishing to semi-finishing of non-ferrous and cast iron.
- Chipbreaker NL : suitable for aluminum and aluminum alloy material.

TCGX



Order No.	Modle	Chip Breaker	Grade	Dimensions(mm)				
				L	I.C	S	d	r
344-18-001	TCGX090204	NL	HK434	9.6	5.56	2.38	2.5	0.2
344-18-002	TCGX110202	NL	HK434	11	6.35	2.38	2.8	0.2
344-18-003	TCGX110204	NL	HK434	11	6.35	2.38	2.8	0.4
344-18-004	TCGX16T308	NL	HK434	16.5	9.525	3.97	4.4	0.8

VCGX



Order No.	Modle	Chip Breaker	Grade	Dimensions(mm)				
				L	I.C	S	d	r
344-19-001	VCGX110302	NL	HK434	11	6.35	3.18	2.8	0.2
344-19-002	VCGX110304	NL	HK434	11	6.35	3.18	2.8	0.4
344-19-003	VCGX110308	NL	HK434	11	6.35	3.18	2.8	0.8
344-19-004	VCGX160402	NL	HK434	16.6	9.525	4.76	4.4	0.2
344-19-005	VCGX160404	NL	HK434	16.6	9.525	4.76	4.4	0.4
344-19-006	VCGX160408	NL	HK434	16.6	9.525	4.76	4.4	0.8
344-19-007	VCGX160412	NL	HK434	16.6	9.525	4.76	4.4	1.2
344-19-008	VCGX220530	NL	HK434	22	12.7	5.56	5.5	3

MILLING CUTTER

INDEXABLE FACE MILLS & CARBIDE INSERTS

112



INDEXABLE END MILLS & CARBIDE INSERTS

122



INDEXABLE SIDE MILLING CUTTERS & CARBIDE INSERTS

126



INDEXABLE HELICAL MILLING CUTTER & CARBIDE INSERTS

131



SOLID CARBIDE END MILLS

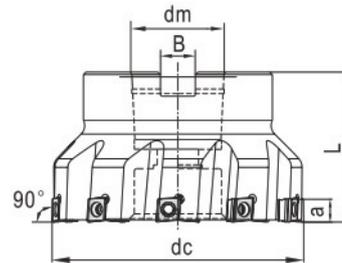
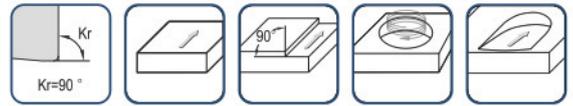
132



SQUARE SHOULDER INDEXABLE FACE MILLS FOR CNCQ INSERTS

Features:

- 90° major cutting angle.
- Radial and Axial run-out less than 0.02mm.
- Inserts to be hold by swiss SFS high strength screws.
- Made of quality alloy steel and hardness HRC45-HRC48.
- Big chip space for moving chip quickly and smoothly.
- Easy cutting due to big positive rake angel.
- Suitable for light to medium square shoulder milling.



Order No.	Model	Size (mm)					No. of teeth	Insert	Forcing Screw	Screw	Torx wrench
		dc	dm	a	B	L					
231-54-001	FM90-50CN09.XDZ24	50	24	9	10	50	5	CNCQ090508	MS10035	C040A11S	WT15
231-54-002	FM90-63CN09.XDZ24	63	24	9	10	50	6	CNCQ090508	MS10035	C040A11S	WT15
231-54-003	FM90-80CN09.XDZ30	80	30	9	12	55	8	CNCQ090508	MS12045	C040A11S	WT15
231-54-004	FM90-100CN09.XDZ38	100	38	9	14	63	10	CNCQ090508	SXDZ38	C040A11S	WT15
231-54-005	FM90-125CN09.XDZ48	125	48	9	16	63	12	CNCQ090508	SXDZ48	C040A11S	WT15
231-54-006	FM90-80CN12.XDZ30	80	30	12	12	55	7	CNCQ120508	MS12045	C050A12S	WT20
231-54-007	FM90-100CN12.XDZ38	100	38	12	14	63	9	CNCQ120508	SXDZ38	C050A12S	WT20
231-54-008	FM90-125CN12.XDZ48	125	48	12	16	63	11	CNCQ120508	SXDZ48	C050A12S	WT20
231-54-009	FM90-160CN12.XDZ48	160	48	12	16	63	14	CNCQ120508	SXDZ48	C050A12S	WT20

Insert not included

Recommended cutting data:

Application	Finish cutting			Medium cutting			Rough cutting		
	Surface speed Vc(m/min)	Feed per tooth fz(mm)	Cutting depth ap(mm)	Surface speed Vc(m/min)	Feed per tooth fz(mm)	Cutting depth ap(mm)	Surface speed Vc(m/min)	Feed per tooth fz(mm)	Cutting depth ap(mm)
Steel	-	-	-	200-100	0.05-0.12	< α	120-60	0.15-0.2	< α
Stainless Steel	-	-	-	-	-	-	-	-	-
Cast iron	-	-	-	180-80	0.05-0.15	< α	150-80	0.15-0.2	< α
Non ferrous metal	-	-	-	< 2000	0.1-0.15	< α	< 2000	0.15-0.2	< α
High temperature alloy	-	-	-	-	-	-	-	-	-

SOLID CARBIDE INSERT CNCQ

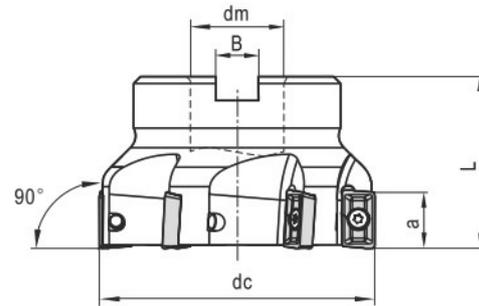
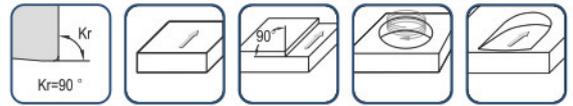


Order No.	Model	Application	Grade	Size (mm)			
				d	s	d1	r
230-54-101	CNCQ090508NF	Steel	EP2220	9.525	5.56	4.4	0.8
230-54-102	CNCQ120508NF	Steel	EP2220	12.7	5.56	5.5	0.8
230-54-103	CNCQ090508NF	Cast iron	EP3215	9.525	5.56	4.4	0.8
230-54-104	CNCQ120508NF	Cast iron	EP3215	12.7	5.56	5.5	0.8

90° INDEXABLE FACE MILLS FOR APKT INSERTS

Features:

- 90° major cutting angle.
- Radial and Axial run-out less than 0.02mm.
- Inserts to be hold by swiss SFS high strength screws.
- Made of quality alloy steel and hardness HRC45-HRC48.
- High precision and high metal removal rate.
- Suitable for light to medium square shoulder milling.



Order No.	Model	Size (mm)					No.of teeth	Insert	Screw	Torx wrench	Weight (Kg)
		dc	dm	a	B	L					
231-51-001	FM90-40AP16N	40	16	14	8.4	40	4	APKT1604	C040A09S	WT15	0.3
231-51-002	FM90-50AP16N	50	22	14	10.4	40	4	APKT1604	C040A09S	WT15	0.4
231-51-003	FM90-63AP16N	63	22	14	10.4	45	5	APKT1604	C040A09S	WT15	0.6
231-51-004	FM90-80AP16N	80	27	14	12.4	50	6	APKT1604	C040A09S	WT15	1.1
231-51-005	FM90-100AP16N	100	32	14	14.4	50	7	APKT1604	C040A09S	WT15	1.9
231-51-006	FM90-125AP16N	125	40	14	16.4	63	8	APKT1604	C040A09S	WT15	3.9
231-51-007	FM90-160AP16N	160	40	14	16.4	63	10	APKT1604	C040A09S	WT15	4.9

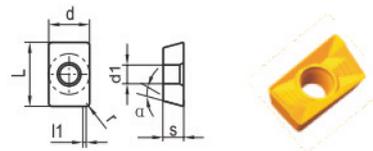
Insert not included

Recommended cutting data:

Application	Finish cutting			Medium cutting			Rough cutting		
	Surface speed Vc(m/min)	Feed per tooth fz(mm)	Cutting depth ap(mm)	Surface speed Vc(m/min)	Feed per tooth fz(mm)	Cutting depth ap(mm)	Surface speed Vc(m/min)	Feed per tooth fz(mm)	Cutting depth ap(mm)
Steel	300-100	0.05-0.10	0.1-2.0	250-120	0.1-0.25	2-8	160-100	0.15-0.30	8-15
Stainless Steel	230-120	0.05-0.10	0.1-2.0	120-60	0.1-0.25	2-8	100-60	0.15-0.30	4-12
Cast iron	300-110	0.05-0.10	0.1-2.0	250-110	0.1-0.25	2-8	140-100	0.15-0.30	4-15
Non ferrous metal	< 2000	0.05-0.10	0.1-2.0	< 2000	0.1-0.25	2-8	< 2000	0.15-0.30	4-15
High temperature alloy	-	-	-	20-60	0.06-0.20	2-4	-	-	-

SOLID CARBIDE INSERT APKT

Insert with highly positive geometry and helical cutting edges.

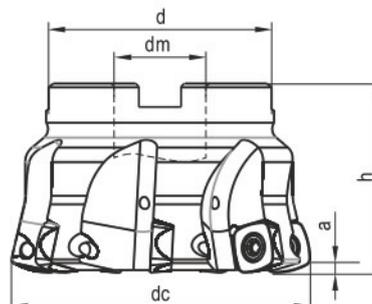


Order No.	Model	Application	Grade	Size (mm)						
				d	L	s	α	d1	l1	r
230-51-101	APKT1604 08-ZM	Steel,Stainless steel and Cast iron	EP1315	9.51	17.56	5.735	11°	4.4	1.395	0.8
230-51-102	APKT1604 08-ZM	Stainless steel	EP1215	9.51	17.56	5.735	11°	4.4	1.395	0.8
230-51-103	APKT1604 08-ZM	Steel and Cast iron	EP2202	9.51	17.56	5.735	11°	4.4	1.395	0.8

HIGH FEED INDEXABLE FACE MILLS FOR SDMT INSERTS

Features:

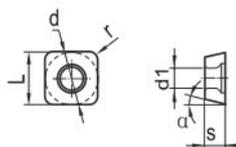
- Radial and Axial run-out less than 0.02mm
- Insert to be hold by swiss SFS high strength screws.
- Made of quality alloy steel and hardness HRC50-HRC52.
- Suitable for medium cutting of steel, stainless steel and cast iron at high feed rate.



Order No.	Size (mm)					No.of teeth	Insert	Screw	Torx wrench
	dc	h	d	dm	a				
231-67-005	32	40	38	16	1	3	SDMT09T307	C030A07S	WT15
231-67-010	40	40	38	16	1	4	SDMT09T307	C030A07S	WT15
231-67-015	50	40	43	22	1	5	SDMT09T307	C030A07S	WT15
231-67-020	63	40	48	22	1	6	SDMT09T307	C030A07S	WT15
231-67-030	40	40	38	16	2	3	SDMT120412	L60-M4x8.4	WT15
231-67-035	50	40	43	22	2	4	SDMT120412	L60-M4x8.4	WT15
231-67-040	63	40	48	22	2	5	SDMT120412	L60-M4x8.4	WT15
231-67-045	80	50	58	27	2	7	SDMT120412	L60-M4x8.4	WT15

Insert not included

SOLID CARBIDE INSERT SDMT



SM



NPM

Order No.	Model	Application	Grade	Size(mm)					
				d	L	s	α	d1	r
230-67-101	SDMT09T307-SM	Stainless steel	EP1215	9	9	3.5	16°	3.5	0.7
230-67-102	SDMT09T307-SM	Steel & Cast iron	EP2202	9	9	3.5	16°	3.5	0.7
230-67-103	SDMT09T307-SM	Universal	EP1315	9	9	3.5	16°	3.5	0.7
230-67-104	SDMT120412-NPM	Stainless steel	EP1215	12.7	12.7	4.76	15°	4.4	2
230-67-105	SDMT120412-NPM	Steel & Cast iron	EP2202	12.7	12.7	4.76	15°	4.4	2
230-67-106	SDMT120412-NPM	Universal	EP1315	12.7	12.7	4.76	15°	4.4	2