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FLASHHELI ECO LINE 68

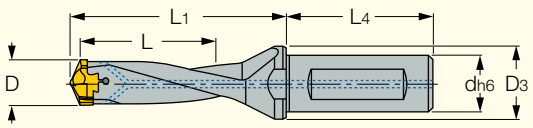
FLASHTOOLING ECO LINE 71

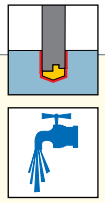
FLASHCHAM

ECO CHAMELEON LINE

FCM-3D

Indexable Head Drills with Coolant Holes and One Flat Shanks, Drilling Depth 3xD





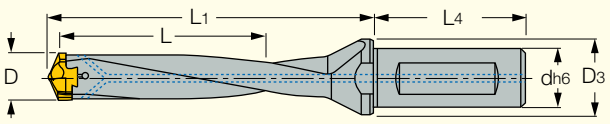
Designation	D min(1)	D max	L	d	D3	L1	L4	Po. Size	
FCM 100-030-16A-3D	10.00	10.40	30.0	16.00	20.00	44.0	48.0	10.0	K DCM-10
FCM 105-031-16A-3D	10.50	10.90	31.0	16.00	20.00	46.0	48.0	10.0	K DCM-10
FCM 110-033-16A-3D	11.00	11.40	33.0	16.00	20.00	48.1	48.0	11.0	K DCM-11
FCM 115-034-16A-3D	11.50	11.90	34.0	16.00	20.00	50.0	48.0	11.0	K DCM-11
FCM 120-036-16A-3D	12.00	12.40	36.0	16.00	20.00	52.2	48.0	12.0	K DCM-12
FCM 125-037-16A-3D	12.50	12.90	37.0	16.00	20.00	53.8	48.0	12.0	K DCM-12
FCM 130-039-16A-3D	13.00	13.40	39.0	16.00	20.00	56.5	48.0	13.0	K DCM-13
FCM 135-040-16A-3D	13.50	13.90	40.0	16.00	20.00	58.5	48.0	13.0	K DCM-13
FCM 140-042-16A-3D	14.00	14.40	42.0	16.00	20.00	61.2	48.0	14.0	K DCM-14
FCM 145-043-16A-3D	14.50	14.90	43.0	16.00	20.00	64.8	48.0	14.0	K DCM-14
FCM 150-045-20A-3D	15.00	15.90	45.0	20.00	25.00	65.7	50.0	15.0	K DCM-15
FCM 160-048-20A-3D	16.00	16.90	48.0	20.00	25.00	70.0	50.0	16.0	K DCM-16
FCM 170-051-20A-3D	17.00	17.90	51.0	20.00	25.00	73.5	50.0	17.0	K DCM-17
FCM 180-054-25A-3D	18.00	18.90	54.0	25.00	32.00	78.3	56.0	18.0	K DCM-18
FCM 190-057-25A-3D	19.00	19.90	57.0	25.00	32.00	82.3	56.0	19.0	K DCM-19

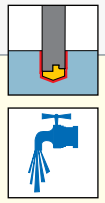
• Drill tolerance: k7 •

(1) Do not mount smaller drilling heads than specified range for drill body.

FCM-5D

Indexable Head Drills with Coolant Holes and One Flat Shanks, Drilling Depth 5xD





Designation	D min(1)	D max	L	d	D3	L1	L4	Po. Size	
FCM 100-050-16A-5D	10.00	10.40	50.0	16.00	20.00	64.0	48.0	10.0	K DCM-10
FCM 105-052-16A-5D	10.50	10.90	52.0	16.00	20.00	67.0	48.0	10.0	K DCM-10
FCM 110-055-16A-5D	11.00	11.40	55.0	16.00	20.00	70.1	48.0	11.0	K DCM-11
FCM 115-057-16A-5D	11.50	11.90	57.0	16.00	20.00	73.0	48.0	11.0	K DCM-11
FCM 120-060-16A-5D	12.00	12.40	60.0	16.00	20.00	76.2	48.0	12.0	K DCM-12
FCM 125-062-16A-5D	12.50	12.90	62.0	16.00	20.00	79.2	48.0	12.0	K DCM-12
FCM 130-065-16A-5D	13.00	13.40	65.0	16.00	20.00	82.5	48.0	13.0	K DCM-13
FCM 135-067-16A-5D	13.50	13.90	67.0	16.00	20.00	85.5	48.0	13.0	K DCM-13
FCM 140-070-16A-5D	14.00	14.40	70.0	16.00	20.00	89.2	48.0	14.0	K DCM-14
FCM 145-072-16A-5D	14.50	14.90	72.0	16.00	20.00	92.2	48.0	14.0	K DCM-14
FCM 150-075-20A-5D	15.00	15.90	75.0	20.00	25.00	95.7	50.0	15.0	K DCM-15
FCM 160-080-20A-5D	16.00	16.90	80.0	20.00	25.00	102.0	50.0	16.0	K DCM-16
FCM 170-085-20A-5D	17.00	17.90	85.0	20.00	25.00	107.5	50.0	17.0	K DCM-17
FCM 180-090-25A-5D	18.00	18.90	90.0	25.00	32.00	114.3	56.0	18.0	K DCM-18
FCM 190-095-25A-5D	19.00	19.90	95.0	25.00	32.00	120.3	56.0	19.0	K DCM-19

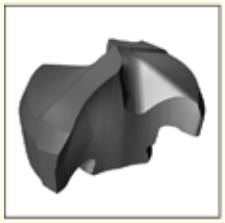
• Drill tolerance: k7

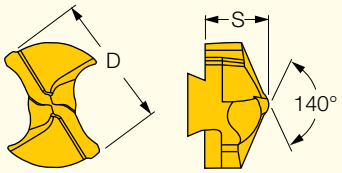
(1) Do not mount smaller drilling heads than specified range for drill body.

For inserts, see pages: FKI () • FPI ().

FPI

Exchangeable General Use Drilling Heads

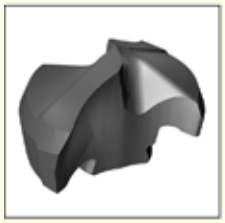


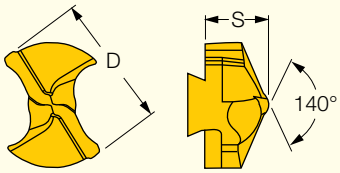


Designation	Dimensions D	S	Po. Size	IC908
FPI 100	10.00	5.30	10.0	•
FPI 101	10.10	5.30	10.0	•
FPI 102	10.20	5.30	10.0	•
FPI 103	10.30	5.30	10.0	•
FPI 104	10.40	5.30	10.0	•
FPI 105	10.50	5.30	10.0	•
FPI 106	10.60	5.30	10.0	•
FPI 107	10.70	5.30	10.0	•
FPI 108	10.80	5.30	10.0	•
FPI 109	10.90	5.30	10.0	•
FPI 110	11.00	5.50	11.0	•
FPI 111	11.10	5.50	11.0	•
FPI 112	11.20	5.50	11.0	•
FPI 113	11.30	5.50	11.0	•
FPI 114	11.40	5.50	11.0	•
FPI 115	11.50	5.50	11.0	•
FPI 116	11.60	5.50	11.0	•
FPI 117	11.70	5.50	11.0	•
FPI 118	11.80	5.50	11.0	•
FPI 119	11.90	5.50	11.0	•
FPI 120	12.00	5.80	12.0	•
FPI 121	12.10	5.80	12.0	•
FPI 122	12.20	5.80	12.0	•
FPI 123	12.30	5.80	12.0	•
FPI 124	12.40	5.80	12.0	•
FPI 125	12.50	5.80	12.0	•
FPI 126	12.60	5.80	12.0	•
FPI 127	12.70	5.80	12.0	•
FPI 128	12.80	5.80	12.0	•
FPI 129	12.90	5.80	12.0	•
FPI 130	13.00	6.00	13.0	•
FPI 131	13.10	6.00	13.0	•
FPI 132	13.20	6.00	13.0	•
FPI 133	13.30	6.00	13.0	•
FPI 134	13.40	6.00	13.0	•
FPI 135	13.50	6.00	13.0	•
FPI 136	13.60	6.00	13.0	•
FPI 137	13.70	6.00	13.0	•
FPI 138	13.80	6.00	13.0	•
FPI 139	13.90	6.00	13.0	•
FPI 140	14.00	6.80	14.0	•
FPI 141	14.10	6.80	14.0	•
FPI 142	14.20	6.80	14.0	•
FPI 143	14.30	6.80	14.0	•
FPI 144	14.40	6.80	14.0	•
FPI 145	14.50	6.80	14.0	•
FPI 146	14.60	6.80	14.0	•
FPI 147	14.70	6.80	14.0	•
FPI 148	14.80	6.80	14.0	•
FPI 149	14.90	6.80	14.0	•
FPI 150	15.00	7.40	15.0	•
FPI 151	15.10	7.40	15.0	•
FPI 152	15.20	7.40	15.0	•

FPI (continued)

Exchangeable General Use Drilling Heads

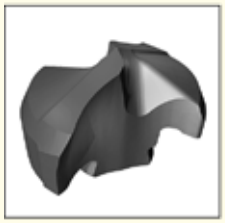


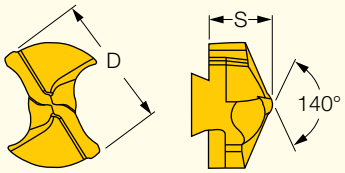


Designation	Dimensions D	S	Po. Size	IC908
FPI 153	15.30	7.40	15.0	•
FPI 154	15.40	7.40	15.0	•
FPI 155	15.50	7.40	15.0	•
FPI 156	15.60	7.40	15.0	•
FPI 157	15.70	7.40	15.0	•
FPI 158	15.80	7.40	15.0	•
FPI 159	15.90	7.40	15.0	•
FPI 160	16.00	7.90	16.0	•
FPI 161	16.10	7.90	16.0	•
FPI 162	16.20	7.90	16.0	•
FPI 163	16.30	7.90	16.0	•
FPI 164	16.40	7.90	16.0	•
FPI 165	16.50	7.90	16.0	•
FPI 166	16.60	7.90	16.0	•
FPI 167	16.70	7.90	16.0	•
FPI 168	16.80	7.90	16.0	•
FPI 169	16.90	7.90	16.0	•
FPI 170	17.00	7.40	17.0	•
FPI 171	17.10	7.40	17.0	•
FPI 172	17.20	7.40	17.0	•
FPI 173	17.30	7.40	17.0	•
FPI 174	17.40	7.40	17.0	•
FPI 175	17.50	7.40	17.0	•
FPI 176	17.60	7.40	17.0	•
FPI 177	17.70	7.40	17.0	•
FPI 178	17.80	7.40	17.0	•
FPI 179	17.90	7.40	17.0	•
FPI 180	18.00	8.30	18.0	•
FPI 181	18.10	8.30	18.0	•
FPI 182	18.20	8.30	18.0	•
FPI 183	18.30	8.30	18.0	•
FPI 184	18.40	8.30	18.0	•
FPI 185	18.50	8.30	18.0	•
FPI 186	18.60	8.30	18.0	•
FPI 187	18.70	8.30	18.0	•
FPI 188	18.80	8.30	18.0	•
FPI 189	18.90	8.30	18.0	•
FPI 190	19.00	8.50	19.0	•
FPI 1905	19.05	8.50	19.0	•
FPI 191	19.10	8.50	19.0	•
FPI 192	19.20	8.50	19.0	•
FPI 193	19.30	8.50	19.0	•
FPI 194	19.40	8.50	19.0	•
FPI 195	19.50	8.50	19.0	•
FPI 196	19.60	8.50	19.0	•
FPI 197	19.70	8.50	19.0	•
FPI 198	19.80	8.50	19.0	•
FPI 199	19.90	8.50	19.0	•

FKI

Exchangeable Drilling Heads for Cast Iron

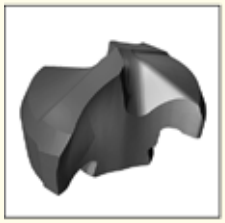


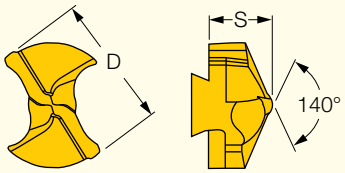


Designation	Dimensions D	S	Po. Size	IC908
FKI 100	10.00	5.30	10.0	•
FKI 102	10.20	5.30	10.0	•
FKI 103	10.30	5.30	10.0	•
FKI 104	10.40	5.30	10.0	•
FKI 105	10.50	5.30	10.0	•
FKI 106	10.60	5.30	10.0	•
FKI 107	10.70	5.30	10.0	•
FKI 108	10.80	5.30	10.0	•
FKI 110	11.00	5.50	11.0	•
FKI 111	11.10	5.50	11.0	•
FKI 112	11.20	5.50	11.0	•
FKI 113	11.30	5.50	11.0	•
FKI 115	11.50	5.50	11.0	•
FKI 116	11.60	5.50	11.0	•
FKI 118	11.80	5.50	11.0	•
FKI 120	12.00	5.80	12.0	•
FKI 121	12.10	5.80	12.0	•
FKI 122	12.20	5.80	12.0	•
FKI 123	12.30	5.80	12.0	•
FKI 124	12.40	5.80	12.0	•
FKI 125	12.50	5.80	12.0	•
FKI 126	12.60	5.80	12.0	•
FKI 127	12.70	5.80	12.0	•
FKI 128	12.80	5.80	12.0	•
FKI 129	12.90	5.80	12.0	•
FKI 130	13.00	6.00	13.0	•
FKI 131	13.10	6.00	13.0	•
FKI 132	13.20	6.00	13.0	•
FKI 133	13.30	6.00	13.0	•
FKI 135	13.50	6.00	13.0	•
FKI 136	13.60	6.00	13.0	•
FKI 137	13.70	6.00	13.0	•
FKI 138	13.80	6.00	13.0	•
FKI 139	13.90	6.00	13.0	•
FKI 140	14.00	6.80	14.0	•
FKI 141	14.10	6.80	14.0	•
FKI 142	14.20	6.80	14.0	•
FKI 143	14.30	6.80	14.0	•
FKI 144	14.40	6.80	14.0	•
FKI 145	14.50	6.80	14.0	•
FKI 146	14.60	6.80	14.0	•
FKI 147	14.70	6.80	14.0	•
FKI 150	15.00	7.40	15.0	•
FKI 151	15.10	7.40	15.0	•
FKI 152	15.20	7.40	15.0	•
FKI 153	15.30	7.40	15.0	•
FKI 154	15.40	7.40	15.0	•
FKI 155	15.50	7.40	15.0	•
FKI 156	15.60	7.40	15.0	•
FKI 157	15.70	7.40	15.0	•

FKI

Exchangeable Drilling Heads for Cast Iron





Designation	Dimensions D	S	Po. Size	IC908
FKI 158	15.80	7.90	15.0	•
FKI 159	15.90	7.90	15.0	•
FKI 160	16.00	7.90	16.0	•
FKI 161	16.10	7.90	16.0	•
FKI 162	16.20	7.90	16.0	•
FKI 163	16.30	7.90	16.0	•
FKI 164	16.40	7.90	16.0	•
FKI 165	16.50	7.90	16.0	•
FKI 166	16.60	7.90	16.0	•
FKI 167	16.70	7.90	16.0	•
FKI 168	16.80	7.90	16.0	•
FKI 169	16.90	7.90	16.0	•
FKI 170	17.00	7.40	17.0	•
FKI 171	17.10	7.40	17.0	•
FKI 172	17.20	7.40	17.0	•
FKI 174	17.40	7.40	17.0	•
FKI 175	17.50	7.40	17.0	•
FKI 176	17.60	7.40	17.0	•
FKI 177	17.70	7.40	17.0	•
FKI 178	17.80	7.40	17.0	•
FKI 180	18.00	8.30	18.0	•
FKI 181	18.10	8.30	18.0	•
FKI 182	18.20	8.30	18.0	•
FKI 185	18.50	8.30	18.0	•
FKI 186	18.60	8.30	18.0	•
FKI 187	18.70	8.30	18.0	•
FKI 188	18.80	8.30	18.0	•
FKI 190	19.00	8.50	19.0	•
FKI 1905	19.05	8.50	19.0	•
FKI 191	19.10	8.50	19.0	•
FKI 194	19.40	8.50	19.0	•
FKI 195	19.50	8.50	19.0	•
FKI 197	19.70	8.50	19.0	•
FKI 198	19.80	8.50	19.0	•

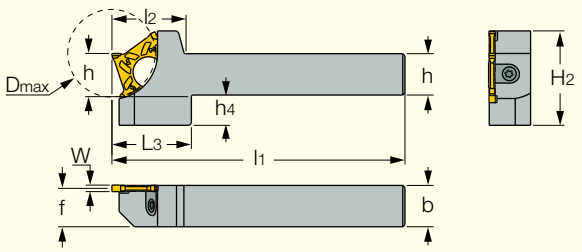
FLASHPENTA

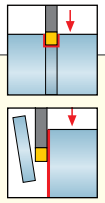
ECO PARTING AND GROOVING LINE

PENTA IQ GRIP
PARTING LINE

PCHR/L-D-IQ

Grooving and Parting Tools Carrying Inserts with 5 Cutting Edges





Left-hand shown

Designation	h	b	W min	W max	f	D max	l1	l2	L3	h4	H2
PCHR/L 12-D22-2-IQ	12.0	12.0	2.00	2.40	11.40	22.0	100.00	26.9	25.70	8.0	25.5
PCHR/L 16-D22-2-IQ	16.0	16.0	2.00	2.40	15.40	22.0	120.00	26.9	23.20	4.0	25.5
PCHR/L 20-D22-2-IQ	20.0	20.0	2.00	2.40	19.40	22.0	120.00	26.9	-	-	25.5
PCHR/L 12-D22-3-IQ	12.0	12.0	3.00	3.20	10.70	22.0	120.00	19.7	20.00	11.0	25.5
PCHR/L 16-D22-3-IQ	16.0	16.0	3.00	3.20	14.70	22.0	120.00	19.7	20.00	7.0	25.5
PCHR/L 20-D22-3-IQ	20.0	20.0	3.00	3.20	18.70	22.0	120.00	19.7	-	-	25.5
PCHR/L 12-D32-2-IQ	12.0	12.0	2.00	2.40	11.50	32.0	100.00	28.4	29.50	14.0	33.6
PCHR/L 16-D32-2-IQ	16.0	16.0	2.00	2.40	15.50	32.0	120.00	28.4	29.50	10.0	33.6
PCHR/L 20-D32-2-IQ	20.0	20.0	2.00	2.40	19.50	32.0	120.00	28.4	29.50	6.0	33.6
PCHR/L 25-D32-2-IQ	25.0	25.0	2.00	2.40	24.50	32.0	120.00	28.4	-	-	33.6
PCHR/L 12-D32-3-IQ	12.0	12.0	3.00	3.20	10.70	32.0	135.00	26.0	32.00	16.0	32.6
PCHR/L 16-D32-3-IQ	16.0	16.0	3.00	3.20	14.70	32.0	135.00	26.0	32.00	12.0	32.6
PCHR/L 20-D32-3-IQ	20.0	20.0	3.00	3.20	18.70	32.0	135.00	26.0	32.00	8.0	32.6
PCHR/L 25-D32-3-IQ	25.0	25.0	3.00	3.20	23.70	32.0	135.00	26.0	-	-	32.6
PCHR/L 16-D40-3-IQ	16.0	16.0	3.00	3.20	14.70	40.0	135.00	33.3	36.80	17.0	43.5
PCHR/L 20-D40-3-IQ	20.0	20.0	3.00	3.20	18.70	40.0	135.00	33.3	35.60	13.0	43.5
PCHR/L 25-D40-3-IQ	25.0	25.0	3.00	3.20	23.70	40.0	135.00	33.3	33.60	8.0	43.5
PCHR/L 32-D40-3-IQ	32.0	32.0	3.00	3.20	30.70	40.0	135.00	33.3	-	-	43.5

For inserts, see pages: PENTA D-N-C () • PENTA D-N-J () • PENTA D-N-PB () • PENTA D-R/L-C () • PENTA D-R/L-J () • PENTA D-R/L-PB () • PMN D-C () • PMN D-J () • PMN D-PB ()

Tmax as a Function of Dmax for PENTA D22

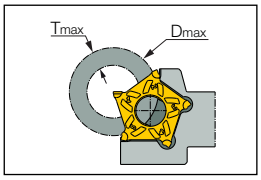
Tmax	T≤1.2	T≤2.0	T≤3.0	T≤4.0	T≤5.0	T≤7.0	T≤9.0	T≤11.0
Dmax	N.L(1)	600	130	60	40	30	25	22

Tmax as a Function of Dmax for PENTA D32

Tmax	T≤1.2	T≤2	T≤3.0	T≤4.0	T≤5.0	T≤6.0	T≤7.0	T≤8.0	T≤9.0	T≤16.0
Dmax	N.L(1)	N.L(1)	250	130	80	60	50	45	40	32

Tmax as a Function of Dmax for PENTA D40

Tmax	T≤1.2	T≤2	T≤3.0	T≤4.0	T≤5.0	T≤6.0	T≤7.0	T≤8.0	T≤9.0	T≤10.0	T≤11.0	T≤12.0	T≤13.0	T≤16.0	T≤20.0
Dmax	N.L(1)	N.L(1)	N.L(1)	350	200	140	105	85	75	65	60	55	50	45	40



(1) N.L = No Limit

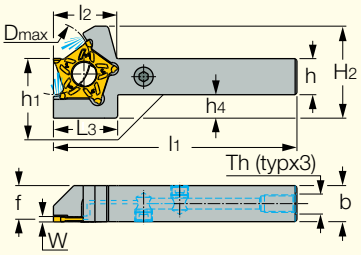
Spare Parts

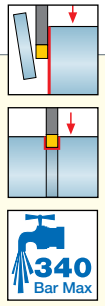
Designation	Right-Left Screw	Clamp	Torx Blade	Handle
PCHL 12-D22-2-IQ	SR M6-R-L	LEVER PD22-2	BLD T15/S7	SW6-SD
PCHR 12-D22-2-IQ	SR M6-R-L	LEVER PD22-2	BLD T15/S7	SW6-SD
PCHR/L 16-D22-2-IQ	SR M6-R-L	LEVER PD22-2	BLD T15/S7	SW6-SD
PCHR/L 20-D22-2-IQ	SR M6-R-L	LEVER PD22-2	BLD T15/S7	SW6-SD
PCHR/L 12-D22-3-IQ	SR M6-R-L	LEVER PD22-3	BLD T15/S7	SW6-SD
PCHR/L 16-D22-3-IQ	SR M6-R-L	LEVER PD22-3	BLD T15/S7	SW6-SD
PCHR/L 20-D22-3-IQ	SR M6-R-L	LEVER PD22-2	BLD T15/S7	SW6-SD
PCHR/L 12-D32-2-IQ	SR M6-R-L	LEVER PD32-2	BLD T15/S7	SW6-SD
PCHR/L 16-D32-2-IQ	SR M6-R-L	LEVER PD32-2	BLD T15/S7	SW6-SD
PCHR/L 20-D32-2-IQ	SR M6-R-L	LEVER PD32-2	BLD T15/S7	SW6-SD
PCHR/L 25-D32-2-IQ	SR M6-R-L	LEVER PD32-2	BLD T15/S7	SW6-SD
PCHL 12-D32-3-IQ	SR M6-R-L	LEVER PD32-3	BLD T15/S7	SW6-SD
PCHR 12-D32-3-IQ	SR M6-R-L	LEVER PD32-2	BLD T15/S7	SW6-SD
PCHR/L 16-D32-3-IQ	SR M6-R-L	LEVER PD32-3	BLD T15/S7	SW6-SD
PCHR/L 20-D32-3-IQ	SR M6-R-L	LEVER PD32-3	BLD T15/S7	SW6-SD
PCHR/L 25-D32-3-IQ	SR M6-R-L	LEVER PD32-3	BLD T15/S7	SW6-SD
PCHR/L 16-D40-3-IQ	SR M7-R-L	LEVER PD40	BLD T20/S7	SW6-SD
PCHR/L 20-D40-3-IQ	SR M7-R-L	LEVER PD40	BLD T20/S7	SW6-SD
PCHR/L 25-D40-3-IQ	SR M7-R-L	LEVER PD40	BLD T20/S7	SW6-SD
PCHR/L 32-D40-3-IQ	SR M7-R-L	LEVER PD40	BLD T20/S7	SW6-SD

* Optional, should be ordered separately

PCHR/L-D-JHP

Grooving and Parting Tools Carrying Inserts with 5 Cutting Edges with Channels for High Pressure Coolant





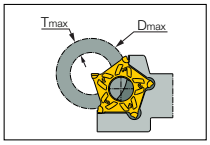
Designation	h	b	W min	W max	f	D max	l1	l2	L3	h4	H2	Th
PCHR/L 12-D22-2-JHP	12.0	12.0	2.00	2.40	11.0	22.0	101.50	29.0	29.50	8.0	32.0	UNF 5/16-24
PCHR/L 16-D22-2-JHP	16.0	16.0	2.00	2.40	15.0	22.0	121.50	29.0	29.50	4.0	32.0	UNF 5/16-24
PCHR/L 20-D22-2-JHP	20.0	20.0	2.00	2.40	19.0	22.0	121.50	29.0	29.50	-	32.0	G 1/8-28
PCHR/L 12-D32-2-JHP	12.0	12.0	2.00	2.40	11.2	32.0	101.00	30.0	30.50	-	41.0	UNF 5/16-24
PCHR/L 16-D32-2-JHP	16.0	16.0	2.00	2.40	15.0	32.0	101.00	30.0	30.50	10.5	41.0	UNF 5/16-24
PCHR/L 20-D32-2-JHP	20.0	20.0	2.00	2.40	19.0	32.0	121.00	30.0	30.50	6.5	41.0	G 1/8-28
PCHR/L 25-D32-2-JHP	25.0	25.0	2.00	2.40	24.0	32.0	121.00	30.0	30.50	1.5	41.0	G 1/8-28
PCHR/L 16-D40-3-JHP	16.0	16.0	3.00	3.20	14.6	40.0	135.00	36.3	36.80	17.0	51.0	UNF 5/16-24
PCHR/L 20-D40-3-JHP	20.0	20.0	3.00	3.20	18.6	40.0	135.00	35.1	35.60	13.0	51.0	G 1/8-28
PCHR/L 25-D40-3-JHP	25.0	25.0	3.00	3.20	23.6	40.0	135.00	33.1	33.60	8.0	51.0	G 1/8-28

* (Optional, should be ordered separately)

PCHR/L D22-2...-JHP Dmax for Partting Off 22/T11										
Tmax	T≤1.0	T≤2.0	T≤3.0	T≤4.0	T≤5.0	T≤6.0	T≤7.0	T≤8.0	T≤9.0	T≤10.0
Dmax	89	64	48	40	34	31	28	27	24	21

PCHR/L D32-2...-JHP Dmax for Partting Off 32/T16										
Tmax	T≤1.0	T≤2.0	T≤3.0	T≤4.0	T≤5.0	T≤6.0	T≤7.0	T≤8.0	T≤9.0	T≤10.0
Dmax	150	125	100	78	65	57	51	46	43	40
Tmax	T≤11.0	T≤12.0	T≤13.0	T≤14.0	T≤15.0					
Dmax	39	37	35	34	33					

PCHR/L D40-3...-JHP Dmax for Partting Off 40/T20										
Tmax	T≤1.0	T≤2.0	T≤3.0	T≤4.0	T≤5.0	T≤6.0	T≤7.0	T≤8.0	T≤9.0	T≤10.0
Dmax	400	300	200	145	114	95	82	73	66	61
Tmax	T≤11.0	T≤12.0	T≤13.0	T≤14.0	T≤15.0	T≤16.0	T≤17.0	T≤18.0	T≤19.0	
Dmax	57	54	51	49	47	46	45	44	42	



Flow Rate vs. Pressure

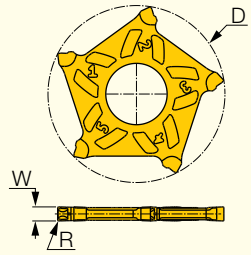
Designation	70 bar Flow Rate (liters/min)	100 bar Flow Rate (liters/min)	140 bar Flow Rate (liters/min)
PCHR/L...-2JHP	2-4	4-6	6-8
PCHR/L...-3JHP	7-9	9-11	11-13

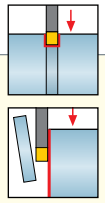
Spare Parts

Designation	Right-Left Screw	Clamp	Torx Blade	Handle	Key	Plug	Plug 1
PCHR/L 12-D32-2-JHP	SR M6-R-L	LEVER PD32-2	BLD T15/S7	SW6-SD	HW 5/32"		SR 5/16UNF TL360
PCHR/L 16-D32-2-JHP	SR M6-R-L	LEVER PD32-2	BLD T15/S7	SW6-SD	HW 5/32"		SR 5/16UNF TL360
PCHR/L 20-D32-2-JHP	SR M6-R-L	LEVER PD32-2	BLD T15/S7	SW6-SD	HW 5.0	PLG 1/8BSP TL360	SR M4X6 DIN913 TL180
PCHR/L 25-D32-2-JHP	SR M6-R-L	LEVER PD32-2	BLD T15/S7	SW6-SD	HW 5.0	PLG 1/8BSP TL360	SR M4X6 DIN913 TL180
PCHR/L 16-D40-3-JHP	SR M7-R-L	LEVER PD40	BLD T20/S7	SW6-SD	HW 5/32"		SR 5/16UNF TL360
PCHR/L 20-D40-3-JHP	SR M7-R-L	LEVER PD40	BLD T20/S7	SW6-SD	HW 5.0	PLG 1/8BSP TL360	
PCHR/L 25-D40-3-JHP	SR M7-R-L	LEVER PD40	BLD T20/S7	SW6-SD	HW 5.0	PLG 1/8BSP TL360	

PMN D-C

Utility Inserts with 5 Cutting Edges for Parting and Grooving of Hard Materials, Tough and General Applications



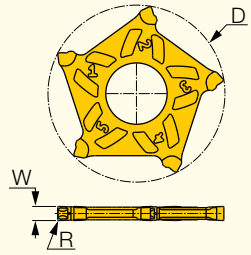


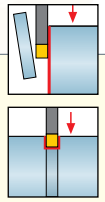
Right-hand shown

Designation	Dimensions W±0.03	R	D	IC908	Recommended Machining Data f groove (mm/rev)
PMN D32-2C02	2.00	0.20	32.00	•	0.04-0.14
PMN D32-2C-1	2.00	1.00	32.00	•	0.04-0.16
PMN D32-3C02	3.00	0.20	32.00	•	0.06-0.22
PMN D32-3C-1.5	3.00	1.50	32.00	•	0.06-0.24
PMN D40-3C02	3.00	0.20	40.00	•	0.06-0.22
PMN D40-3C-1.5	3.00	1.50	40.00	•	0.06-0.24

PMN D-PB

Utility Parting and Grooving Pentagonal Insert, for Parting Bearing Steel and Other Ductile Materials

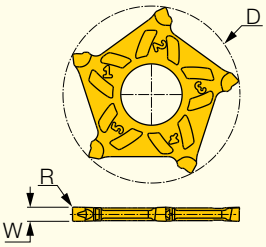


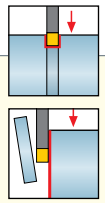


Designation	Dimensions W±0.03	R	D	IC908	Recommended Machining Data f groove (mm/rev)
PMN D40-3PB02	3.00	0.20	40.00	•	0.03-0.10
PMN D40-3PB-1.5	3.00	1.50	40.00	•	0.05-0.15

PMN D-J

Utility Parting and Grooving Insert with 5 Cutting Edges, for Soft Materials and Parting of Tubes





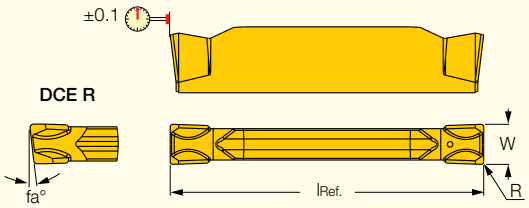
Designation	Dimensions W±0.03	R	D	IC908	Recommended Machining Data f groove (mm/rev)
PMN D22-2J02	2.00	0.20	22.00	•	0.04-0.12
PMN D22-2J-1	2.00	1.00	22.00	•	0.04-0.15
PMN D22-3J02	3.00	0.20	22.00	•	0.04-0.15
PMN D22-3J-1.5	3.00	1.50	22.00	•	0.04-0.18

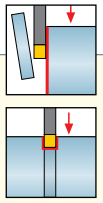
FLASHCUT

ECO PARTING LINE

DCE N-C

Double-Sided Parting Insert, for Parting and Grooving of Bars, Hard Materials and Tough Applications

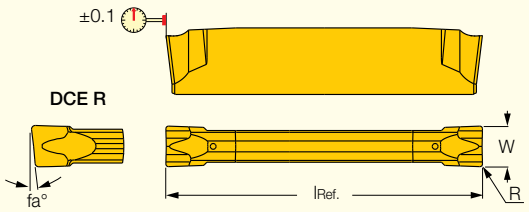


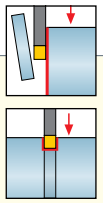


Designation	Dimensions W±0.04	R	l Ref.	Tmax-r	fa°	Tough ↔ Hard IC1028	IC5400	IC1008	Recommended Machining Data f groove (mm/rev)
DCE N2002C	2.00	0.20	23.80	21.00	0.0	•		•	0.05-0.16
DCE N3002C	3.00	0.20	23.50	21.00	0.0	•		•	0.10-0.25
DCE R/L2002C-6D	2.00	0.20	23.80	21.00	6.0	•	•	•	0.04-0.12
DCE R/L3002C-6D	3.00	0.20	23.50	21.00	6.0	•	•	•	0.08-0.18

DCE N-J

Double-Sided Parting and Grooving Insert for Soft Materials, Parting of Tubes, Small Diameters and Thin-Walled Parts

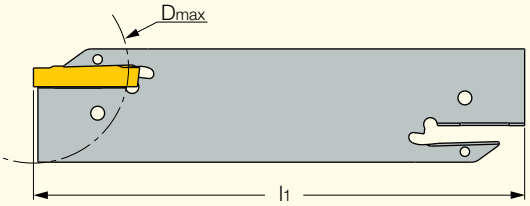


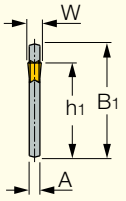


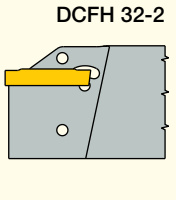
Designation	Dimensions W±0.04	R	Tmax-r	fa°	l Ref.	Tough ↔ Hard IC1028	IC5400	IC1008	Recommended Machining Data f groove (mm/rev)
DCE N2002J	2.00	0.20	21.00	0.0	23.80	•		•	0.04-0.12
DCE N3002J	3.00	0.20	21.00	0.0	23.40	•		•	0.04-0.14
DCE R/L2002J-6D	2.00	0.20	21.00	6.0	23.50	•	•	•	0.03-0.10
DCE R/L3002J-6D	3.00	0.20	21.00	6.0	23.50	•	•	•	0.04-0.10

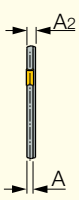
DCFH

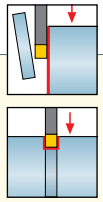
Parting and Grooving Blades









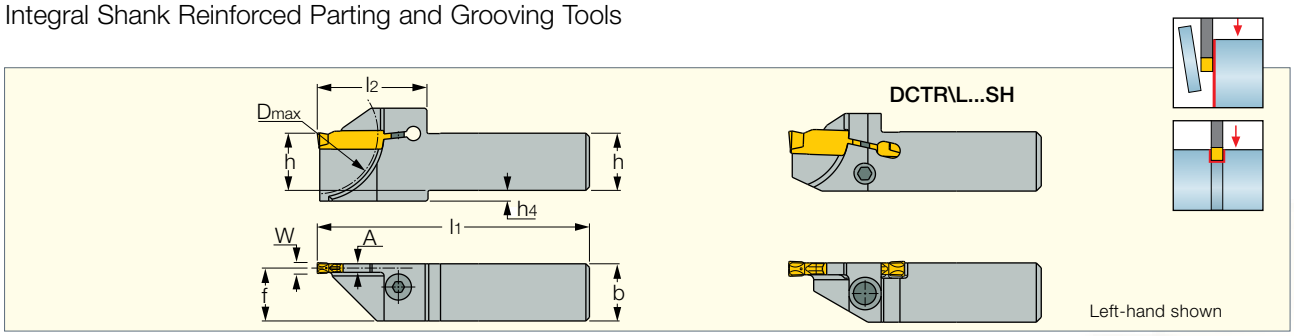


Designation	B1	W	A	A2	l1	h1	D max	
DCFH 26-2	26.0	2.00	1.70	-	110.00	21.4	42.0	EDG 23B*
DCFH 26-3	26.0	3.00	2.40	-	110.00	21.4	42.0	EDG 23B*
DCFH 32-2	32.0	2.00	1.70	2.4	150.00	24.8	42.0	EDG 33A*
DCFH 32-3	32.0	3.00	2.40	-	150.00	24.8	42.0	EDG 33A*

* (Optional, should be ordered separately)

SR/L-B-D

Integral Shank Reinforced Parting and Grooving Tools

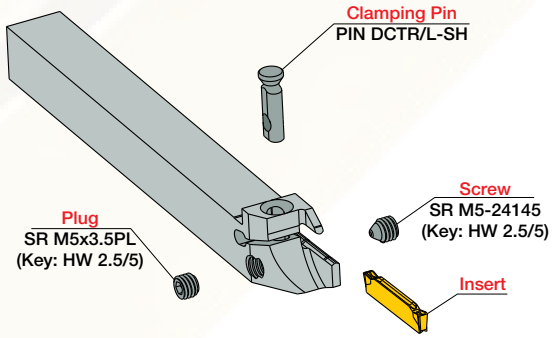


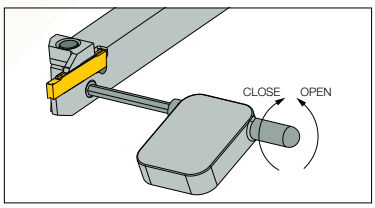
Designation	W	h	b	f	A	l_1	l_2	D_{max}	h_4				
DCTR/L 12B-2D24SH	2.00	12.0	12.0	11.2	1.70	120.00	19.0	24.0	-	SR M5-24145	HW 2.5/5	PIN DCTR/L-SH	1 SR M5X3.5PL
DCTR/L 16B-2D35	2.00	16.0	16.0	15.2	1.70	140.00	31.0	35.0	3.0	SR M4X12DIN912	HW 3.0		
DCTR/L 16B-3D35	3.00	16.0	16.0	14.8	2.40	140.00	31.0	35.0	3.0	SR M4X12DIN912	HW 3.0		
DCTL 20B-2D35	2.00	20.0	20.0	19.2	1.70	140.00	31.0	35.0	-	SR M4X12DIN912	HW 3.0		
DCTR/L 20B-2T21	2.00	20.0	20.0	19.2	1.70	125.00	35.5	42.0	5.0	SR M4X12DIN912	HW 3.0		
DCTR/L 20B-3D42	3.00	20.0	20.0	18.8	2.40	140.00	35.5	42.0	-	SR M4X12DIN912	HW 3.0		
DCTR/L 20B-3T21	3.00	20.0	20.0	18.8	2.40	125.00	35.5	42.0	5.0	SR M4X12DIN912	HW 3.0		
DCTR/L 25B-2T21	2.00	25.0	25.0	24.2	1.70	150.00	35.5	42.0	-	SR M4X12DIN912	HW 3.0		
DCTR/L 25B-3D42	3.00	25.0	25.0	23.8	2.40	140.00	35.5	42.0	-	SR M4X12DIN912	HW 3.0		
DCTR/L 25B-3T21	3.00	25.0	25.0	23.8	2.40	150.00	35.5	42.0	-	SR M4X12DIN912	HW 3.0		

Depth Capacity as a Function of Workpiece Diameter

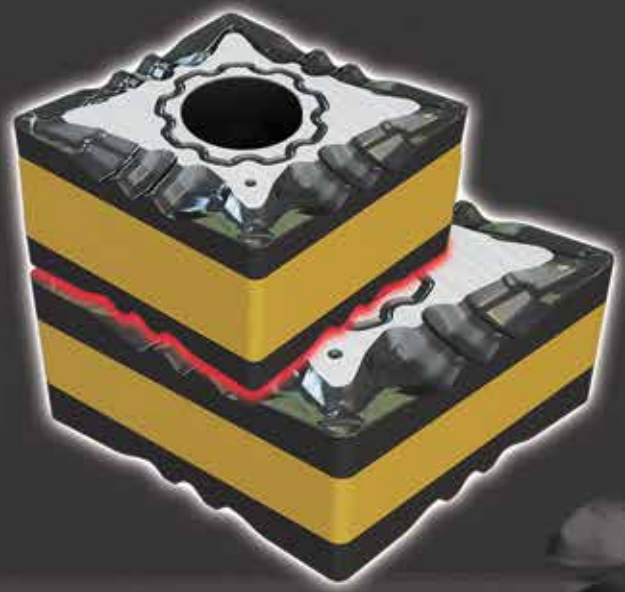
Tmax	D_{max} DCTR/L...D24-SH	D_{max} DCTR/L...D35	D_{max} DCTR/L...D42
4	No limit	No limit	
5	130	200	
6	60	120	
7	40	90	
8	32	70	
9	28	60	
10	25	53	
11	24	48	No limit
12	24	44	700
13		42	220
14		40	130
15		38	90
16		37	75
17		36	65
17.5		35	57
18			55
19			50
20			45
21			42

DCTR 12B-D24SH



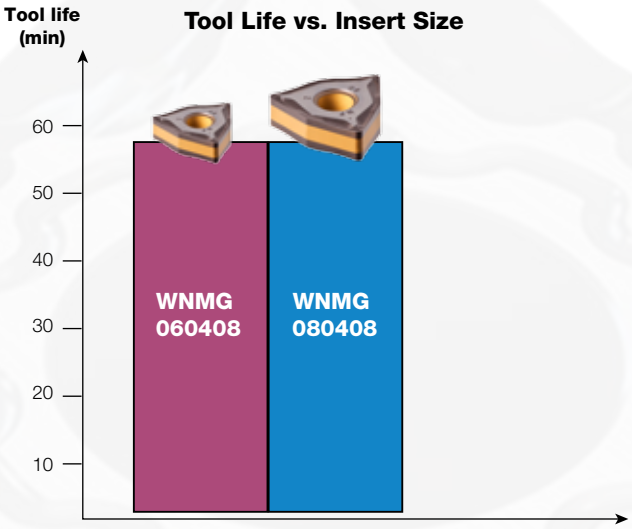


FLASHTURN
ECO LINE

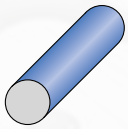


The 3/8" inscribed circle FLASHTURN inserts can cover about 75% of turning applications, as the most popular D.O.C. range is between 1 to 3 mm.

Therefore, small sized inserts can handle this machining range, reducing costs, when compared to the 1/2" inscribed circle larger inserts being widely used in such applications.

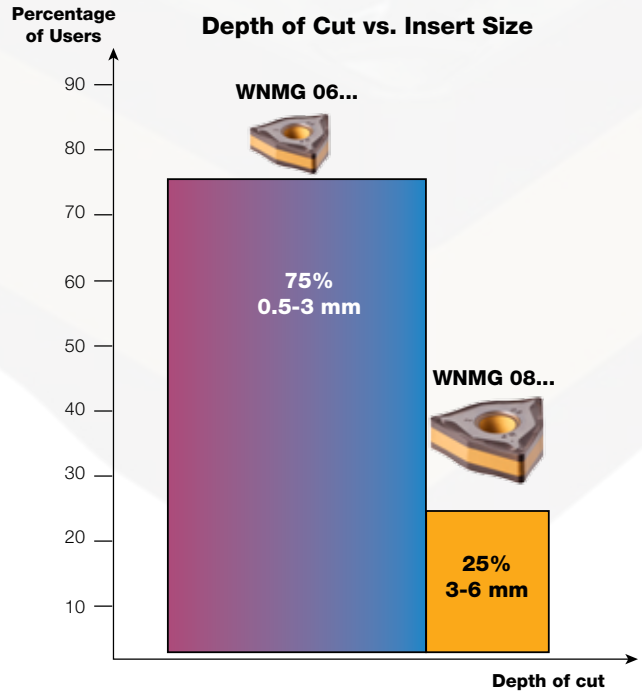


Material: SAE4340
Coolant: emulsion



Cutting conditions:
Vc=180 m/min
f=0.35 mm/rev
a_p=3 mm

When 3 to 6 mm D.O.C. is required, the 1/2" inscribed circle insert size should be used.



Small Size Cost Saving Inserts

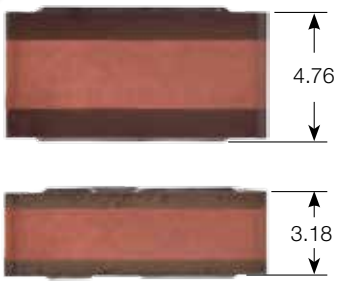
In many turning applications, people tend to use larger inserts than are actually required for the machining parameters being applied. To fill the niche, ISCAR is introducing a wide range of ISOTURN small sized inserts, which provide an **economical advantage per cutting edge.**

The new inserts are available in a wide range of geometries, corner radii, **new chipformers** and the most advanced **SUMO TEC** carbide grades.

The available geometries are **WNMG 0604.., WNMG 06T3.., WNMX 0606.., CNMG 0904.., CNMX 0906.., SNMG 0904.., DNMG 1104.., TNMG 1604..** and **TNMX 1606...** These inserts are generally thicker than the standard inserts of the same sizes, thus providing higher durability. They can run at feed rates similar to the larger inserts.

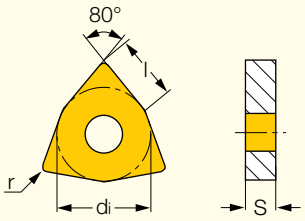
ISCAR is adding the small sized **HELITURN LD** inserts in WNMX, CNMX and TNMX geometries. These inserts, like their larger counterparts, have high positive radial helical cutting edges and positive rake angles, which is a combination that substantially reduces cutting forces and thus enables machining at higher cutting loads.

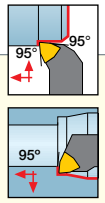
As the ISO turning applications are used extensively in the metal cutting industry, the new inserts and tools can be used on applications where large inserts are unnecessarily used instead of using smaller, more economical inserts which can do the same job successfully.
This recommendation excludes heavy interrupted applications.



WNMG-F3P

Double-Sided Trigon Inserts for Semi-Finishing and Finishing Applications

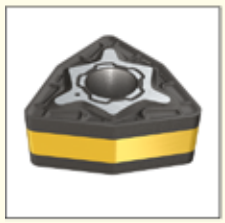


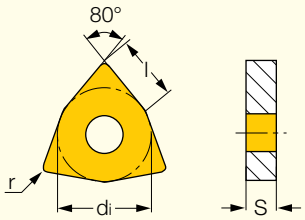


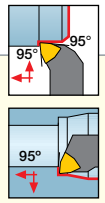
Designation	Dimensions l	di	S	r	Tough ↔ Hard IC830	IC8250	IC8150	IC20N	IC520N	IC807	Recommended Machining Data a_p (mm)	f (mm/rev)
WNMG 060404-F3P	6.52	9.52	4.76	0.40	●	●	●	●	●	●	0.50-2.50	0.07-0.25
WNMG 060408-F3P	6.52	9.52	4.76	0.80	●	●	●	●	●	●	0.90-3.00	0.08-0.25
WNMG 060412-F3P	6.52	9.52	4.76	1.20	●	●	●			●	1.30-3.00	0.10-0.25

WNMG-M3P

Double-Sided Trigon Inserts for Medium Machining Conditions on Steel



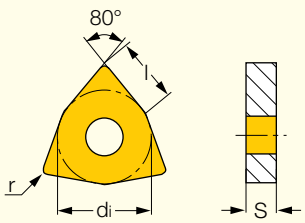


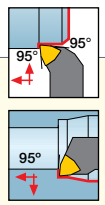


Designation	Dimensions l	di	S	r	Tough ↔ Hard IC830	IC8350	IC8250	IC8150	IC807	Recommended Machining Data a_p (mm)	f (mm/rev)
WNMG 06T304-M3P	6.52	9.52	3.97	0.40	●		●	●		0.45-2.50	0.10-0.45
WNMG 06T308-M3P	6.52	9.52	3.97	0.80	●	●	●	●		0.50-3.00	0.15-0.50
WNMG 06T312-M3P	6.52	9.52	3.97	1.20	●		●			0.80-3.00	0.18-0.60
WNMG 060404-M3P	6.52	9.52	4.76	0.40	●		●	●	●	0.45-2.50	0.10-0.45
WNMG 060408-M3P	6.52	9.52	4.76	0.80	●		●	●	●	0.50-3.00	0.15-0.50
WNMG 060412-M3P	6.52	9.52	4.76	1.20	●			●	●	0.80-3.00	0.18-0.60

WNMG-F3M

Double-Sided Trigon Inserts for Stainless Steel Finishing Applications

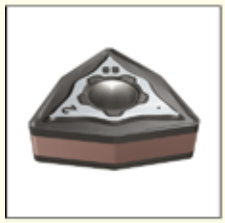


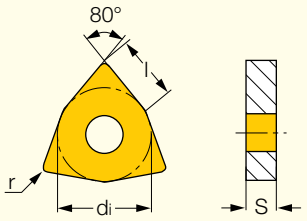


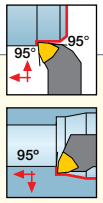
Designation	Dimensions l	di	S	r	Tough ↔ Hard IC830	IC6025	IC6015	IC806	IC807	Recommended Machining Data a_p (mm)	f (mm/rev)
WNMG 060404-F3M	6.52	9.52	4.76	0.40	●	●	●	●	●	0.10-1.50	0.05-0.30
WNMG 060408-F3M	6.52	9.52	4.76	0.80	●	●	●	●	●	0.10-1.50	0.10-0.40
WNMG 060412-F3M	6.52	9.52	4.76	1.20		●	●	●	●	0.20-2.50	0.15-0.50

WNMG-M3M

Double-Sided Trigon Inserts for Machining Stainless and Low Carbon Steel



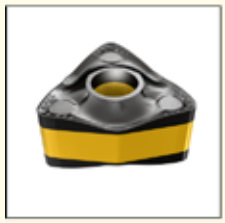


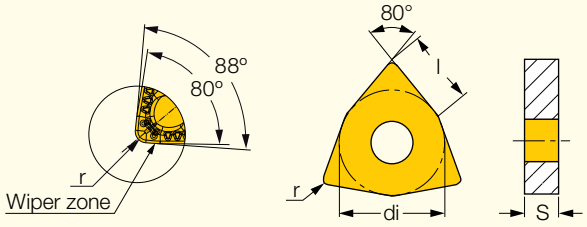


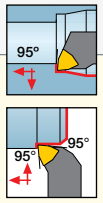
Designation	Dimensions l	di	S	r	Tough ↔ Hard IC830	IC6025	IC6015	IC806	IC807	Recommended Machining Data a_p (mm)	f (mm/rev)
WNMG 060404-M3M	6.52	9.52	4.76	0.40	•	•	•	•	•	0.50-3.50	0.12-0.40
WNMG 060408-M3M	6.52	9.52	4.76	0.80	•	•	•	•	•	0.50-3.50	0.15-0.50
WNMG 060412-M3M	6.52	9.52	4.76	1.20	•	•	•	•	•	0.50-3.50	0.20-0.60

WNMX-M3PW

Double-Sided Trigon Inserts with High Helical Cutting Edge for High Metal Removal Rates



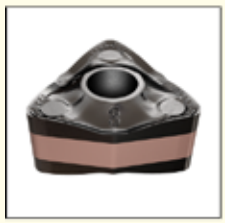


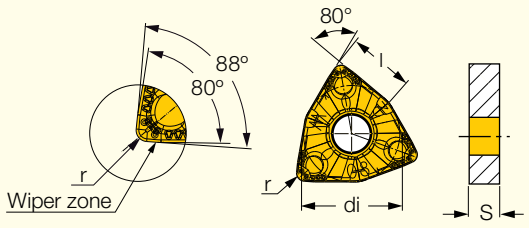


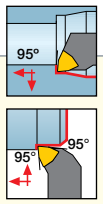
Designation	Dimensions di	r	S	l	Tough ↔ Hard IC830	IC8250	IC8150	IC20N	IC520N	IC807	Recommended Machining Data a_p (mm)	f (mm/rev)
WNMX 060604-M3PW	9.52	0.40	4.41	6.50	•	•	•				1.00-4.00	0.20-0.50
WNMX 060608-M3PW	9.52	0.80	4.41	6.50	•	•	•	•	•	•	1.50-4.00	0.25-0.60

WNMX-M3MW

Double-Sided Trigon Inserts for Machining Stainless Steel, High Temperature Alloys and Soft, Low Carbon Steel



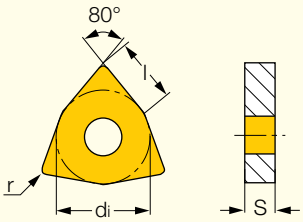


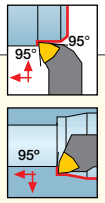


Designation	Dimensions di	r	S	l	Tough ↔ Hard IC830	IC6025	IC6015	Recommended Machining Data a_p (mm)	f (mm/rev)
WNMX 060604-M3MW	9.52	0.40	4.41	6.50	•	•	•	0.80-4.00	0.15-0.50
WNMX 060608-M3MW	9.52	0.80	4.41	6.50	•	•	•	1.00-5.00	0.20-0.60

WNMG-NF

Double-Sided Trigon Inserts for Semi-Finishing and Finishing Applications

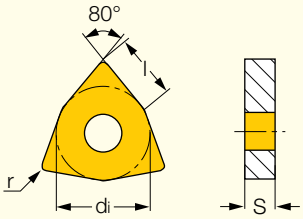


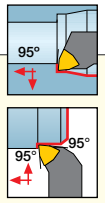


Designation	Dimensions l	di	S	r	Tough ↔ Hard IC8350	IC8250	IC908	IC30N	IC530N	IC10	IC8150	IC20	IC20N	IC520N	IC807	IC907	Recommended Machining Data a_p (mm)	f (mm/rev)
WNMG 06T301-NF	6.52	9.52	3.97	0.10			•										0.20-1.00	0.05-0.15
WNMG 06T302-NF	6.52	9.52	3.97	0.20	•	•		•	•	•	•		•		•	•	0.30-1.50	0.08-0.17
WNMG 06T304-NF	6.52	9.52	3.97	0.40	•	•		•	•	•	•	•	•	•	•	•	0.40-2.50	0.07-0.25
WNMG 06T308-NF	6.52	9.52	3.97	0.80	•	•				•	•	•	•				0.60-3.00	0.08-0.25
WNMG 060402-NF	6.52	9.52	4.76	0.20											•	•	0.30-3.00	0.05-0.20
WNMG 060404-NF	6.52	9.52	4.76	0.40		•									•	•	0.60-3.00	0.08-0.25
WNMG 060408-NF	6.52	9.52	4.76	0.80							•						0.80-3.00	0.08-0.25

WNMG-GN

Double-Sided Trigon Inserts for General Applications

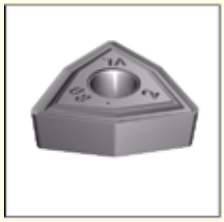


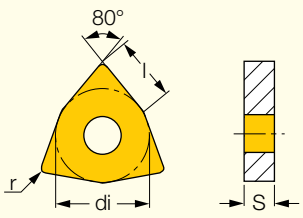


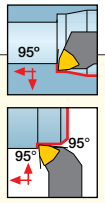
Designation	Dimensions l	di	S	r	Tough ↔ Hard IC8350	IC8250	IC8150	IC20	Recommended Machining Data a_p (mm)	f (mm/rev)
WNMG 06T304-GN	6.52	9.52	3.97	0.40		•	•	•	1.00-3.50	0.14-0.40
WNMG 06T308-GN	6.52	9.52	3.97	0.80	•	•	•		1.00-3.50	0.16-0.45
WNMG 06T312-GN	6.52	9.52	3.97	1.20		•			1.50-4.00	0.18-0.45
WNMG 060404-GN	6.52	9.52	4.76	0.40		•			1.00-3.50	0.14-0.40
WNMG 060408-GN	6.52	9.52	4.76	0.80		•			1.00-3.50	0.16-0.45
WNMG 060412-GN	6.52	9.52	4.76	1.20			•		1.50-4.00	0.18-0.45

WNMG-VL

Double-Sided Trigon Inserts with a Chipformer for High Temperature Alloys and Stainless Steel Valves



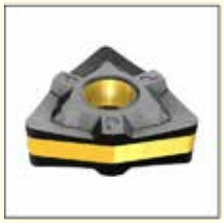


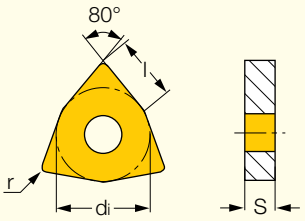


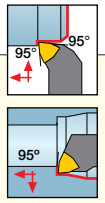
Designation	Dimensions l	di	S	r	Tough ↔ Hard IC908	Recommended Machining Data a_p (mm)	f (mm/rev)
WNMG 06T308-VL	6.52	9.52	3.97	0.80	•	0.50-3.00	0.07-0.25

WNMG-PP

Double-Sided Trigon Inserts for Machining Very Ductile Materials at Medium Cutting Conditions



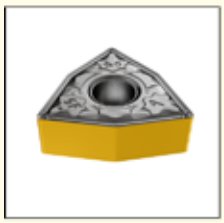


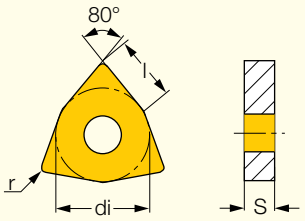


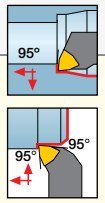
Designation	Dimensions l	di	S	r	Tough ↔ Hard IC8350	IC8250	IC530N	IC10	IC8150	IC807	IC907	Recommended Machining Data a_p (mm)	f (mm/rev)
WNMG 06T304-PP	6.52	9.52	3.97	0.40	•	•	•	•	•	•	•	1.00-3.00	0.14-0.30
WNMG 06T308-PP	6.52	9.52	3.97	0.80	•	•			•	•	•	1.00-3.00	0.14-0.30
WNMG 060404-PP	6.52	9.52	4.76	0.40	•	•				•	•	1.00-3.00	0.14-0.30
WNMG 060408-PP	6.52	9.52	4.76	0.80	•					•	•	1.00-3.00	0.14-0.30

WNMG-SF

Double-Sided Trigon Inserts for Super Finishing



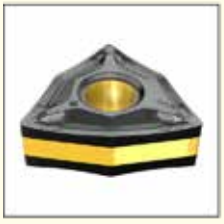


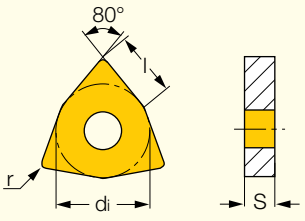


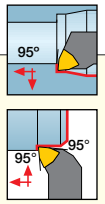
Designation	Dimensions l	di	S	r	Tough ↔ Hard IC530N	IC520N	IC807	IC907	Recommended Machining Data a_p (mm)	f (mm/rev)
WNMG 06T302-SF	6.52	9.52	3.97	0.20	•				0.30-1.50	0.02-0.15
WNMG 06T304-SF	6.52	9.52	3.97	0.40	•	•	•	•	0.30-1.50	0.05-0.15

WNMG-WG

Double-Sided Trigon Wiper Inserts for High Surface Finish at High Feed Turning



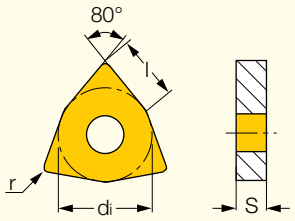


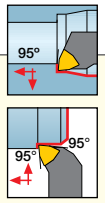


Designation	Dimensions di	l	S	r	Tough ↔ Hard IC8250	IC530N	IC8150	IC20N	IC520N	IC807	IC907	Recommended Machining Data a_p (mm)	f (mm/rev)
WNMG 06T304-WG	9.52	6.52	3.97	0.40	•	•	•	•	•			0.40-3.00	0.10-0.35
WNMG 06T308-WG	9.52	6.52	3.97	0.80	•		•		•	•	•	0.60-3.50	0.10-0.50
WNMG 060404-WG	9.52	6.52	4.76	0.40	•	•	•			•		0.40-3.00	0.10-0.35
WNMG 060408-WG	9.52	6.52	4.76	0.80	•		•			•		0.60-3.50	0.10-0.50

WNMG-TF

Double-Sided Trigon Inserts for Machining a Wide Range of Materials at Medium Cutting Conditions

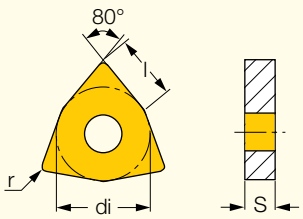


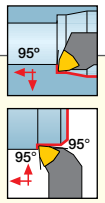


Designation	Dimensions l	di	S	r	Tough ↔ Hard IC8250	IC8150	IC20	IC20N	IC806	IC807	IC907	Recommended Machining Data a_p (mm)	f (mm/rev)
WNMG 06T304-TF	6.52	9.52	3.97	0.40	•		•			•	•	1.00-3.00	0.12-0.35
WNMG 06T308-TF	6.52	9.52	3.97	0.80	•	•	•	•	•	•	•	1.00-3.00	0.12-0.35
WNMG 06T312-TF	6.52	9.52	3.97	1.20						•	•	1.00-4.00	0.15-0.40
WNMG 060404-TF	6.52	9.52	4.76	0.40	•					•	•	1.00-3.00	0.12-0.35
WNMG 060408-TF	6.52	9.52	4.76	0.80	•	•				•	•	1.00-3.00	0.12-0.35
WNMG 060412-TF	6.52	9.52	4.76	1.20						•	•	1.00-4.00	0.15-0.35

WNMG-WF

Double-Sided Trigon Wiper Inserts for Finishing Operations at High Feeds

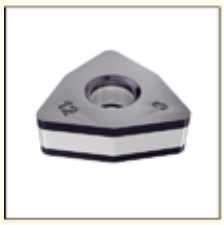


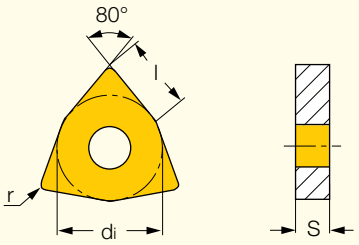


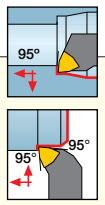
Designation	Dimensions l	di	S	r	Tough ↔ Hard IC807	IC907	Recommended Machining Data a_p (mm)	f (mm/rev)
WNMG 060402-WF	6.52	9.52	4.76	0.20		•	0.20-3.00	0.05-0.25
WNMG 060404-WF	6.52	9.52	4.76	0.40	•	•	0.50-3.00	0.05-0.30
WNMG 060408-WF	6.52	9.52	4.76	0.80		•	0.80-3.50	0.07-0.30

WNMA

Double-Sided Trigon Inserts for Short Chipping Materials such as Cast Iron





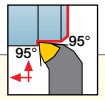


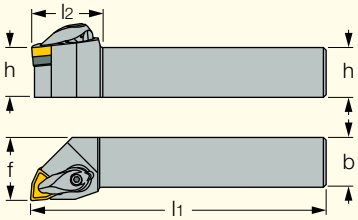
Designation	Dimensions l	di	S	r	Tough ↔ Hard IC5010	IC428	IC5005	Recommended Machining Data a_p (mm)	f (mm/rev)
WNMA 06T304	6.52	9.52	3.97	0.40	•		•	0.50-2.00	0.03-0.29
WNMA 06T304	6.52	9.52	3.97	0.40		•		0.50-2.00	0.03-0.29
WNMA 06T308	6.52	9.52	3.97	0.80	•	•	•	1.00-3.00	0.03-0.38
WNMA 06T312	6.52	9.52	3.97	1.20		•	•	1.50-3.50	0.03-0.43
WNMA 060404	6.52	9.52	4.76	0.40	•		•	1.00-3.00	0.03-0.48
WNMA 060408	6.52	9.52	4.76	0.80	•		•	1.00-3.00	0.03-0.48
WNMA 060408	6.52	9.52	4.76	0.80		•		1.00-3.00	0.03-0.48

ISOTURN • FLASHTURN ECO LINE

DWLNR/L

External 95° Lead Toolholders for Negative WNMG Trigon Inserts





Right-hand shown

Designation	h	b	l_1	l_2	f	G_a°	G_r°	Insert
DWLNR/L 1616H-06	16.0	16.0	100.00	26.0	16.0	-6	-6	WNMG 0604
DWLNR/L 2020K-06	20.0	20.0	125.00	26.0	25.0	-6	-6	WNMG 0604
DWLNR/L 2525M-06	25.0	25.0	150.00	24.0	32.0	-6	-6	WNMG 0604

Spare Parts

Designation	Seat	Seat 1	Seat Screw	Clamp	Right-Left Screw	Clamp Spring	Key 1
DWLNR/L 1616H-06	RWT 322	RWT 3-2(b)*	SR 40090I	LCGR-3	SR RC3	KSP 3	HW 2.5
DWLNR/L 2020K-06	RWT 322	RWT 3-2(b)*	SR 40090I	LCGR-3	SR RC3	KSP 3	HW 2.5
DWLNR/L 2525M-06	RWT 322	RWT 3-2(b)*	SR 40090I	LCGR-3	SR RC3	KSP 3	HW 2.5

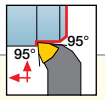
* (Optional, should be ordered separately)

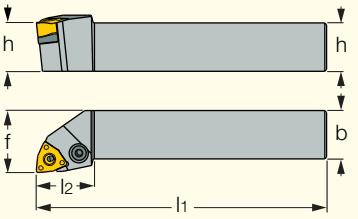
(b) RWT 3-2 seat, for WNMG 06T3 insert

HELITURN LD • FLASHTURN ECO LINE

PWLNR/L-X

Lever Lock External Turning Tools for HELITURNLD WNMX or WNMG Trigon Inserts

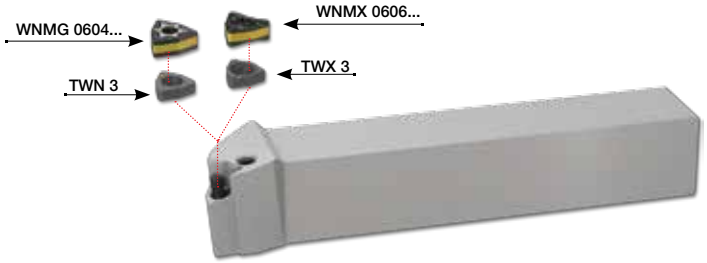




Right-hand shown

Designation	h	b	l_1	l_2	f	G_a°	G_r°	Insert
PWLNR/L 2020K-06X (1)	20.0	20.0	125.00	25.0	25.0	-6	-6	WNMX 0606, WNMG 0604
PWLNR/L 2525M-06X (1)	25.0	25.0	150.00	25.0	32.0	-6	-6	WNMX 0606, WNMG 0604

(1) Supplied with TWX 3 seat for WNMX 0606.. inserts and TWN 3 seat for WNMG 0604.. inserts. (

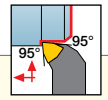


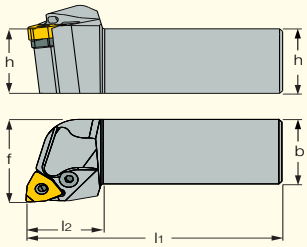
Spare Parts

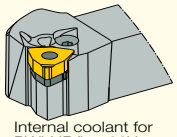
Designation	Seat	Seat 1	Spring Pin	Lever	Screw	Hex Flag Key	Punch
PWLNR/L 2020K-06X	TWX 3	TWN 3	SP 3	LR 3	SR 117-2014	HW 2.5/5	PN 3-4
PWLNR/L 2525M-06X	TWX 3	TWN 3	SP 3	LR 3	SR 117-2014	HW 2.5	PN 3-4

PWLNR/L-X-JHP

Lever Lock Tools for HELITURN LD WNMX and WNMG Trigon
Inserts with Channels for High Pressure Coolant







Internal coolant for PWLNR/L... 06X

Designation	h	b	l_1	l_2	f	G_a°	G_r°	Insert
PWLNR/L 2020K-06X-JHP (1)	20.0	20.0	125.00	25.0	25.0	-6	-6	WNMX 0606, WNMG 0604
PWLNR/L 2525M-06X-JHP (1)	25.0	25.0	150.00	25.0	32.0	-6	-6	WNMX 0606, WNMG 0604

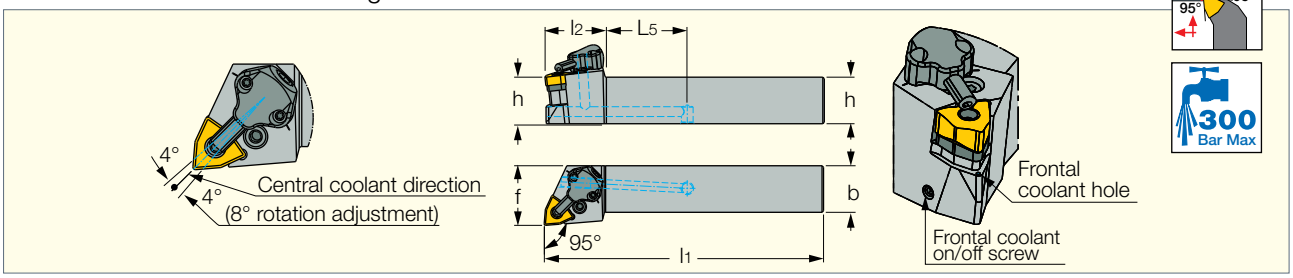
(1) Supplied with TWX 3 seat for WNMX 0606.. inserts and TWN 3 seat for WNMG 0604.. inserts.

Spare Parts

Designation	Seat	Seat 1	Spring Pin	Lever	Screw	Punch	Hex Flag Key
PWLNR/L 2020K-06X-JHP	TWX 3	TWN 3	SP 3	LR 3	SR 117-2014	PN 3-4	HW 2.5/5
PWLNR/L 2525M-06X-JHP	TWX 3	TWN 3	SP 3	LR 3	SR 117-2014	PN 3-4	HW 2.5/5

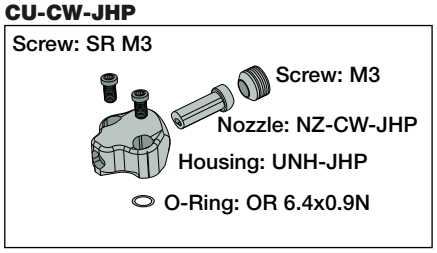
PWLNR/L-X-JHP-MC

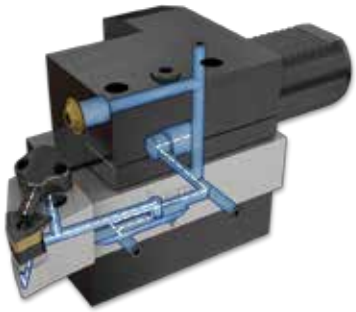
Lever Lock Tools for HELITURN LD WNMX and WNMG Trigon Inserts with Bottom Inlets for High Pressure Coolant Channels



Designation	h	b	l_1	l_2	L_5	f	Insert
PWLNR/L 2020X-06X-JHP-MC	20.0	20.0	97.00	27.0	29.00	25.0	WNMX 0606, WNMG 0604
PWLNR/L 2525X-06X-JHP-MC	25.0	25.0	118.00	33.0	35.00	32.0	WNMX 0606, WNMG 0604

CU-CW-JHP



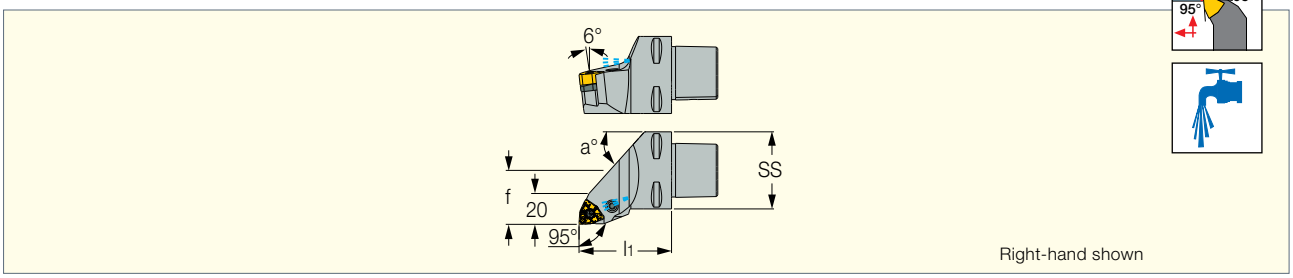


Spare Parts

Designation	Seat	Seat 1	Spring Pin	Lever	Screw	Punch	Key	Cooling Unit	Key 1	Plug
PWLNR/L 2020X-06X-JHP-MC	TWX 3	TWN 3	SP 3	LR 3	SR 117-2014	PN 3-4	HW 2.5	CU-CW-JHP	T-8/5	SR M5X5 DIN913 TL360
PWLNR/L 2525X-06X-JHP-MC	TWX 3	TWN 3	SP 3	LR 3	SR 117-2014	PN 3-4	HW 2.5	CU-CW-JHP	T-8/5	SR M5X5 DIN913 TL360

C#-PWLNR/L-X

Lever Lock Tools with CAMFIX Shanks Carrying HELITURN LD WNMX or WNMG Inserts



Designation	SS	f	l_1	a°	Insert
C4 PWLNR/L-27050-06X (1)	40	27.0	50.00	45	WNMX 0606, WNMG 0604
C5 PWLNL-25060-06X (1)	50	25.0	60.00	48	WNMX 0606, WNMG 0604

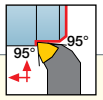
(1) Supplied with TWX 3 seat for WNMX 0606.. inserts and TWN 3 seat for WNMG 0604.. inserts.

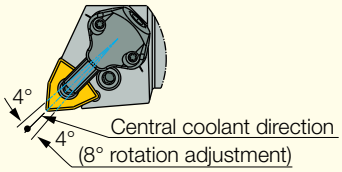
Spare Parts

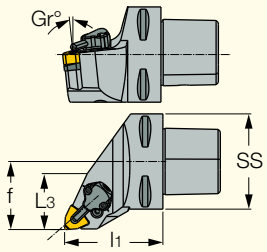
Designation	Seat	Seat 1	Spring Pin	Lever	Screw	Punch	Cooling Nozzle	Hex Flag Key
C4 PWLNR/L-27050-06X	TWX 3	TWN 3	SP 3	LR 3	SR 117-2014	PN 3-4	EZ 62	HW 2.5/5
C5 PWLNL-25060-06X	TWX 3	TWN 3	SP 3	LR 3	SR 117-2014	PN 3-4	EZ 83	HW 2.5/5

C#-PWLNR/L-X-JHP

Lever Lock Tools with CAMFIX Shanks and Channels for High Pressure Coolant, Carrying WNMX or WNMG Inserts

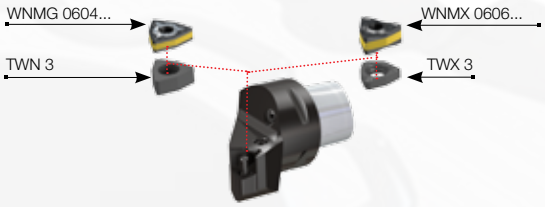






Designation	SS	l_1	f	L_3	G_a°	G_r°	Insert
C3 PWLNR-22045-06X-JHP (1)	32	40.00	27.0	22.00	-6	-6	WNMX 0606, WNMG 0604

(1) Supplied with TWX 3 seat for WNMX 0606.. inserts and TWN 3 seat for WNMG 0604.. inserts.

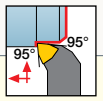


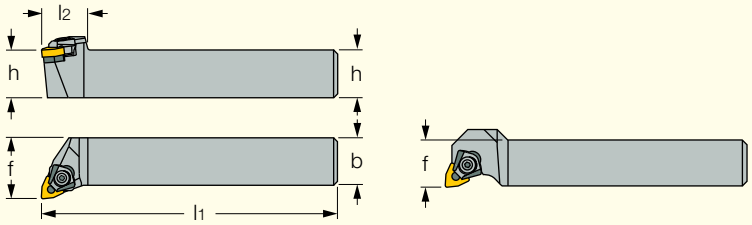
Spare Parts

Designation	Seat	Seat 1	Spring Pin	Punch	Lever	Screw	Cooling Unit	Key	Key 1
C3 PWLNR-22045-06X-JHP	TWX 3	TWN 3	SP 3	PN 3-4	LR 3	SR 117-2014	CU-CW-JHP	T-8/5	HW 2.5

MWLNR/L-W

Top Wedge Lock External Toolholders for Trigon Inserts





MWLNR..-W MWLNR..-06SW Right-hand shown

Designation	h	b	l_1	l_2	f	G_a°	G_r°	Insert
MWLNR/L 1616H-06SW	16.0	16.0	100.00	23.0	16.0	-6	-6	WNMG 06T3
MWLNR/L 2020K-06W	20.0	20.0	125.00	25.0	25.0	-6	-6	WNMG 06T3
MWLNR/L 2525M-06W	25.0	25.0	150.00	25.0	32.0	-6	-6	WNMG 06T3

Spare Parts

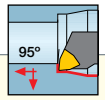
Designation	Seat	Seat 1	Locking Pin	Screw	Wedge (set)	Key
MWLNL 1616H-06SW	IWSN 322W		ZNW 3W	SR 14-564	LC 250 SET 1	HW 2.5
MWLNR 1616H-06SW	IWSN 322W	IWSN 3-2W(b)*	ZNW 3W	SR 14-564	LC 250 SET 1	HW 2.5
MWLNR/L 2020K-06W	IWSN 322W	IWSN 3-2W(b)*	ZNW 3W	SR 14-564	LC 250 SET 1	HW 2.5
MWLNR/L 2525M-06W	IWSN 322W	IWSN 3-2W(b)*	ZNW 3W	SR 14-564	LC 250 SET 1	HW 2.5

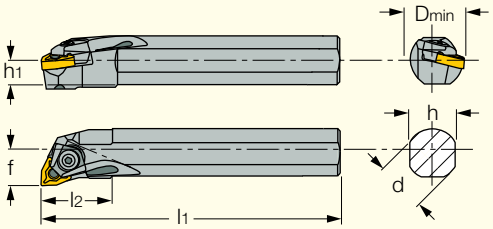
* (Optional, should be ordered separately)

(b) Use IWSN 3-2W optional seat for WNMG 0604.. inserts

A/S-MWLNR/L-W

Top Wedge Lock Boring Bars for Double-Sided Trigon Inserts





Right-hand shown

Designation	d	l1	l2	h	h1	f	D min	Ga°	Gr°		Insert
A20Q MWLNR/L-06W	20.00	180.00	28.0	18.0	9.2	13.0	25.00	-6	10	Y	WNMG 06T3
A20 MWLNR/L-06W-AD (1)	20.00	100.00	28.0	18.0	9.0	13.0	25.00	-6	14	Y	WNMG 06T3
A25R MWLNR/L-06W	25.00	300.00	34.0	23.0	11.7	17.0	32.00	-6	14	Y	WNMG 06T3
A32S MWLNR/L-06W	32.00	250.00	28.0	29.0	14.7	19.0	36.00	-6	10	Y	WNMG 06T3
S20S MWLNR/L-06W	20.00	250.00	28.0	18.0	9.2	13.0	25.00	-6	10	N	WNMG 06T3
S25T MWLNR/L-06W	25.00	300.00	28.0	23.0	11.7	17.0	32.00	-6	14	N	WNMG 06T3
S32U MWLNR/L-06W	32.00	350.00	40.0	29.0	14.7	19.0	36.00	-6	10	N	WNMG 06T3

Spare Parts

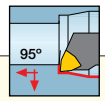
Designation	Seat	Seat 1	Locking Pin	Wedge (set)	Key	Fitting
A20Q MWLNR/L-06W			ZNW 3WI	LC 250 SET 1	HW 2.5	PL 20
A20 MWLNR/L-06W-AD			ZNW 3WI	LC 250 SET 1	HW 2.5	PL 20
A25R MWLNR/L-06W	IWSN 322W	IWSN 3-2W(b)*	ZNW 3W	LC 250 SET 1	HW 2.5	PL 25
A32S MWLNR/L-06W	IWSN 322W	IWSN 3-2W(b)*	ZNW 3W	LC 250 SET 1	HW 2.5	PL 32
S20S MWLNR/L-06W			ZNW 3WI	LC 250 SET 1	HW 2.5	
S25T MWLNR/L-06W	IWSN 322W	IWSN 3-2W(b)*	ZNW 3W	LC 250 SET 1	HW 2.5	
S32U MWLNR/L-06W	IWSN 322W	IWSN 3-2W(b)*	ZNW 3W	LC 250 SET 1	HW 2.5	

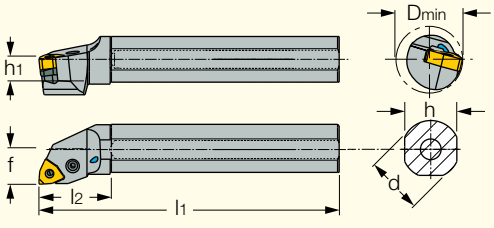
* (Optional, should be ordered separately)

(b) Use IWSN 3-2W optional seat for WNMG 0604.. inserts

A-PWLNR/L-X/G

Lever Lock Boring Bars with Coolant Holes Carrying the HELITURN LD WNMX or WNMG Trigon Inserts





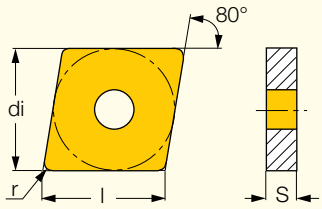
Designation	d	h	h1	l1	l2	f	D min	Ga°	Gr°	Insert
A16M PWLNR/L-06G	16.00	15.0	8.0	150.00	30.0	11.00	25.00	-6	-14	WNMG 0604
A20Q PWLNR/L-06G	20.00	18.0	9.2	180.00	35.0	13.00	25.00	-6	-14	WNMG 0604
A25R PWLNR/L-06G	25.00	23.0	11.5	200.00	35.0	17.00	32.00	-6	-14	WNMG 0604
A32S PWLNR/L-06G	32.00	29.0	14.5	250.00	48.0	22.00	40.00	-6	-12	WNMG 0604

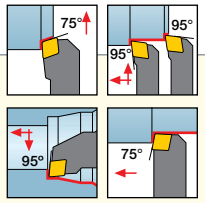
Spare Parts

Designation	Seat 1	Spring Pin	Punch	Lever	Screw	Fitting	Hex Flag Key
A16M PWLNL-06G				LR 3W	SR 117-2014	PL 16	HW 2.5/5
A16M PWLNR-06G				LR 3S	SR 117-2009	PL 16	HW 2.0
A20Q PWLNL-06G				LR 3S	SR 117-2009	PL 20	HW 2.0
A20Q PWLNR-06G				LR 3W	SR 117-2014	PL 20	HW 2.5/5
A25R PWLNL-06G	TWN 3	SP 3	PN 3-4	LR 3W	SR 117-2014	PL 25	HW 2.5
A25R PWLNR-06G	TWN 3	SP 3	PN 3-4	LR 3W	SR 117-2014	PL 25	HW 2.5/5
A32S PWLNL-06G	TWN 3	SP 3	PN 3-4	LR 3W	SR 117-2014	PL 25	HW 2.5/5
A32S PWLNR-06G	TWN 3	SP 3	PN 3-4	LR 3W	SR 117-2014	PL 25	HW 2.5/5

CNMG-F3P

Double-Sided 80° Rhombic Inserts for Semi-Finishing and Finishing Applications

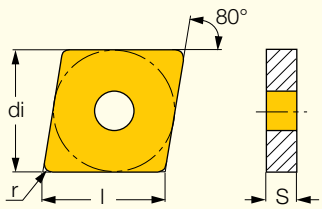


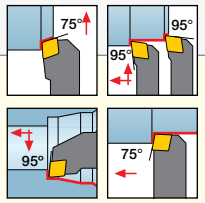


Designation	Dimensions l	di	S	r	Tough ↔ Hard IC830	IC8250	IC8150	IC20N	IC520N	IC807	Recommended Machining Data a_p (mm)	f (mm/rev)
CNMG 090404-F3P	9.67	9.52	4.76	0.40	•	•	•	•	•	•	0.50-3.50	0.07-0.25
CNMG 090408-F3P	9.67	9.52	4.76	0.80	•	•	•	•	•	•	0.90-3.50	0.08-0.25

CNMG-M3P

Double-Sided 80° Rhombic Inserts for Medium Machining Conditions on Steel

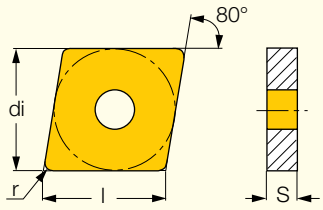


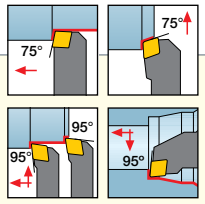


Designation	Dimensions l	di	S	r	Tough ↔ Hard IC830	IC8250	IC8150	IC807	Recommended Machining Data a_p (mm)	f (mm/rev)
CNMG 090404-M3P	9.67	9.52	4.76	0.40	•	•	•	•	0.40-4.00	0.10-0.30
CNMG 090408-M3P	9.67	9.52	4.76	0.80	•	•	•	•	0.50-4.50	0.15-0.50

CNMG-F3M

Double-sided 80° Rhombic Inserts for Stainless Steel Finishing Applications

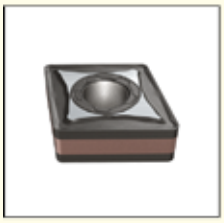


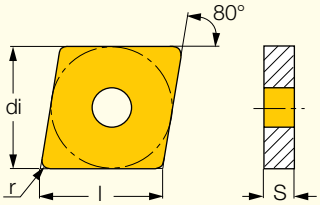


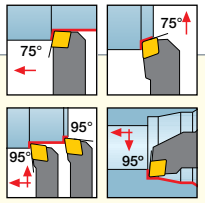
Designation	Dimensions l	di	S	r	Tough ↔ Hard IC830	IC6025	IC6015	IC806	IC807	Recommended Machining Data a_p (mm)	f (mm/rev)
CNMG 090404-F3M	9.67	9.52	4.76	0.40	•	•	•	•	•	0.10-1.50	0.05-0.30
CNMG 090408-F3M	9.67	9.52	4.76	0.80	•	•	•	•	•	0.10-1.50	0.10-0.40

CNMG-M3M

Double-Sided 80° Rhombic Inserts for Machining Stainless and Low Carbon Steel



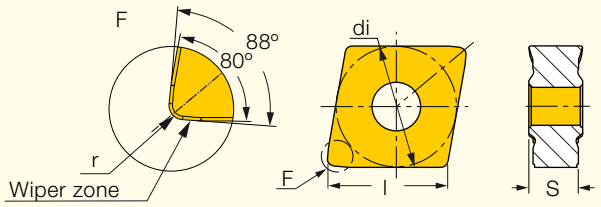


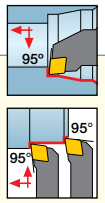


Designation	Dimensions l	di	S	r	Tough ↔ Hard IC830	IC6025	IC6015	IC806	IC807	Recommended Machining Data a_p (mm)	f (mm/rev)
CNMG 090404-M3M	9.67	9.52	4.76	0.40	•	•	•	•	•	0.40-4.00	0.12-0.40
CNMG 090408-M3M	9.67	9.52	4.76	0.80	•	•	•	•	•	0.50-4.50	0.15-0.50

CNMX-M3PW

Double-Sided 80° Rhombic Inserts with High Helical Cutting Edge for High Metal Removal Rates



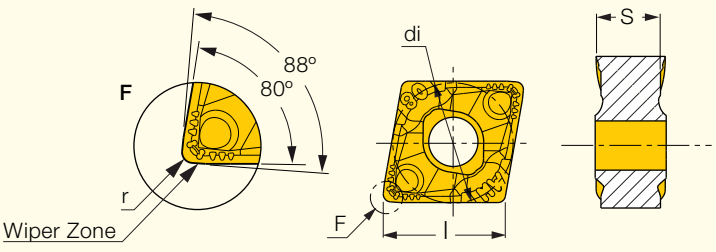


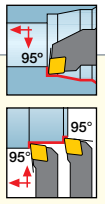
Designation	Dimensions l	di	S	r	Tough ↔ Hard IC830	IC8250	IC8150	IC20N	IC520N	Recommended Machining Data a_p (mm)	f (mm/rev)
CNMX 090604-M3PW	9.67	9.52	4.40	0.40	•	•	•			1.00-4.50	0.20-0.50
CNMX 090608-M3PW	9.67	9.52	4.40	0.80	•	•	•	•	•	1.50-5.00	0.25-0.60

• PCLNR/L...X and A..-PCLNR/L-X are most recommended as they were designed especially for this insert

CNMX-M3MW

Double-Sided 80° Rhombic Inserts with High Helical Cutting Edge, for High Metal Removal Rates of Stainless Steel



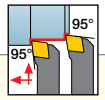


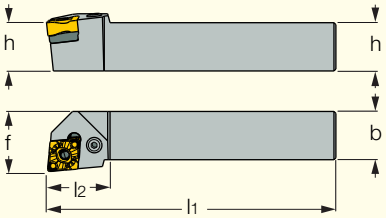
Designation	Dimensions l	di	S	r	Tough ↔ Hard IC830	IC6025	IC6015	Recommended Machining Data a_p (mm)	f (mm/rev)
CNMX 090604-M3MW	9.67	9.52	4.40	0.40	•	•	•	0.80-4.00	0.15-0.45
CNMX 090608-M3MW	9.67	9.52	4.40	0.80	•	•	•	1.00-5.00	0.20-0.60

• PCLNR/L...X and A..-PCLNR/L-X are most recommended as they were designed especially for this insert

PCLNR/L-X

Lever Lock Toolholders for CNMX/CNMG 80° Rhombic Inserts

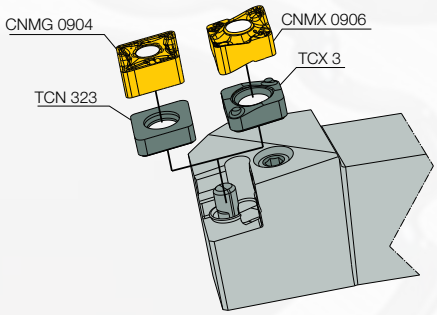




Right-hand shown

Designation	b	h	l_1	l_2	f	G_a°	G_r°	Insert
PCLNR/L 2020K-09X	20.0	20.0	125.00	25.0	25.0	-6	-6	CNMX 0906 CNMG 0904
PCLNR/L 2525M-09X	25.0	25.0	150.00	25.0	32.0	-6	-6	CNMX 0906 CNMG 0904

• Supplied with TCX 3 seat for CNMX 0906.. inserts and TCN 323 seat for CNMG 0904.. inserts,

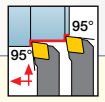


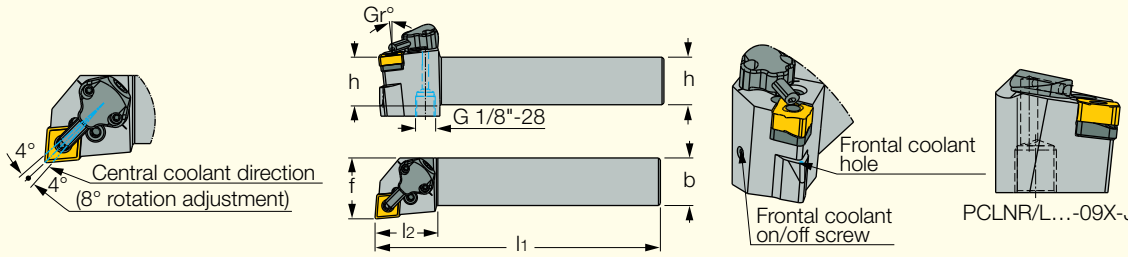
Spare Parts

Designation	Seat	Seat 1	Spring Pin	Lever	Screw	Key	Punch
PCLNR/L 2020K-09X	TCX 3	TCN 323	SP 3	LR 3	SR 117-2014	HW 2.5	PN 3-4
PCLNR/L 2525M-09X	TCX 3	TCN 323	SP 3	LR 3	SR 117-2014	HW 2.5	PN 3-4

PCLNR/L-X-JHP

Lever Lock Toolholders for CNMX/CNMG 80° Rhombic Inserts with Channels for High Pressure Coolant





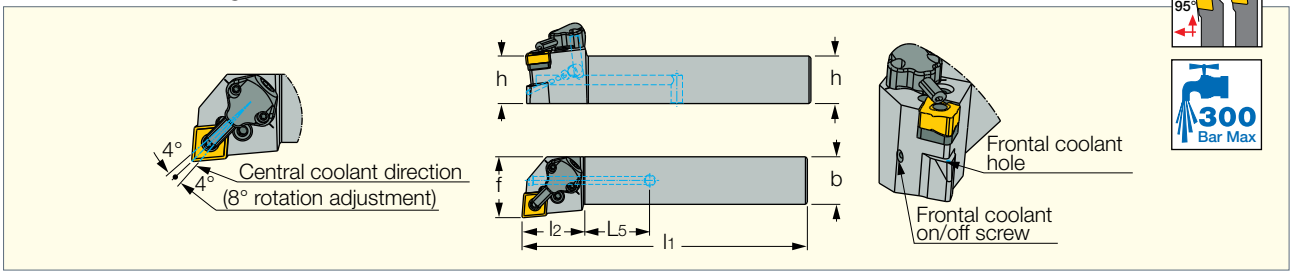
Designation	b	h	l_1	l_2	f	G_a°	G_r°	Insert
PCLNR/L 1616H-09X-JHP	16.0	16.0	150.00	33.0	32.0	-6	-6	CNMX 0906, CNMG 0904
PCLNR/L 2020K-09X-JHP	20.0	20.0	125.00	33.0	32.0	-6	-6	CNMX 0906, CNMG 0904
PCLNR/L 2525M-09X-JHP	25.0	25.0	150.00	33.0	32.0	-6	-6	CNMX 0906, CNMG 0904

Spare Parts

Designation	Seat	Seat 1	Spring Pin	Lever	Screw	Punch	Hex Flag Key
PCLNR/L 1616H-09X-JHP	TCX 3	TCN 323	SP 3	LR 3	SR 117-2014	PN 3-4	HW 2.5/5
PCLNR/L 2020K-09X-JHP	TCX 3	TCN 323	SP 3	LR 3	SR 117-2014	PN 3-4	HW 2.5
PCLNR/L 2525M-09X-JHP	TCX 3	TCN 323	SP 3	LR 3	SR 117-2014	PN 3-4	HW 2.5/5

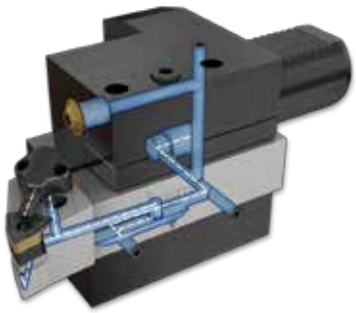
PCLNR/L-X-JHP-MC

Lever Lock Tools for CNMX/CNMG 80° Rhombic Inserts with Bottom Inlets for High Pressure Coolant Channels



Designation	b	h	l_1	l_2	L_5	f	Insert
PCLNR/L 2020X-09X-JHP-MC	20.0	20.0	97.00	27.0	29.00	25.0	CNMX 0906, CNMG 0904
PCLNR/L 2525X-09X-JHP-MC	25.0	25.0	118.00	33.0	35.00	32.0	CNMX 0906, CNMG 0904

• Supplied with TCX 3 seat for CNMX 0906.. inserts and TCN 323 seat for CNMG 0904.. inserts.

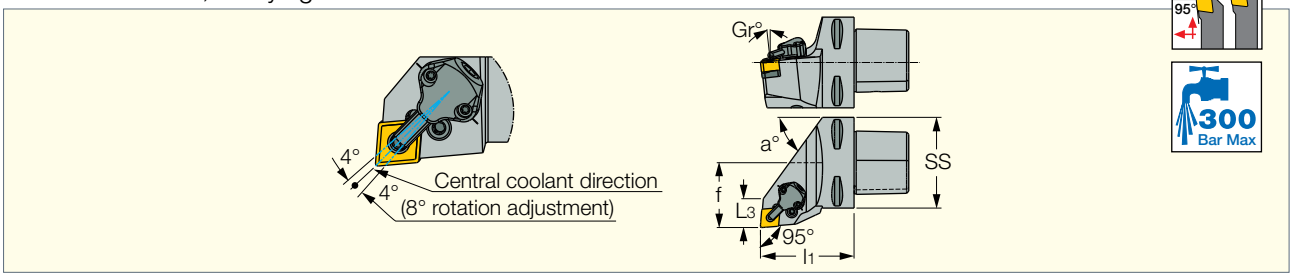


Spare Parts

Designation	Seat	Seat 1	Spring Pin	Lever	Screw	Punch	Key	Cooling Unit	Plug	Key 2
PCLNR/L 2020X-09X-JHP-MC	TCX 3	TCN 323	SP 3	LR 3	SR 117-2014	PN 3-4	HW 2.5	CU-CW-JHP	SR M5X5 DIN913 TL360	T-8/5
PCLNR/L 2525X-09X-JHP-MC	TCX 3	TCN 323	SP 3	LR 3	SR 117-2014	PN 3-4	HW 2.5	CU-CW-JHP	SR M5X5 DIN913 TL360	T-8/5

C#-PCLNR/L-X-JHP

Lever Lock Tools with CAMFIX Shanks and Channels for High Pressure Coolant, Carrying CNMX or CNMG Inserts



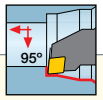
Designation	SS	f	l_1	L_3	a°	Ga°	Gr°	Insert
C3 PCLNR-22045-09X-JHP (1)	32	22.0	40.00	24.00	45	-6	-6	CNMX 0906, CNMG 0904
C4 PCLNR/L-27050-09X-JHP (1)	40	27.0	50.00	24.00	45	-6	-6	CNMX 0906, CNMG 0904
C5 PCLNR/L-35060-09X-JHP (1)	50	35.0	60.00	26.00	45	-6	-6	CNMX 0906, CNMG 0904

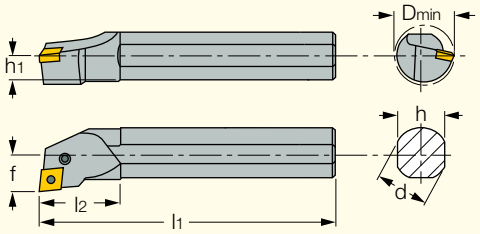
(1) Supplied with TCX 3 seat for CNMX 0906.. inserts and TCN 323 seat for CNMG 0904.. inserts.

Spare Parts

Designation	Seat	Seat 1	Spring Pin	Lever	Screw	Punch	Cooling Unit	Key	Key 1
C3 PCLNR-22045-09X-JHP	TCX 3	TCN 323	SP 3	LR 3	SR 117-2014	PN 3-4	CU-CW-JHP	T-8/5	HW 2.5
C4 PCLNR/L-27050-09X-JHP	TCX 3	TCN 323	SP 3	LR 3	SR 117-2014	PN 3-4	CU-CW-JHP	T-8/5	HW 2.5
C5 PCLNR/L-35060-09X-JHP	TCX 3	TCN 323	SP 3	LR 3	SR 117-2014	PN 3-4	CU-CW-JHP	T-8/5	HW 2.5

Lever Lock Boring Bars for CNMX/CNMG Inserts

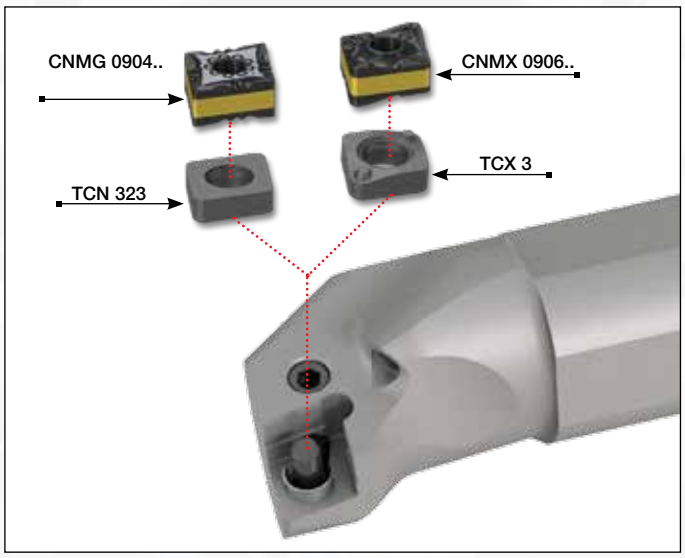




Right-hand shown

Designation	d	l_1	l_2	h	h_1	f	G_a°	G_r°	D min		Insert
A16M PCLNR/L-09G (1)	16.00	150.00	30.0	15.0	7.5	11.0	-12	-16	21.00	Y	CNMG 0904..
A20Q PCLNR/L-09G (1)	20.00	180.00	30.0	18.0	9.0	13.0	-6	-15	25.00	Y	CNMG 0904..
A25R PCLNR/L-09X (2)	25.00	200.00	35.0	23.0	11.5	17.0	-6	-15	32.00	Y	CNMX 0906, CNMG 0904
A32S PCLNR/L-09X (2)	32.00	250.00	40.0	29.0	14.5	22.0	-6	-13	40.00	Y	CNMX 0906, CNMG 0904

(1) For CNMG 0904.. inserts only (2) Supplied with TCX 3 seat for CNMX 0906.. inserts and TCN 323 seat for CNMG 0904.. inserts.



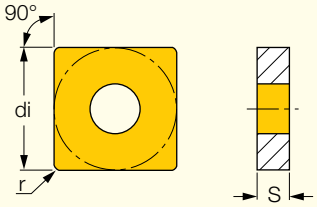
Spare Parts

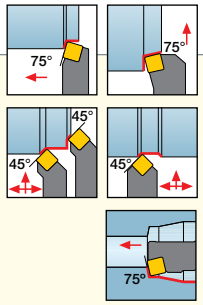
Designation	Seat	Seat 1	Spring Pin	Punch	Lever	Screw	Key	Fitting
A16M PCLNR/L-09G					LR 3S	SR 117-2009	HW 2.0	PL 16
A20Q PCLNR/L-09G					LR 3S	SR 117-2009	HW 2.0	PL 20
A25R PCLNR/L-09X	TCX 3	TCN 323	SP 3	PN 3-4	LR 3	SR 117-2014	HW 2.5	PL 25
A32S PCLNR/L-09X	TCX 3	TCN 323	SP 3	PN 3-4	LR 3	SR 117-2014	HW 2.5	PL 32

* (Optional, should be ordered separately)

SNMG-F3P

Double-Sided Square Inserts for Semi-Finishing and Finishing of Steel

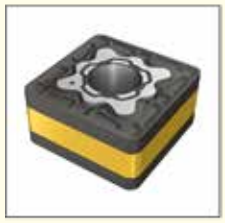


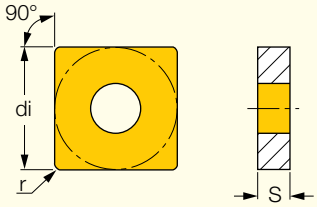


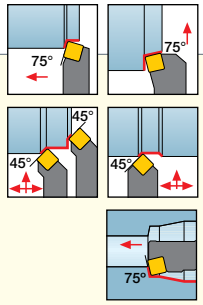
Designation	Dimensions di	S	r	Tough ↔ Hard IC830	IC8250	IC8150	IC20N	IC520N	IC807	Recommended Machining Data a_p (mm)	f (mm/rev)
SNMG 090404-F3P	9.52	4.76	0.40	•	•	•	•	•	•	0.50-3.50	0.07-0.25
SNMG 090408-F3P	9.52	4.76	0.80	•			•	•	•	0.90-3.50	0.08-0.25

SNMG-M3P

Double-Sided Square Inserts for Medium Machining Conditions on Steel



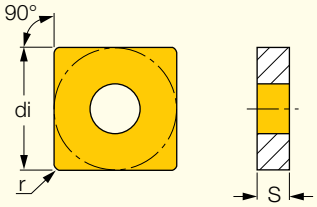


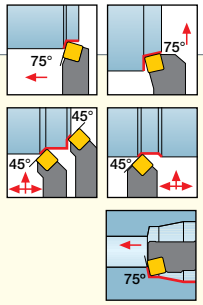


Designation	Dimensions di	S	r	Tough ↔ Hard IC830	IC8250	IC8150	IC807	Recommended Machining Data a_p (mm)	f (mm/rev)
SNMG 090404-M3P	9.52	4.76	0.40	•	•	•	•	0.50-3.50	0.15-0.50
SNMG 090408-M3P	9.52	4.76	0.80	•	•	•	•	0.50-3.50	0.15-0.55

SNMG-F3M

Double-Sided Square Inserts for Stainless Steel Finishing Applications

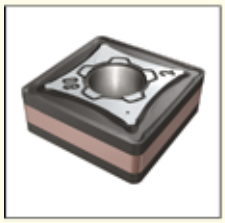


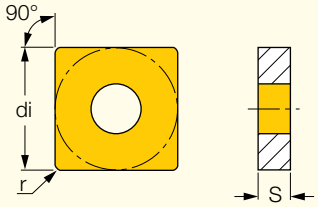


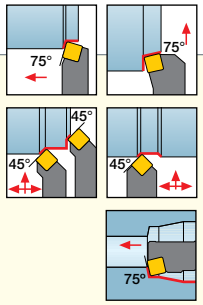
Designation	Dimensions di	S	r	Tough ↔ Hard IC830	IC6025	IC6015	IC806	IC807	Recommended Machining Data a_p (mm)	f (mm/rev)
SNMG 090404-F3M	9.52	4.76	0.40		•	•	•	•	0.50-3.50	0.05-0.30
SNMG 090408-F3M	9.52	4.76	0.80	•			•	•	0.50-3.50	0.05-0.30

SNMG-M3M

Double-Sided Square Inserts with a Special Chipformer for Heavy Machining





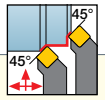


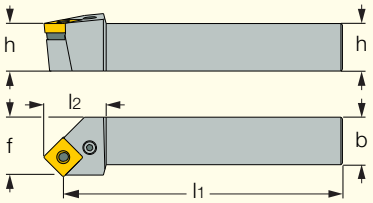
Designation	Dimensions di	S	r	Tough ↔ Hard IC830	IC6025	IC6015	IC807	Recommended Machining Data a_p (mm)	f (mm/rev)
SNMG 090404-M3M	9.52	4.76	0.40	•			•	0.50-4.50	0.15-0.50
SNMG 090408-M3M	9.52	4.76	0.80	•	•	•	•	0.50-4.50	0.15-0.50

ISOTURN • FLASHTURN ECO LINE

PSSNR/L

45° Lead Angle Lever Lock Longitudinal and Facing Toolholders for Negative Square Inserts





Right-hand shown

Designation	h	b	l_1	l_2	f	G_a°	G_r°	Insert
PSSNR/L 2020K-09	20.0	20.0	125.00	25.0	25.0	-5.5	-5.5	SNMG 0904
PSSNR/L 2525M-09	25.0	25.0	150.00	25.0	25.0	-5.5	-5.5	SNMG 0904

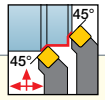
Spare Parts

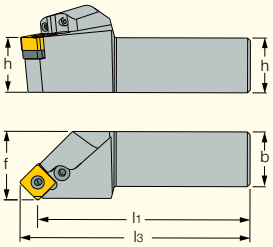
Designation	Seat	Seat 1	Spring Pin	Lever	Screw	Key	Punch
PSSNR/L 2020K-09	TSN 323	TSN 333	SP 3	LR 3	SR 117-2014	HW 2.5	PN 3-3L
PSSNR/L 2525M-09	TSN 323	TSN 333	SP 3	LR 3	SR 117-2014	HW 2.5	PN 3-3L

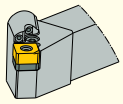
ISOTURN • JETCUT • FLASHTURN ECO LINE

PSSNR/L-JHP

Lever Lock 45° Longitudinal and Facing Tools for Negative Square Inserts with Channels for High Pressure Coolant







Inside coolant for PSSNR/L... 09

Right-hand shown

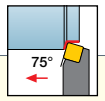
Designation	h	b	l_1	l_2	f	G_a°	G_r°	L_3	Insert
PSSNR/L 2020K-09-JHP	20.0	20.0	125.00	35.0	25.0	-5.5	-5.5	131.40	SNMG 09..

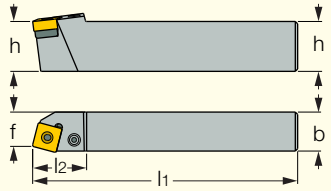
Spare Parts

Designation	Seat	Seat 1	Spring Pin	Punch	Lever	Screw	Key
PSSNR/L 2020K-09-JHP	TSN 323	TSN 333	SP 3	PN 3-3L	LR 3	SR 117-2014	HW 2.5

PSBNR/L

75° Lead Angle Lever Lock External Turning Tools for ISO Negative SNMG Inserts





Right-hand shown

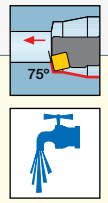
Designation	h	b	l_1	l_2	f	G_a°	G_r°	Insert
PSBNR/L 2020K-09	20.0	20.0	125.00	20.0	17.0	-6	-6	SNMG 0904
PSBNR/L 2525M-09	25.0	25.0	150.00	20.0	22.0	-6	-6	SNMG 0904

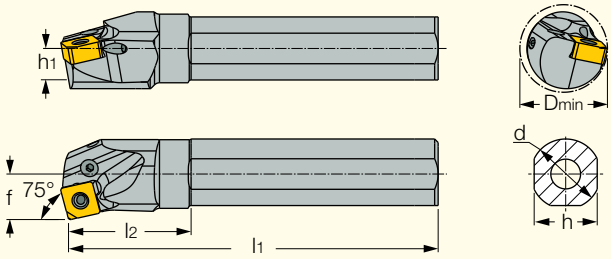
Spare Parts

Designation	Seat	Seat 1	Spring Pin	Punch	Lever	Screw	Key
PSBNR/L 2020K-09	TSN 323	TSN 333	SP 3	PN 3-3L	LR 3	SR 117-2014	HW 2.5
PSBNR/L 2525M-09	TSN 323	TSN 333	SP 3	PN 3-3L	LR 3	SR 117-2014	HW 2.5

A-PSKNR/L-09

Lever Lock Boring Bars for 90° Negative Square Inserts





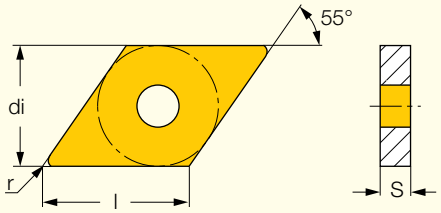
Designation	d	l_1	l_2	h	h_1	f	G_a°	G_r°	D min	Insert
A25R PSKNR/L-09	25.00	200.00	35.0	23.0	11.5	17.0	-6	-15	32.00	SNMG 0903 SNMG 0904
A32S PSKNR/L-09	32.00	250.00	43.0	30.0	15.0	22.0	-6	-13	40.00	SNMG 0903 SNMG 0904

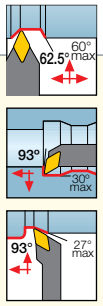
Spare Parts

Designation	Seat	Seat 1	Spring Pin	Punch	Lever	Screw	Key	Fitting
A25R PSKNR/L-09	TSN 323	TSN 333	SP 3	PN 3-3L	LR 3	SR 117-2014	HW 2.5	PL 25
A32S PSKNR/L-09	TSN 323	TSN 333	SP 3	PN 3-3L	LR 3	SR 117-2014	HW 2.5	PL 32

DNMG-F3P

Double-Sided 55° Rhombic Inserts for Semi-Finishing and Finishing of Steel

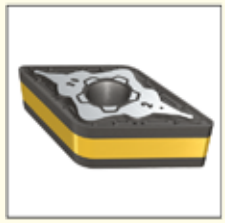


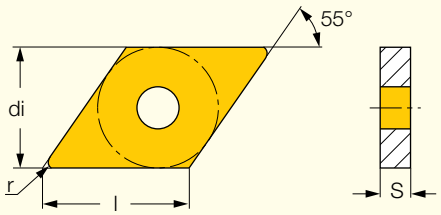


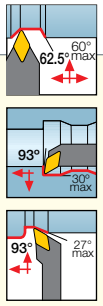
Designation	Dimensions l	di	S	r	Tough ↔ Hard IC830	IC8250	IC8150	IC807	Recommended Machining Data a_p (mm)	f (mm/rev)
DNMG 110404-F3P	11.63	9.52	4.76	0.40	•	•	•	•	0.80-3.00	0.07-0.25
DNMG 110408-F3P	11.63	9.52	4.76	0.80	•	•	•	•	1.00-3.50	0.08-0.25
DNMG 110412-F3P	11.63	9.52	4.76	1.20	•	•	•	•	1.40-4.00	0.10-0.25

DNMG-M3P

Double-Sided 55° Rhombic Inserts for Medium Machining Conditions on Steel



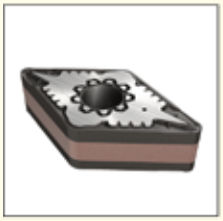


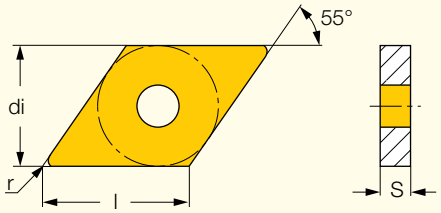


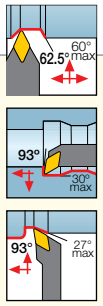
Designation	Dimensions l	di	S	r	Tough ↔ Hard IC830	IC8250	IC8150	IC807	Recommended Machining Data a_p (mm)	f (mm/rev)
DNMG 110408-M3P	11.63	9.52	4.76	0.80	•	•	•	•	0.50-5.00	0.15-0.50
DNMG 110412-M3P	11.63	9.52	4.76	1.20	•		•	•	0.80-5.00	0.18-0.60

DNMG-F3M

Double-Sided 55° Rhombic Inserts, for Finish Turning of Stainless and Low Carbon Steel



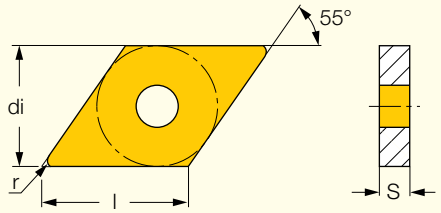


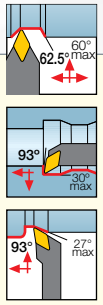


Designation	Dimensions l	di	S	r	Tough ↔ Hard IC830	IC6025	IC6015	IC806	IC807	Recommended Machining Data a_p (mm)	f (mm/rev)
DNMG 110404-F3M	11.63	9.52	4.76	0.40	•	•	•	•	•	0.10-1.50	0.05-0.32
DNMG 110408-F3M	11.63	9.52	4.76	0.80	•	•	•	•	•	0.10-1.50	0.10-0.42
DNMG 110412-F3M	11.63	9.52	4.76	1.20		•	•	•	•	0.15-2.00	0.15-0.52

DNMG-M3M

Double-Sided 55° Rhombic Inserts for Machining Stainless and Low Carbon Steel

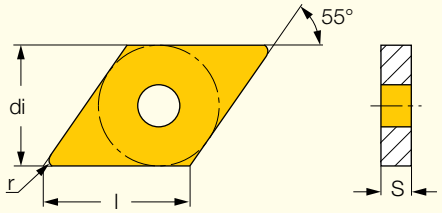


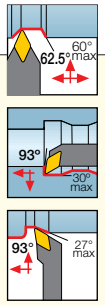


Designation	Dimensions l	di	S	r	Tough ↔ Hard IC830	IC6025	IC6015	IC806	IC807	Recommended Machining Data a_p (mm)	f (mm/rev)
DNMG 110404-M3M	11.63	9.52	4.76	0.40	•	•	•	•	•	0.50-3.50	0.12-0.40
DNMG 110408-M3M	11.63	9.52	4.76	0.80	•	•	•	•		0.50-4.00	0.15-0.50
DNMG 110412-M3M	11.63	9.52	4.76	1.20	•	•	•	•	•	0.50-4.00	0.20-0.60

DNMG-GN

Double-Sided 55° Rhombic Inserts for General Applications

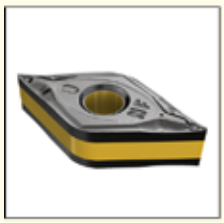


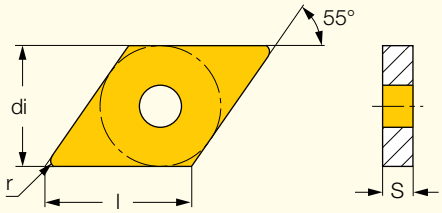


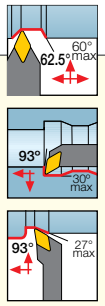
Designation	Dimensions l	di	S	r	Tough ↔ Hard IC8250	IC8150	IC5010	Recommended Machining Data a_p (mm)	f (mm/rev)
DNMG 110408-GN	0.00	0.00	0.00	0.00	●	●	●	0.00-0.00	0.00-0.00
DNMG 110412-GN	11.63	9.52	4.76	1.20	●	●		1.50-4.50	0.18-0.38

DNMG-NF

Double-Sided 55° Rhombic Inserts for Semi-Finishing and Finishing Applications



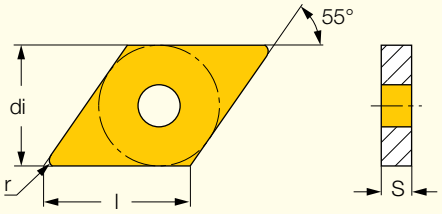


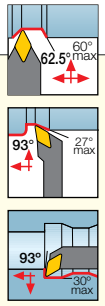


Designation	Dimensions l	di	S	r	Tough ↔ Hard IC830	IC8350	IC8250	IC530N	IC8150	IC20N	IC520N	IC5010	IC807	IC907	Recommended Machining Data a_p (mm)	f (mm/rev)
DNMG 110402-NF	11.63	9.52	4.76	0.20		●	●		●	●			●	●	0.40-2.50	0.07-0.18
DNMG 110404-NF	11.63	9.52	4.76	0.40	●		●		●	●	●	●	●	●	0.80-3.00	0.07-0.25
DNMG 110408-NF	11.63	9.52	4.76	0.80	●		●	●	●	●			●	●	1.00-3.50	0.08-0.25

DNMG-TF

Double-Sided 55° Rhombic Inserts for Machining a Wide Range of Materials at Medium Cutting Conditions

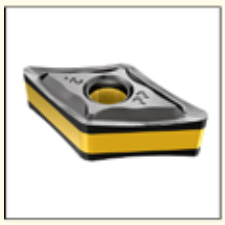


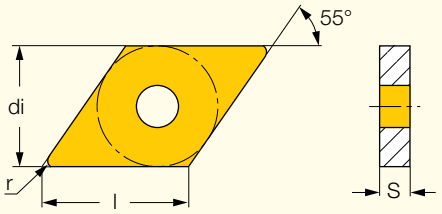


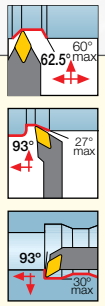
Designation	Dimensions l	di	S	r	Tough ↔ Hard IC8250	IC530N	IC20	Recommended Machining Data a_p (mm)	f (mm/rev)
DNMG 110404-TF	11.63	9.52	4.76	0.40	•	•	•	1.00-3.00	0.12-0.30
DNMG 110412-TF	11.63	9.52	4.76	1.20	•			1.50-4.00	0.15-0.35

DNMG-PP

55° Double-Sided Rhombic Inserts for Machining Very Ductile Materials at Medium Cutting Conditions



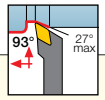


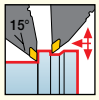


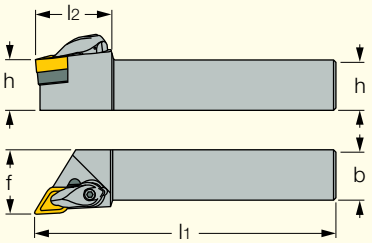
Designation	Dimensions l	di	S	r	Tough ↔ Hard IC8350	IC8250	IC10	IC8150	IC20	Recommended Machining Data a_p (mm)	f (mm/rev)
DNMG 110404-PP	11.63	9.52	4.76	0.40	•	•			•	0.40-3.00	0.12-0.30
DNMG 110408-PP	11.63	9.52	4.76	0.80		•	•	•		1.00-3.50	0.12-0.30

DDJNR/L

R-Clamp Toolholders with 93° Lead Angle for 55° Negative Rhombic Inserts







Right-hand shown

Designation	h	b	l_1	l_2	f	G_a°	G_r°	Insert
DDJNR/L 1616H-11	16.0	16.0	100.00	30.0	20.0	-7	-6	DNMG 1104
DDJNR/L 2020K-11	20.0	20.0	125.00	30.0	25.0	-6	-6	DNMG 1104
DDJNR/L 2525M-11	25.0	25.0	150.00	30.0	32.0	-6	-6	DNMG 1104

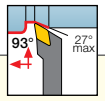
Spare Parts

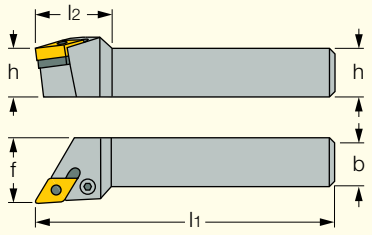
Designation	Seat	Seat Screw	Clamp	Right-Left Screw	Key	Clamp Spring
DDJNR/L 1616H-11	RDT 3-2	SR 40085I	LCGR-3	SR RC3	HW 2.5	KSP 3
DDJNR/L 2020K-11	RDT 3-2	SR 40085I	LCGR-3	SR RC3	HW 2.5	KSP 3
DDJNR/L 2525M-11	RDT 3-2	SR 40085I	LCGR-3	SR RC3	HW 2.5	KSP 3

* (Optional, should be ordered separately)

PDJNR/L

Lever Lock Toolholders for 55° Negative Rhombic Inserts





Right-hand shown

Designation	h	b	l_1	l_2	f	G_a°	G_r°	Insert
PDJNR/L 1616H-11	16.0	16.0	100.00	30.0	20.0	-6	-7	DNMG 1104
PDJNR/L 2020K-11	20.0	20.0	125.00	30.0	25.0	-6	-7	DNMG 1104
PDJNR/L 2525M-11	25.0	25.0	150.00	30.0	32.0	-6	-7	DNMG 1104

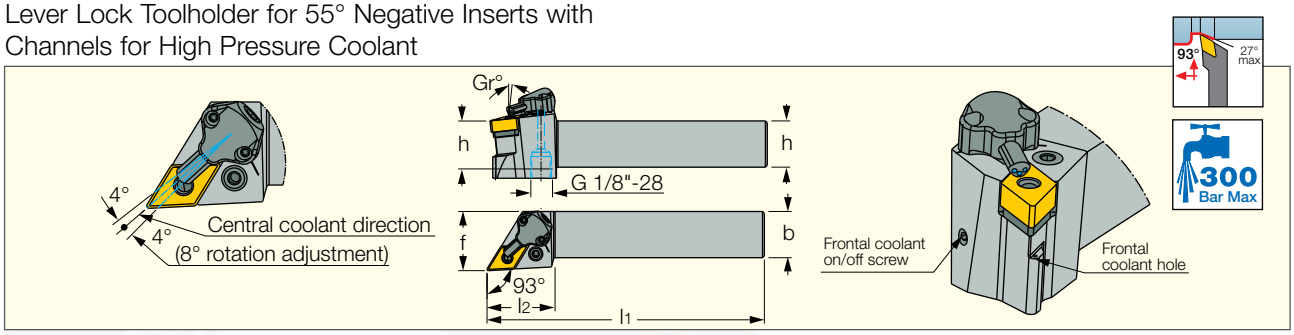
Spare Parts

Designation	Seat	Spring Pin	Punch	Lever	Screw	Hex Flag Key
PDJNR/L 1616H-11	TDN 322	SP 3	PN 3-4	LR 3D	SR 117-2014	HW 2.5/5
PDJNR/L 2020K-11	TDN 322	SP 3	PN 3-4	LR 3D	SR 117-2014	HW 2.5/5
PDJNR/L 2525M-11	TDN 322	SP 3	PN 3-4	LR 3D	SR 117-2014	HW 2.5/5

* (Optional, should be ordered separately)

PDJNR/L-JHP

Lever Lock Toolholder for 55° Negative Inserts with Channels for High Pressure Coolant



Designation	b	h	l_1	l_2	f	G_a°	G_r°	Insert
PDJNR/L 2525M-11-JHP	25.0	25.0	150.00	36.0	32.0	-6	-7	DNMG 1104

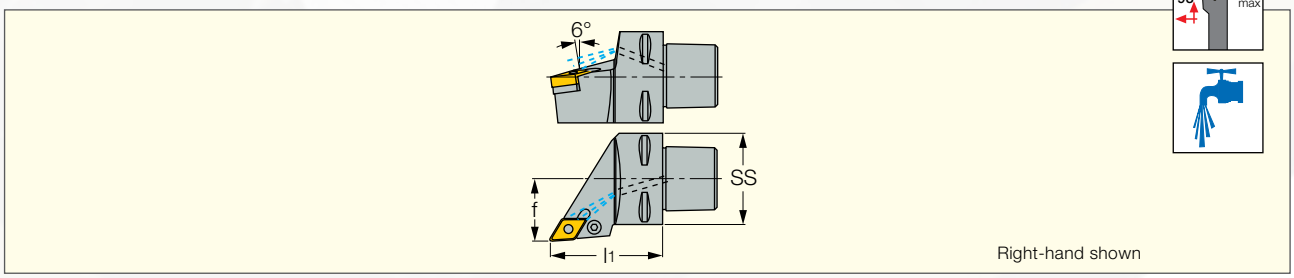
Spare Parts

Designation	Seat	Punch	Lever	Screw	Spring Pin	Cooling Unit	Plug	Key	Hex Flag Key
PDJNR/L 2525M-11-JHP	TDN 322	PN 3-4	LR 3D	SR 117-2014	SP 3	CU-D-JHP	SR M4X4 DIN913 TL360	HW 2.0	HW 2.5

* (Optional, should be ordered separately)

C#-PDJNR

93° Lead Angle Tools, for 55° Negative Inserts with CAMFIX Exchangeable Shanks



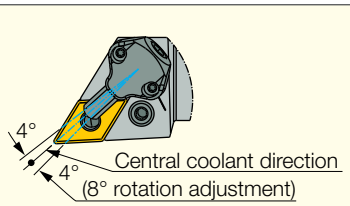
Designation	SS	f	l_1	Insert
C5 PDJNR-35060-11	50	35.0	60.00	DNMG 1104

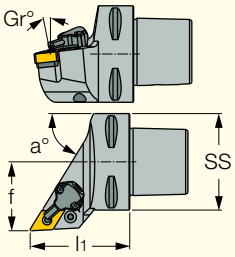
Spare Parts

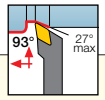
Designation	Seat	Spring Pin	Punch	Lever	Screw	Cooling Nozzle	Hex Flag Key
C#-PDJNR	TDN 322	SP 3	PN 3-4	LR 3D	SR 117-2014	EZ 104	HW 2.5/5

C#-PDJNR/L-JHP

Lever Lock Tools for Negative 55° Inserts with CAMFIX Exchangeable Heads and Channels for High Pressure Coolant







Designation	SS	f	l_1	G_a°	G_r°	a°	Insert
C3 PDJNR-22045-11-JHP	32	22.0	45.00	-6	-6	58	DN.. 11..
C4 PDJNR/L 27050-11-JHP	40	27.0	55.00	-6	-6	58	DN.. 11..
C5 PDJNR/L 35060-11-JHP	50	35.0	60.00	-6	-6	58	DN.. 11..

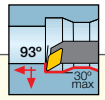
Spare Parts

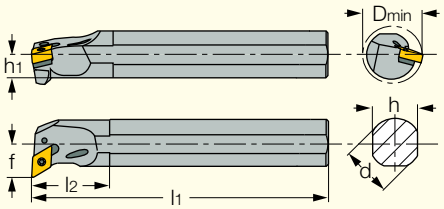
Designation	Seat	Lever	Screw	Spring Pin	Punch	Cooling Unit	Key	Hex Flag Key
C3 PDJNR-22045-11-JHP	TDN 322	LR 3D	SR 117-2014	SP 3	PN 3-4	CU-D-JHP	T-8/5	HW 2.5/5
C4 PDJNR/L 27050-11-JHP	TDN 322	LR 3D	SR 117-2014	SP 3	PN 3-4	CU-D-JHP	T-8/5	HW 2.5/5
C5 PDJNR/L 35060-11-JHP	TDN 322	LR 3D	SR 117-2014	SP 3	PN 3-4	CU-D-JHP	T-8/5	HW 2.5/5

* (Optional, should be ordered separately)

A/S-PDUNR/L

Lever Lock Boring Bars for 55° Negative Rhombic Inserts





Right-hand shown

Designation	d	l_1	l_2	h	h_1	f	G_a°	G_r°	D min		Insert
A20Q PDUNR/L-11	20.00	180.00	35.0	18.0	9.2	16.0	-6	-14	27.00	Y	DNMG 1104
A25R PDUNR/L-11	25.00	200.00	40.0	23.0	11.5	17.0	-6	-13	32.00	Y	DNMG 1104
A32S PDUNR/L-11	32.00	250.00	45.0	29.0	14.5	22.0	-6	-11	40.00	Y	DNMG 1104

Spare Parts

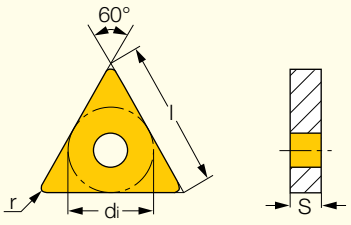
Designation	Seat	Spring Pin	Lever	Screw	Hex Flag Key	Fitting	Punch
A20Q PDUNR/L-11			LR 3DS	SR 117-2011	HW 2.5/5	PL 20	
A25R PDUNR/L-11	TDN 3P2	SP 3	LR 3D	SR 117-2014	HW 2.5/5	PL 25	PN 3-4
A32S PDUNR/L-11	TDN 322	SP 3	LR 3D	SR 117-2014	HW 2.5/5	PL 32	PN 3-4

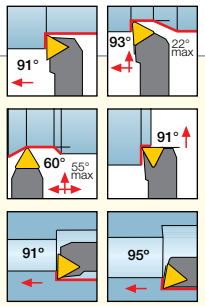
* (Optional, should be ordered separately)

(

TNMG-F3P

Double-Sided Triangular Inserts for Semi-Finishing and Finishing Applications

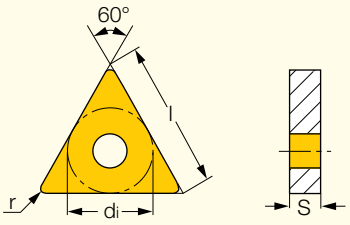


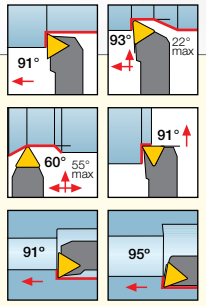


Designation	Dimensions l	di	S	r	Tough ↔ Hard IC830	IC8250	IC8150	IC807	Recommended Machining Data a_p (mm)	f (mm/rev)
TNMG 160404-F3P	16.50	9.52	4.76	0.40	•	•	•	•	0.50-2.00	0.07-0.25
TNMG 160408-F3P	16.50	9.52	4.76	0.80	•	•	•	•	0.90-3.00	0.08-0.25
TNMG 160412-F3P	16.50	9.52	4.76	1.20	•	•	•	•	1.30-4.00	0.10-0.25

TNMG-M3P

Double-Sided Triangular Inserts for Medium Machining Conditions on Steel

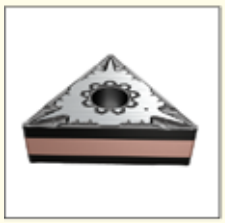


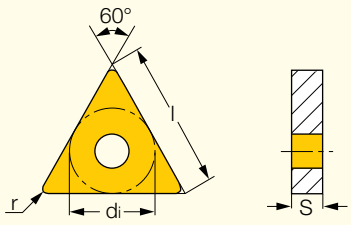


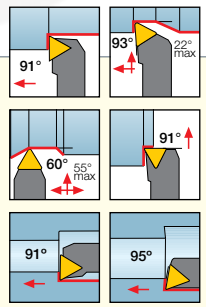
Designation	Dimensions l	di	S	r	Tough ↔ Hard IC830	IC8250	IC8150	IC807	Recommended Machining Data a_p (mm)	f (mm/rev)
TNMG 160404-M3P	16.50	9.52	4.76	0.40	•	•	•	•	0.40-5.00	0.10-0.30
TNMG 160408-M3P	16.50	9.52	4.76	0.80	•	•	•	•	0.50-5.00	0.15-0.50
TNMG 160412-M3P	16.50	9.52	4.76	1.20	•	•	•	•	0.80-5.00	0.18-0.60

TNMG-F3M

Double-Sided Triangular Inserts, for Finish Turning of Stainless and Low Carbon Steel





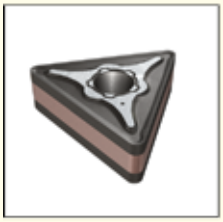


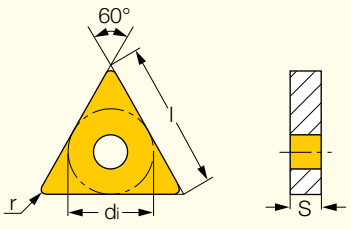
Designation	Dimensions l	di	S	r	Tough ↔ Hard IC830	IC6025	IC6015	IC20N	IC520N	IC806	IC807	IC804	Recommended Machining Data a_p (mm)	f (mm/rev)
TNMG 160404-F3M	16.50	9.52	4.76	0.40	•	•	•	•	•	•	•		0.10-1.50	0.05-0.32
TNMG 160408-F3M	16.50	9.52	4.76	0.80	•	•	•	•	•	•	•	•	0.10-1.50	0.10-0.42
TNMG 160412-F3M	16.50	9.52	4.76	1.20	•	•	•			•	•		0.15-2.00	0.15-0.52

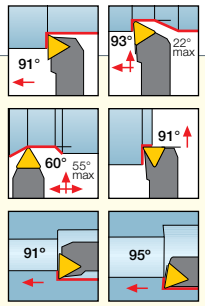
ISOTURN • FLASHTURN ECO LINE

TNMG-M3M

Double-Sided Triangular Inserts, for Machining Stainless and Low Carbon Steel





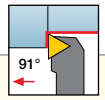


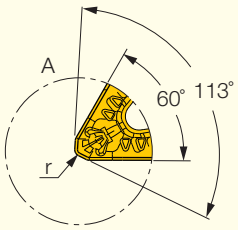
Designation	Dimensions l	di	S	r	Tough ↔ Hard IC830	IC5500	IC6025	IC6015	IC807	IC804	Recommended Machining Data a_p (mm)	f (mm/rev)
TNMG 160404-M3M	16.50	9.52	4.76	0.40	•				•		0.50-4.00	0.15-0.50
TNMG 160408-M3M	16.50	9.52	4.76	0.80	•	•	•	•	•	•	0.50-4.00	0.15-0.50
TNMG 160412-M3M	16.50	9.52	4.76	1.20	•		•	•	•		0.50-4.00	0.20-0.60

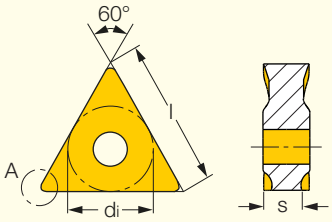
HELITURN LD • FLASHTURN ECO LINE

TNMX-M3PW

Double-Sided Triangular Inserts with High Helical Cutting Edge for High Metal Removal Rates of Steel



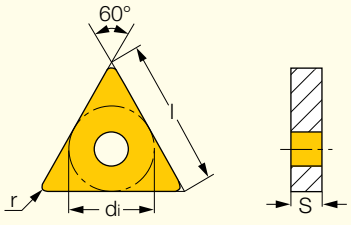


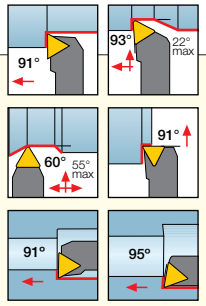


Designation	Dimensions l	di	S	r	Tough ↔ Hard IC830	IC8250	IC8150	Recommended Machining Data a_p (mm)	f (mm/rev)
TNMX 160604-M3PW	16.50	9.52	4.40	0.40	•	•	•	2.00-5.00	0.25-0.40
TNMX 160608-M3PW	16.50	9.52	4.40	0.80	•	•	•	2.50-5.50	0.30-0.50

TNMG-GN

Double-Sided Triangular Inserts for General Applications

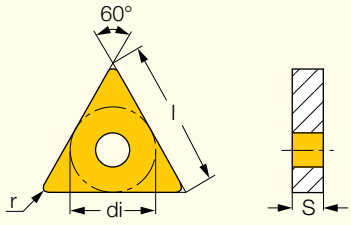


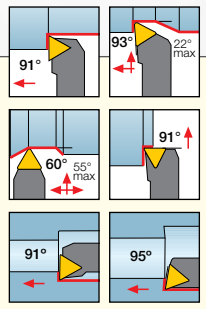


Designation	Dimensions l	di	S	r	Tough ↔ Hard IC830	IC8350	IC8250	IC8150	IC20	IC5010	IC428	IC5005	IC807	IC907	Recommended Machining Data a_p (mm)	f (mm/rev)
TNMG 160404-GN	16.50	9.52	4.76	0.40							•	•			1.00-3.00	0.12-0.30
TNMG 160408-GN	16.50	9.52	4.76	0.80	•	•	•	•	•	•	•	•	•	•	1.00-3.50	0.18-0.39
TNMG 160412-GN	16.50	9.52	4.76	1.20			•	•							1.50-4.00	0.18-0.43

TNMG-NF

Double-Sided Triangular Inserts for Semi-Finishing and Finishing Applications

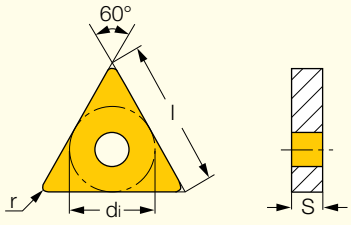


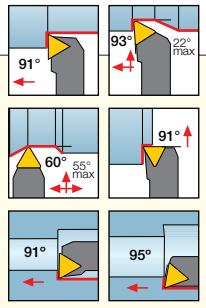


Designation	Dimensions l	di	S	r	Tough ↔ Hard IC8250	IC8150	Recommended Machining Data a_p (mm)	f (mm/rev)
TNMG 160408-NF	16.50	9.52	4.76	0.80	•	•	1.00-3.00	0.08-0.25

TNMG-PF

Triangular Double-Sided Inserts for Finishing Applications on Alloyed and Stainless Steel

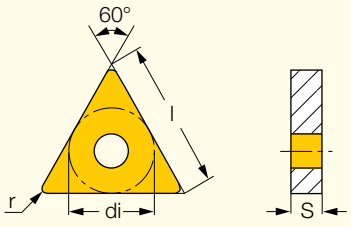


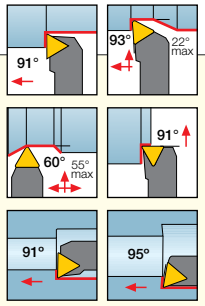


Designation	Dimensions l	di	S	r	IC8150	Recommended Machining Data a_p (mm)	f (mm/rev)
TNMG 160408-PF	16.50	9.52	4.76	0.80	•	0.80-3.00	0.08-0.30

TNMG-SF

Triangular Double-Sided Inserts for Super-Finishing; Controls Chip Flow at Very Low Feeds and Depths of Cut

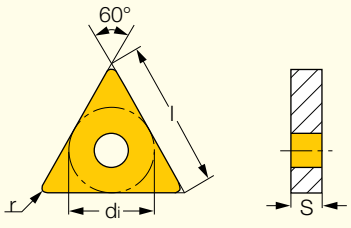


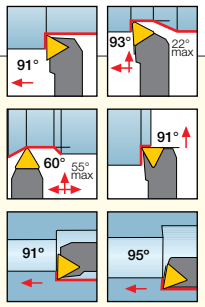


Designation	Dimensions l	di	S	r	Tough ↔ Hard IC8250	IC530N	IC520N	Recommended Machining Data a_p (mm)	f (mm/rev)
TNMG 160404-SF	16.50	9.52	4.76	0.40		●	●	0.40-2.00	0.04-0.25
TNMG 160408-SF	16.50	9.52	4.76	0.80	●	●		1.00-3.00	0.06-0.30

TNMG-TF

Double-Sided Triangular Inserts for Machining a Wide Range of Materials at Medium Cutting Conditions

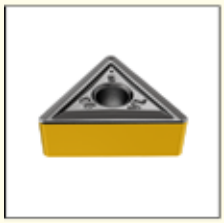


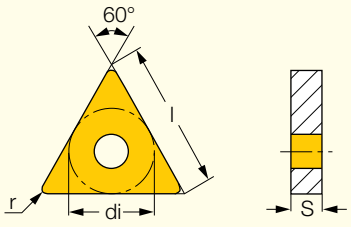


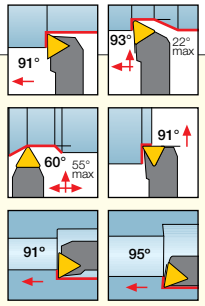
Designation	Dimensions l	di	S	r	Tough ↔ Hard IC830	IC8250	IC908	IC6015	IC8150	IC20	IC20N	IC806	IC807	IC907	Recommended Machining Data a_p (mm)	f (mm/rev)
TNMG 160304-TF	16.50	9.52	3.18	0.40		●									1.00-3.00	0.12-0.30
TNMG 160308-TF	16.50	9.52	3.18	0.80										●	1.00-3.00	0.12-0.30
TNMG 160404-TF	16.50	9.52	4.76	0.40	●	●		●	●	●		●	●	●	1.00-3.00	0.12-0.30
TNMG 160408-TF	16.50	9.52	4.76	0.80		●	●	●	●		●	●	●	●	1.00-3.00	0.12-0.30
TNMG 160412-TF	16.50	9.52	4.76	1.20		●			●				●	●	1.00-5.00	0.12-0.40

TNMG-VL

Double-Sided Triangular Inserts with a Chipformer for High Temperature Alloys and Stainless Steel Valves



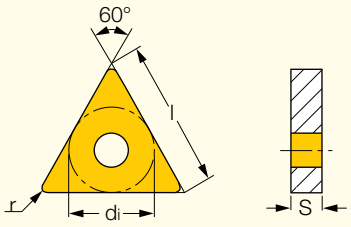


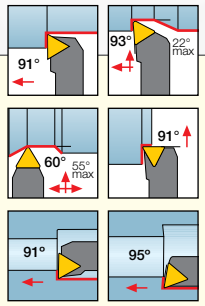


Designation	Dimensions l	di	S	r	Tough ↔ Hard IC908	IC806	IC807	IC907	Recommended Machining Data a_p (mm)	f (mm/rev)
TNMG 160404-VL	16.50	9.52	4.76	0.40		•			0.80-3.50	0.10-0.25
TNMG 160408-VL	16.50	9.52	4.76	0.80	•	•	•	•	0.80-3.50	0.10-0.25

TNMG/TNGG-PP

Double-Sided Triangular Inserts for Machining Very Ductile Materials at Medium Cutting Conditions

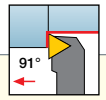


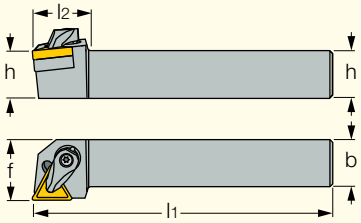


Designation	Dimensions l	di	S	r	Tough ↔ Hard IC830	IC8350	IC8250	IC8150	IC20	IC907	Recommended Machining Data a_p (mm)	f (mm/rev)
TNGG 160402-PP	16.50	9.52	4.76	0.20						•	0.50-1.50	0.05-0.25
TNMG 160404-PP	16.50	9.52	4.76	0.40		•	•		•		0.50-3.00	0.13-0.30
TNMG 160408-PP	16.50	9.52	4.76	0.80	•		•	•	•		1.00-3.00	0.12-0.30

DTGNR/L

91° Lead Angle R-Clamp External Turning Tools for Negative Triangular Inserts





Right-hand shown

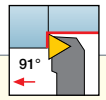
Designation	h	b	l_1	l_2	f	G_a°	G_r°	Insert
DTGNR/L 2020K-16	20.0	20.0	125.00	25.0	25.0	-6	-6	TNMG 1604
DTGNR/L 2525M-16	25.0	25.0	150.00	25.0	32.0	-6	-6	TNMG 1604

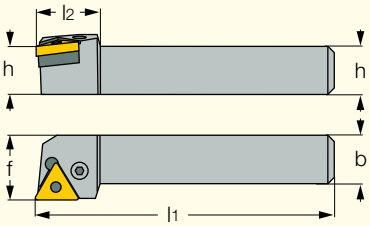
Spare Parts

Designation	Seat	Seat Screw	Clamp	Right-Left Screw 1	Key
DTGNR/L 2020K-16	RTT 322	SR 35080I	LCGR-3	SR RC3	HW 2.5
DTGNR/L 2525M-16	RTT 322	SR 35080I	LCGR-3	SR RC3	HW 2.5

PTGNR/L

91° Lead Angle Lever Lock External Turning Tools for Negative Triangular Inserts





Right-hand shown

Designation	h	b	l_1	l_2	f	G_a°	G_r°	Insert
PTGNR/L 2020K-16	20.0	20.0	125.00	22.0	25.0	-6	-6	TNMG 16..
PTGNR/L 2525M-16	25.0	25.0	150.00	22.0	32.0	-6	-6	TNMG 16..

Spare Parts

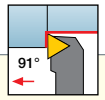
Designation	Seat	Seat 1	Spring Pin	Lever	Screw	Hex Flag Key	Punch
PTGNR/L 2020K-16	TTN 322	TTN 332[(a)]*	SP 3	LR 3	SR 117-2014	HW 2.5/5	PN 3-4
PTGNR/L 2525M-16	TTN 322	TTN 332[(a)]*	SP 3	LR 3	SR 117-2014	HW 2.5/5	PN 3-4

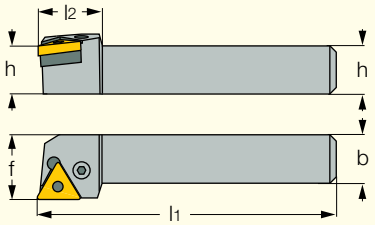
* (Optional, should be ordered separately)

(a) TTN 332 for inserts 3.18 mm thick

PTGNR/L-X

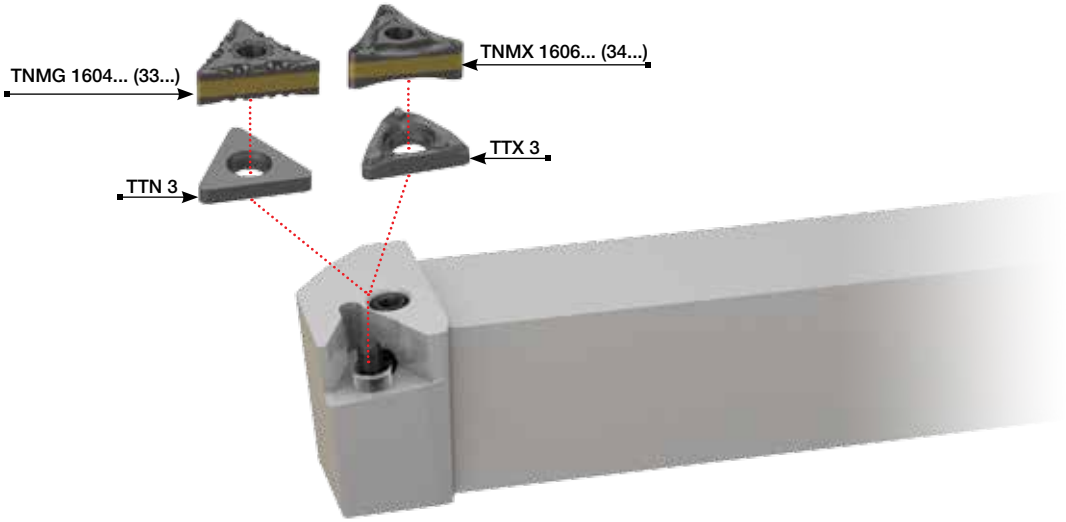
91° Lead Angle Lever Lock External Turning Tools for Negative Triangular Inserts





Right-hand shown

Designation	h	b	l_1	l_2	f	G_a°	G_r°	Insert
PTGNR/L 2020K-16X	20.0	20.0	125.00	20.0	25.0	-6	-6	TNMX 1606, TNMG 1604
PTGNR/L 2525M-16X	25.0	25.0	150.00	20.0	32.0	-6	-6	TNMX 1606, TNMG 1604

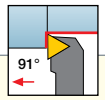


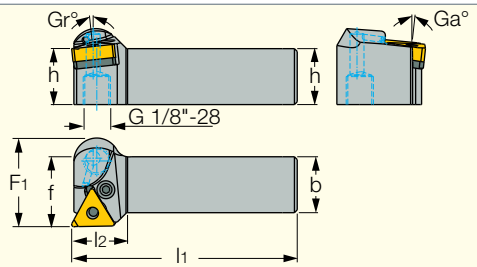
Spare Parts

Designation	Seat	Seat 1	Spring Pin	Lever	Screw	Key	Punch
PTGNR/L 2020K-16X	TTX 3	TTN 3	SP 3	LR 3	SR 117-2014	HW 2.5	PN 3-4
PTGNR/L 2525M-16X	TTX 3	TTN 3	SP 3	LR 3	SR 117-2014	HW 2.5	PN 3-4

PTGNR/L-X-JHP

91° Lead Angle Lever Lock External Turning Tools for Negative Triangular Inserts with Channels for High Pressure Coolant





Right-hand shown

Designation	h	b	l_1	l_2	f	F_1	G_a°	G_r°	Insert
PTGNR/L 2020K-16X-JHP	20.0	20.0	125.00	20.0	25.0	31.7	-6	6	TNMX 1606, TNMG 1604
PTGNR/L 2525M-16X-JHP	25.0	25.0	150.00	20.0	32.0	-	-6	6	TNMX 1606, TNMG 1604

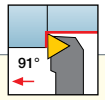
• Supplied with TTX 3 seat for TNMX 1606.. inserts and TTN 3 seat for TNMG 1604.. inserts.

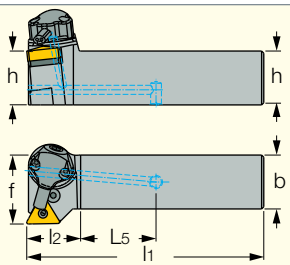
Spare Parts

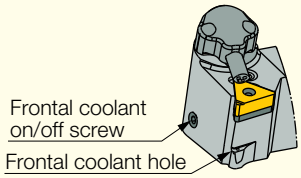
Designation	Seat	Seat 1	Spring Pin	Lever	Screw	Key	Punch
PTGNR/L-X-JHP	TTX 3	TTN 3	SP 3	LR 3	SR 117-2014	HW 2.5	PN 3-4

PTGNR/L-X-JHP-MC

Lever Lock Tools for HELITURN LD TNMX and TNMG Triangular Inserts with Bottom Inlets for High Pressure Coolant Channels

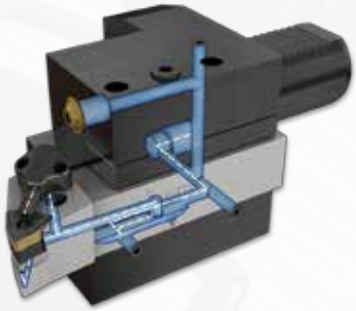






Right-hand shown

Designation	h	b	l_1	l_2	L_5	f	Insert
PTGNR/L 2020X-16X-JHP-MC	20.0	20.0	95.00	25.0	29.00	25.0	TNMX 1606, TNMG 1604
PTGNR/L 2525X-16X-JHP-MC	25.0	25.0	110.00	25.0	35.00	32.0	TNMX 1606, TNMG 1604

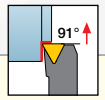


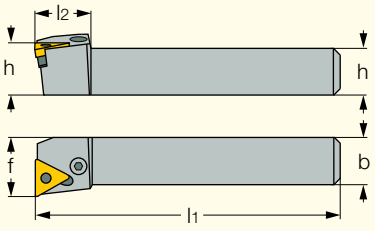
Spare Parts

Designation	Seat	Seat 1	Spring Pin	Lever	Screw	Key	Plug	Punch	Key 1	Cooling Unit
PTGNR/L-X-JHP-MC	TTX 3	TTN 3	SP 3	LR 3	SR 117-2014	T-8/5	SR M5X5 DIN913 TL360	PN 3-4	HW 2.5	CU-S-JHP

PTFNR/L

91° Lead Angle Lever Lock Face Turning Tools for Negative Triangular Inserts





Right-hand shown

Designation	h	b	l_1	l_2	f	G_a°	G_r°	Insert
PTFNR/L 2020K-16	20.0	20.0	125.00	20.0	25.0	-6	-6	TNMG 16..
PTFNR/L 2525M-16	25.0	25.0	150.00	20.0	32.0	-6	-6	TNMG 16..

Spare Parts

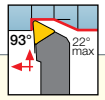
Designation	Seat	Seat 1	Lever	Screw	Hex Flag Key	Spring Pin	Punch
PTFNR/L 2020K-16	TTN 322	TTN 332[(a)*]	LR 3	SR 117-2014	HW 2.5/5	SP 3	PN 3-4
PTFNR/L 2525M-16	TTN 322	TTN 332[(a)*]	LR 3	SR 117-2014	HW 2.5/5	SP 3	PN 3-4

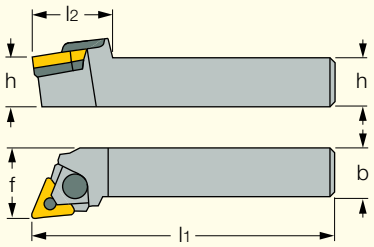
* (Optional, should be ordered separately)

(a) TTN 332 for inserts 3.18 mm thick.

MTJNR/L-W

93° Lead Angle Wedge Lock Turning Tools for Negative Triangular Inserts





Right-hand shown

Designation	h	b	l_1	l_2	f	G_a°	G_r°	Insert
MTJNR/L 1616H-16W-M	16.0	16.0	100.00	32.0	20.0	-6	-6	TNMG 1604
MTJNR/L 2020K-16W-M	20.0	20.0	125.00	32.0	25.0	-6	-6	TNMG 1604
MTJNR/L 2525M-16W-M	25.0	25.0	150.00	32.0	32.0	-6	-6	TNMG 1604

Spare Parts

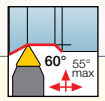
Designation	Seat	Seat 1	Locking Pin	Wedge Clamp	Ring	Wedge Screw	Key 1
MTJNR/L 1616H-16W-M	TTT 322N	TTT 332N[(a)*]	ZNW 3WNS	LC 291N CLAMP	E RING N	SR 17-317NS	HW 3.0
MTJNR/L 2020K-16W-M	TTT 322N	TTT 332N[(a)*]	ZNW 3WN	LC 291N CLAMP	E RING N	SR 17-317N	HW 3.0
MTJNR/L 2525M-16W-M	TTT 322N	TTT 332N[(a)*]	ZNW 3WN	LC 291N CLAMP	E RING N	SR 17-317N	HW 3.0

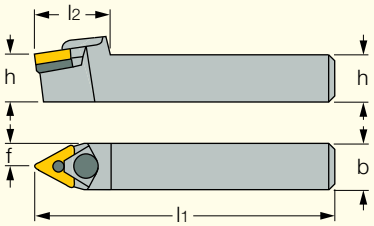
* (Optional, should be ordered separately)

(a) Use for inserts TNMG 1603.. 3.18 mm thick

MTENN-W

Neutral Wedge Lock Toolholders for Negative Triangular Inserts





Designation	h	b	l_1	l_2	f	G_a°	G_r°	Insert
MTENN 1618H-16W-M	16.0	18.0	100.00	32.0	9.0	0	-8	TNMG 1604
MTENN 2020K-16W-M	20.0	20.0	125.00	35.0	10.0	0	-8	TNMG 1604
MTENN 2525M-16W-M	25.0	25.0	150.00	32.0	12.5	0	-8	TNMG 1604

Spare Parts

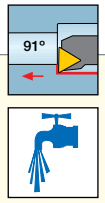
Designation	Seat	Seat 1	Locking Pin	Wedge Clamp	Ring	Wedge Screw	Key 1
MTENN 1618H-16W-M	TTT 322N	TTT 332N[(a)*]	ZNW 3WNS	LC 291N CLAMP	E RING N	SR 17-317NS	H-W 3
MTENN 2020K-16W-M	TTT 322N	TTT 332N[(a)*]	ZNW 3WN	LC 291N CLAMP	E RING N	SR 17-317N	H-W 3
MTENN 2525M-16W-M	TTT 322N	TTT 332N[(a)*]	ZNW 3WN	LC 291N CLAMP	E RING N	SR 17-317N	H-W 3

* (Optional, should be ordered separately)

(a) Use for inserts TNMG 1603.. 3.18 mm thick

A-PTFNR/L-X/G

91° Lead Angle Lever Lock Boring Bars for Negative Triangular Inserts



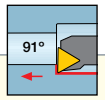
Designation	d	l_1	l_2	h	f	G_a°	G_r°	D min	Insert
A16M PTFNR/L-16G	16.00	150.00	31.0	15.0	11.0	-12	-16	20.00	TNMG 1604
A20Q PTFNR/L-16G	20.00	180.00	31.0	18.0	13.0	-6	-14	25.00	TNMG 1604
A25S PTFNR/L-16X	25.00	250.00	37.5	23.0	17.0	-6	-14	32.00	TNMX 1606, TNMG 1604
A32T PTFNR/L-16X	32.00	300.00	48.0	29.0	22.0	-6	-12	40.00	TNMX 1606, TNMG 1604
A40U PTFNR/L-16X	40.00	350.00	50.0	36.0	27.0	-6	-12	50.00	TNMX 1606, TNMG 1604

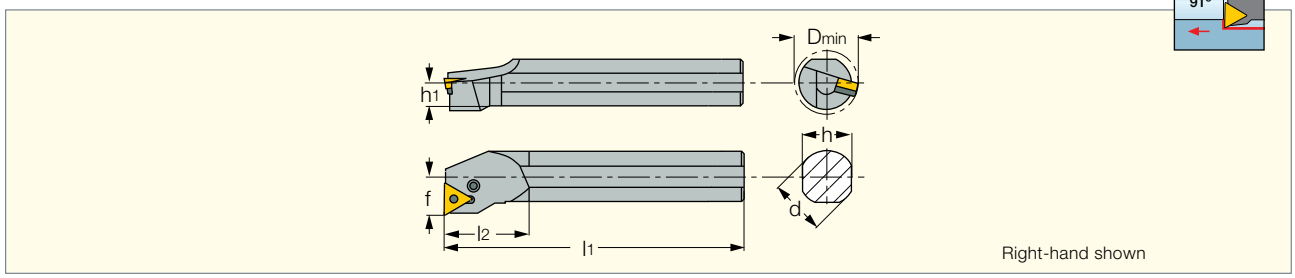
Spare Parts

Designation	Seat	Seat 1	Spring Pin	Punch	Lever	Screw	Plug	Key	Fitting
A16M PTFNR/L-16G					LR 3S	SR 117-2009		HW 2.0	PL 16
A20Q PTFNR/L-16G					LR 3S	SR 117-2009	SR M4X4 DIN913 TL360	HW 2.0	PL 20
A25S PTFNR/L-16X	TTX 3	TTN 3	SP 3	PN 3-4	LR 3	SR 117-2014	SR M4X4 DIN913 TL360	HW 2.5	PL 25
A32T PTFNR/L-16X	TTX 3	TTN 3	SP 3	PN 3-4	LR 3	SR 117-2014	SR M4X4 DIN913 TL360	HW 2.5	PL 32
A40U PTFNR/L-16X	TTX 3	TTN 3	SP 3	PN 3-4	LR 3	SR 117-2014	SR M4X4 DIN913 TL360	HW 2.5	PL 40

S-PTFNR/L

91° Lead Angle Lever Lock Boring Bars for Negative Triangular Inserts





Designation	d	l_1	l_2	h	h_1	f	G_a°	G_r°	D min	Insert
S25S PTFNR/L-16	25.00	250.00	48.0	23.0	11.5	17.0	-6	-13	32.50	TNMG 1604
S32T PTFNR/L-16	32.00	300.00	63.0	30.0	15.0	22.0	-6	-13	40.00	TNMG 1604
S40U PTFNR-16	40.00	350.00	30.0	36.0	18.0	27.0	-6	-10	49.00	TNMG 1604

Spare Parts

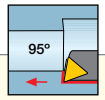
Designation	Seat	Seat 1	Spring Pin	Lever	Screw	Hex Flag Key	Punch
S25S PTFNL-16	TTN 322		SP 3	LR 3	SR 117-2014	HW 2.5/5	PN 3-4
S25S PTFNR-16	TTN 322	TTN 332[(a)]*	SP 3	LR 3	SR 117-2014	HW 2.5/5	PN 3-4
S32T PTFNL-16	TTN 322		SP 3	LR 3	SR 117-2014	HW 2.5/5	PN 3-4
S32T PTFNR-16	TTN 322	TTN 332[(a)]*	SP 3	LR 3	SR 117-2014	HW 2.5/5	PN 3-4
S40U PTFNR-16	TTN 322		SP 3	LR 3	SR 117-2014	HW 2.5/5	PN 3-4

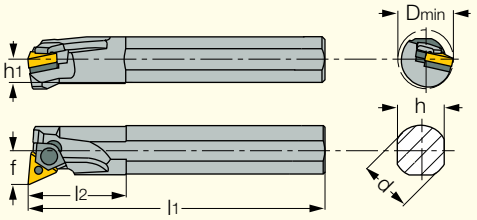
* (Optional, should be ordered separately)

(a) Use for TNMG 1603.. inserts

S-MTLNR/L-W

Wedge Lock Boring Bars for Negative Triangular Inserts





Right-hand shown

Designation	d	l_1	l_2	h	h_1	f	G_a°	G_r°	D min	Insert
S25S MTLNR/L-16W-M	25.00	250.00	40.0	23.0	11.5	17.0	-6	-12	32.00	TNMG 1604
S32T MTLNR/L-16W-M	32.00	300.00	50.0	30.0	15.0	22.0	-6	-12	40.00	TNMG 1604

Spare Parts

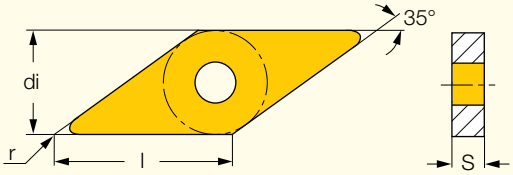
Designation	Seat	Seat 1	Locking Pin	Screw	Wedge (set)	Key 1	Ring
S25S MTLNR/L-16W-M			ZNW 3WNS	SR 17-317NS	LC 291N CLAMP	H-W 3	E RING N
S32T MTLNR/L-16W-M	TTT 322N	TTT 332N[(a)]*	ZNW 3WN	SR 17-317N	LC 291N CLAMP	H-W 3	E RING N

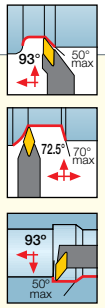
* (Optional, should be ordered separately)

(a) Use for TNMG 1603.. inserts

VNMG-F3P

Double-Sided 35° Rhombic Inserts for Semi-Finishing and Finishing Applications

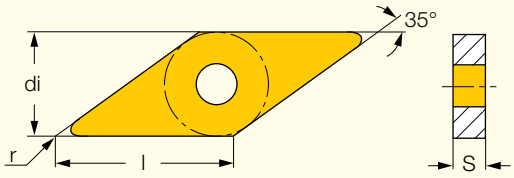


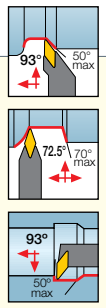


Designation	Dimensions l	di	S	r	Tough ↔ Hard IC830	IC8250	IC8150	IC807	Recommended Machining Data a_p (mm)	f (mm/rev)
VNMG 160404-F3P	0.00	0.00	0.00	0.00	•	•	•	•	1.00-3.00	0.08-0.24
VNMG 160408-F3P	16.60	9.52	4.76	0.80	•	•	•	•	1.00-3.00	0.08-0.24

VNMG-F3M

Double-sided 35° Rhombic Inserts for Stainless Steel Finishing Applications

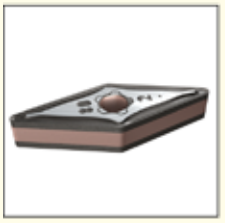


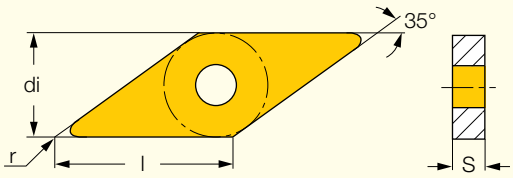


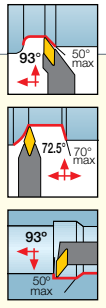
Designation	Dimensions l	di	S	r	Tough ↔ Hard IC830	IC6025	IC6015	IC807	Recommended Machining Data a_p (mm)	f (mm/rev)
VNMG 160404-F3M	16.60	9.52	4.76	0.40		•	•	•	0.10-1.50	0.05-0.30
VNMG 160408-F3M	16.60	9.52	4.76	0.80	•			•	0.10-1.50	0.05-0.30

VNMG-M3M

Double-Sided 35° Rhombic Inserts for Machining Stainless and Low Carbon Steel



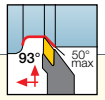


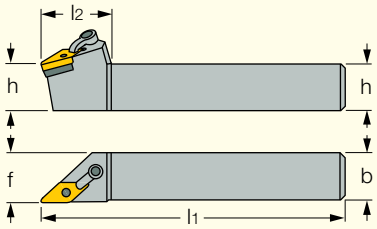


Designation	Dimensions l	di	S	r	Tough ↔ Hard IC830	IC6025	IC6015	IC806	IC4	IC804	Recommended Machining Data a_p (mm)	f (mm/rev)
VNMG 160404-M3M	16.60	9.52	4.76	0.40	•	•	•	•			0.70-3.00	0.07-0.20
VNMG 160408-M3M	16.60	9.52	4.76	0.80	•	•	•	•	•	•	0.10-1.50	0.05-0.30

MVJNR/L

Pin and Clamp Toolholders for 35° Negative Rhombic Inserts





Right-hand shown

Designation	h	b	l_1	l_2	f	G_a°	G_r°	Insert
MVJNR/L 2020K-16	20.0	20.0	125.00	41.0	25.0	-6	-10	VNMG 1604
MVJNR/L 2525M-16	25.0	25.0	150.00	41.0	32.0	-6	-10	VNMG 1604

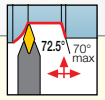
Spare Parts

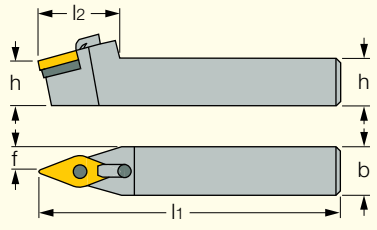
Designation	Seat	Seat 1	Seat 3	Locking Pin	Key	Right-Left Screw	Key 1
MVJNR/L	IVSN 322	IVSN 323[a]*	IYSN 322[b]*	NL 34-L	HW 2.0	XNS 510	HW 4.0

* (Optional, should be ordered separately)

MVVNN

Pin and Clamp Toolholders for 35° Negative Rhombic Inserts





Designation	h	b	l_1	l_2	f	G_a°	G_r°	Insert
MVVNN 2020K-16	20.0	20.0	125.00	48.0	10.0	-4.5	-14	VNMG 1604..
MVVNN 2525M-16	25.0	25.0	150.00	48.0	12.5	-4.5	-14	VNMG 1604..

Spare Parts

Designation	Seat	Seat 1	Seat 3	Locking Pin	Key	Clamp	Right-Left Screw	Key 1
MVVNN	IVSN 322	IVSN 323[a]*	IYSN 322[b]*	NL 34-L	HW 2.0	CL 30	XNS 510	HW 4.0

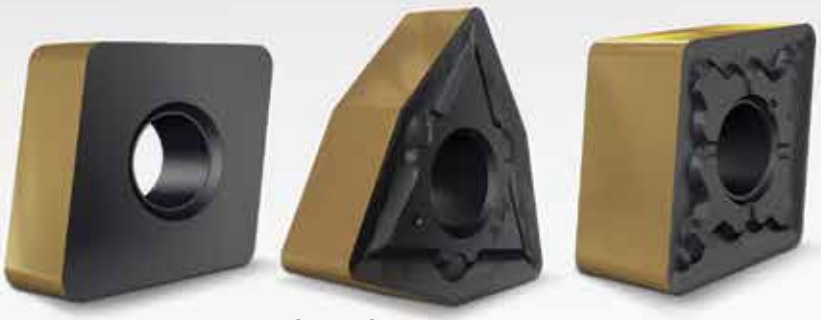
* (Optional, should be ordered separately)

(a) Use for VNMG 160412 inserts

FLASHBLACK
ISO TURNING ECO GRADES

Guaranteed Smooth Turning Performance with ISCAR's New Coating Technology

PVD Coated inserts



CVD Coated inserts

Insert Designation	SUMO TEC CVD 4005 P M K N S H ✓ ✓	SUMO TEC CVD 4010 P M K N S H ✓ ✓	SUMO TEC CVD 7250 P M K N S H ✓ ✓	SUMO TEC PVD 707 P M K N S H ✓ ✓ ✓ ✓
CNMG 120408-TF				●
CNMG 120408-M3P			●	
WNMG 080408-TF				●
WNMG 080408-M3P			●	
WNMG 080408-GN			●	
CNMA 120408	●			
CNMA 120412		●		

FLASHSOLID

ECO SOLID LINE

Identification Code

A	B	C	D	E	F	G	H	I	J
138	- 100	- 22	/ 40	W	10	- 92	- 3	R1	- A

A:
130 – Finish profile 30°
138 – Finish profile 38°
145 – Finish profile 45°
230 – Ball nose profile
338 – Chip splitter profile 38°
438 – Roughing profile 38°
445 – Roughing profile 45°
500 – Endmill for rib tools
510 – Ball nose rib tools

B:
Head diameter (mm)

C:
Depth of cut

D:
Neck relief

E:
Shank type
-: Cylindrical
W: Weldon

F:
Shank diameter

G:
Total length

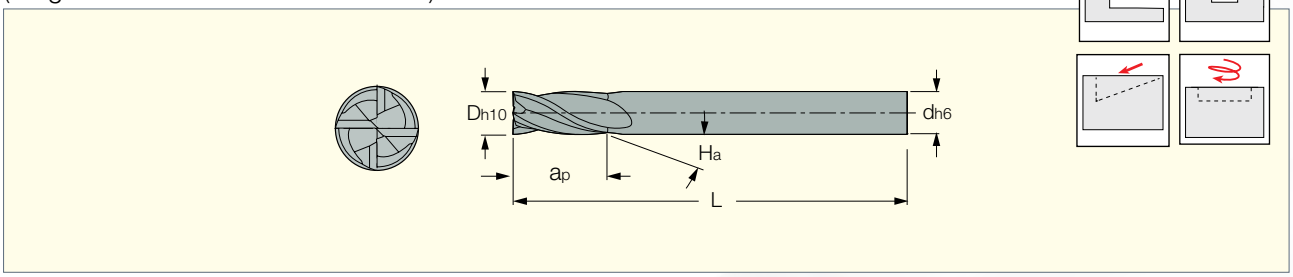
H:
Number of flutes

I :
Radius (mm)

J:
Geometry for material
A – Aluminum
P – Steel
G – General
M – Stainless Steel

145-4G

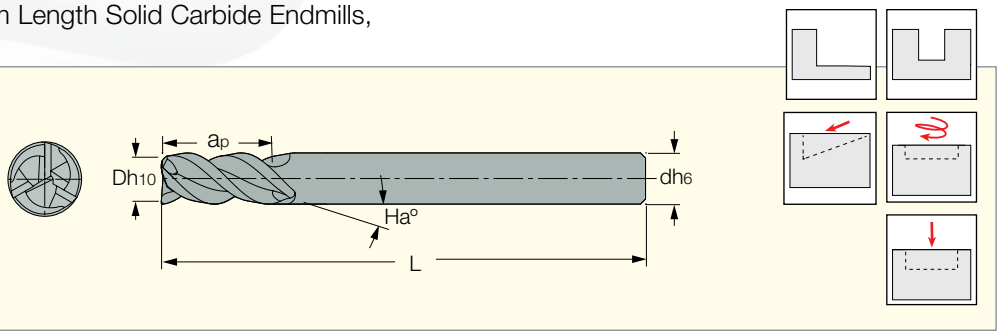
4 Flute, 45° Helix Solid Carbide Endmills
(for general use on different materials)



Designation	D	d	a_p	L	Flute	H_a°	R_d	Shank C-Cylindrical	f_z (min)	f_z (max)	Grade
145-020-07-06-57-4-G	2	6	7	57	4	45	3	C	0.01	0.03	IC900
145-030-10-03-57-4-G	3	3	10	38	4	45	3	C	0.01	0.04	IC900
145-030-10-06-57-4-G	3	6	10	57	4	45	3	C	0.01	0.04	IC900
145-040-12-04-50-4-G	4	4	12	50	4	45	3	C	0.02	0.05	IC900
145-040-12-06-57-4-G	4	6	12	57	4	45	3	C	0.02	0.05	IC900
145-050-14-05-50-4-G	5	5	14	50	4	45	3	C	0.02	0.06	IC900
145-050-14-06-57-4-G	5	6	14	57	4	45	3	C	0.02	0.06	IC900
145-060-16-06-57-4-G	6	6	16	57	4	45	4	C	0.03	0.08	IC900
145-080-20-08-63-4-G	8	8	20	63	4	45	4	C	0.03	0.08	IC900
145-100-22-10-72-4-G	10	10	22	72	4	45	5	C	0.03	0.09	IC900
145-120-25-12-83-4-G	12	12	25	83	4	45	5	C	0.03	0.1	IC900
145-160-32-16-92-4-G	16	16	32	92	4	45	5	C	0.03	0.12	IC900

145-3A

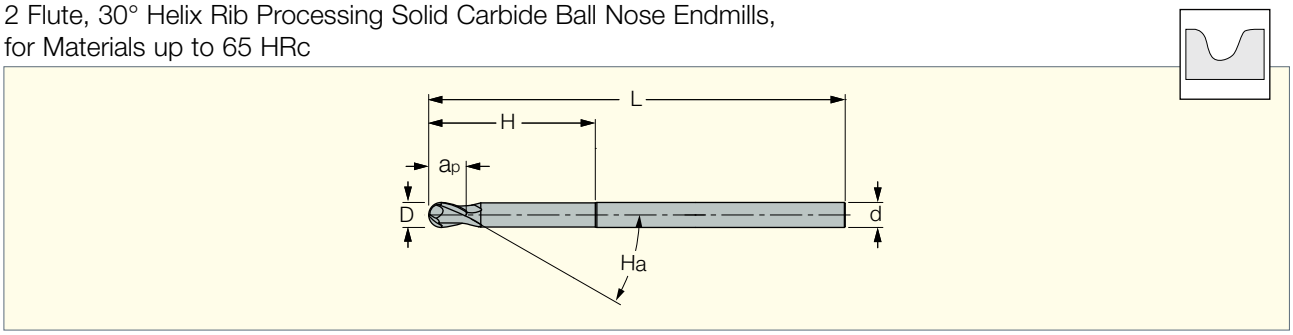
3 Flute, 45° Helix Medium Length Solid Carbide Endmills,
for Machining Aluminum



Designation	D	d	a_p	L	Flute	H_a°	R_d°	r	Shank C-Cylindrical	f_z (min)	f_z (max)	Grade
145-040-12-06-57-3-R01-A	4	6	12	57	3	45	3	0.1	C	0.02	0.05	IC08
145-050-14-06-57-3-R02-A	5	6	14	57	3	45	3	0.2	C	0.02	0.06	IC08
145-060-16-06-57-3-R02-A	6	6	16	57	3	45	4	0.2	C	0.03	0.07	IC08
145-080-20-08-63-3-R02-A	8	8	20	63	3	45	4	0.2	C	0.03	0.09	IC08
145-100-22-10-72-3-R02-A	10	10	22	72	3	45	5	0.2	C	0.03	0.1	IC08
145-120-25-12-83-3-R02-A	12	12	25	83	3	45	5	0.2	C	0.04	0.11	IC08
145-140-30-14-83-3-R02-A	14	14	30	83	3	45	5	0.2	C	0.04	0.12	IC08
145-160-32-16-92-3-R02-A	16	16	32	92	3	45	5	0.2	C	0.05	0.13	IC08
145-200-38-20-104-3-R02-A	20	20	38	104	3	45	5	0.2	C	0.05	0.13	IC08

510

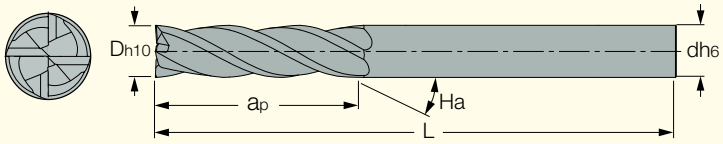
2 Flute, 30° Helix Rib Processing Solid Carbide Ball Nose Endmills,
for Materials up to 65 HRc



Designation	D	d	A_p	H	L	flute	H_a	R_d	Shank	Grade
510-006-004/2-04-2-50-RIB	0.6	4.0	0.5	2.00	50.0	2	30	1.0	C	IC602
510-008-006/10-04-2-50-RIB	0.8	4.0	0.6	10.0	50.0	2	30	1.0	C	IC602
510-008-006/4-04-2-50-RIB	0.8	4.0	0.6	4.00	50.0	2	30	1.0	C	IC602
510-010-008/2-04-2-50-RIB	1.0	4.0	0.8	2.00	50.0	2	30	1.0	C	IC602
510-010-008/4-04-2-50-RIB	1.0	4.0	0.8	4.00	50.0	2	30	1.0	C	IC602
510-010-008/6-04-2-50-RIB	1.0	4.0	0.8	6.00	50.0	2	30	1.0	C	IC602
510-012-010/2-04-2-50-RIB	1.2	4.0	1.0	2.00	50.0	2	30	1.0	C	IC602
510-015-012/6-04-2-50-RIB	1.5	4.0	1.2	6.00	50.0	2	30	1.0	C	IC602
510-020-016/10-04-2-50-RIB	2.0	4.0	1.6	10.0	50.0	2	30	1.0	C	IC602
510-020-016/4-04-2-50-RIB	2.0	4.0	1.6	4.00	50.0	2	30	1.0	C	IC602

145-4G

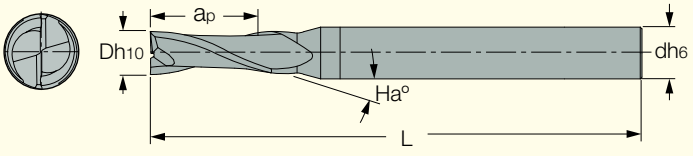
4 Flute, 45° Helix **Long** Solid Carbide Endmills
(for general use on different materials)



Designation	D	d	a_p	L	Flute	H_a°	Shank C-Cylindrical	f_z (min)	f_z (max)	Grade
145-060-24-06-65-4-G	6	6	24	65	4	45	C	0.03	0.07	IC900
145-080-32-08-79-4-G	8	8	32	79	4	45	C	0.03	0.09	IC900
145-100-40-10-100-4-G	10	10	40	100	4	45	C	0.03	0.1	IC900
145-120-48-12-100-4-G	12	12	48	100	4	45	C	0.04	0.11	IC900
145-140-50-14-100-4-G	14	14	50	100	4	45	C	0.04	0.11	IC900

145-2A

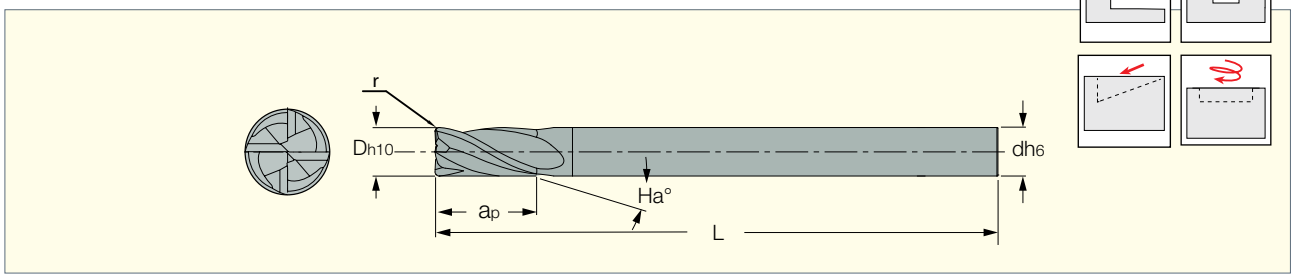
2 Flute, 45° Helix Medium Length Solid Carbide Endmills,
for Machining Aluminum



Designation	D	d	a_p	L	Flute	H_a°	R_d°	Shank C-Cylindrical	f_z (min)	f_z (max)	Grade
145-040-12-06-57-2-A	4	6	12	57	2	45	3	C	0.02	0.05	IC08
145-050-14-06-57-2-A	5	6	14	57	2	45	3	C	0.02	0.06	IC08
145-060-16-06-57-2-A	6	6	16	57	2	45	4	C	0.03	0.07	IC08
145-080-20-08-63-2-A	8	8	20	63	2	45	4	C	0.03	0.09	IC08
145-100-22-10-72-2-A	10	10	22	72	2	45	5	C	0.03	0.1	IC08
145-120-25-12-83-2-A	12	12	25	83	2	45	5	C	0.04	0.11	IC08
145-160-32-16-92-2-A	16	16	32	92	2	45	5	C	0.05	0.13	IC08

145-4-R

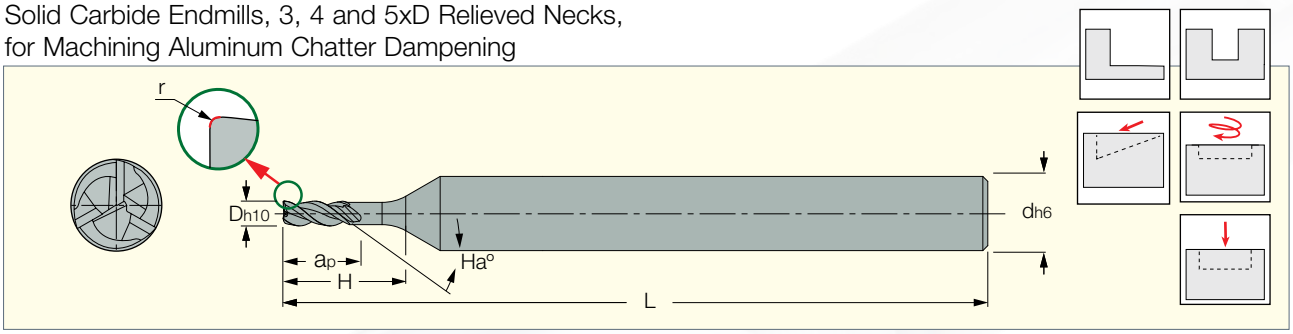
4 Flute, 45° Helix Solid Carbide Endmills and Drill Endmills with 4 Flutes and Various Radii (for general use on different materials)



Designation	D	d	a_p	L	Flute	H_a°	R_d°	Shank C-Cylindrical	r	f_z (min)	f_z (max)	Grade
145-060-16-06-57-4R05-G	6	6	16	57	4	45	4	C	0.5	0.03	0.07	IC900
145-060-16-06-57-4R1-G	6	6	16	57	4	45	4	C	1	0.03	0.07	IC900
145-080-20-08-63-4R05-G	8	8	20	63	4	45	4	C	0.5	0.03	0.09	IC900
145-080-20-08-63-4R1-G	8	8	20	63	4	45	4	C	1	0.03	0.09	IC900
145-080-20-08-63-4R1.5-G	8	8	20	63	4	45	4	C	1.5	0.03	0.09	IC900
145-080-20-08-63-4R2-G	8	8	20	63	4	45	4	C	2	0.03	0.09	IC900
145-100-22-10-72-4R05-G	10	10	22	72	4	45	5	C	0.5	0.03	0.1	IC900
145-100-22-10-72-4R1-G	10	10	22	72	4	45	5	C	1	0.03	0.1	IC900
145-100-22-10-72-4R1.5-G	10	10	22	72	4	45	5	C	1.5	0.03	0.1	IC900
145-100-22-10-72-4R2-G	10	10	22	72	4	45	5	C	2	0.03	0.1	IC900
145-100-22-10-72-4R3-G	10	10	22	72	4	45	5	C	3	0.03	0.1	IC900

138-A

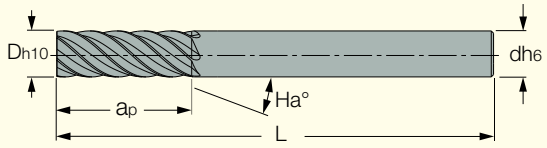
Solid Carbide Endmills, 3, 4 and 5xD Relieved Necks, for Machining Aluminum Chatter Dampening

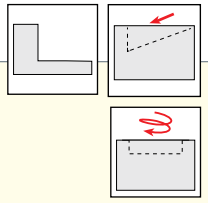


Designation	D	d	a_p	L	Flute	H_a°	H	R_d°	r	Shank C-Cylindrical	f_z (min)	f_z (max)	Grade
138-020-05/08-06-57-3R-A	2	6	5	57	3	38	8	2	0.1	C	0.01	0.02	IC08
138-030-07/12-06-57-3R-A	3	6	7	57	3	38	12	2	0.1	C	0.03	0.05	IC08
138-040-10/16-06-57-3R-A	4	6	10	57	3	38	16	3	0.2	C	0.03	0.05	IC08
138-050-12/20-06-57-3R-A	5	6	12	57	3	38	20	3	0.2	C	0.03	0.06	IC08
138-060-09/18-06-57-3R-A	6	6	9	57	3	38	18	3	0.2	C	0.03	0.07	IC08
138-060-09/30-06-65-3R-A	6	6	9	65	3	38	30	3	0.2	C	0.03	0.07	IC08
138-060-14/24-06-60-3R-A	6	6	14	60	3	38	24	3	0.2	C	0.03	0.07	IC08
138-080-12/24-08-63-3R-A	8	8	12	63	3	38	24	3	0.2	C	0.03	0.09	IC08
138-080-12/40-08-79-3R-A	8	8	12	79	3	38	40	3	0.2	C	0.03	0.09	IC08
138-080-18/32-08-68-3R-A	8	8	18	68	3	38	32	3	0.2	C	0.03	0.09	IC08
138-100-15/30-10-72-3R-A	10	10	15	72	3	38	30	4	0.2	C	0.03	0.1	IC08
138-100-15/50-10-92-3R-A	10	10	15	92	3	38	50	4	0.2	C	0.03	0.1	IC08
138-100-22/40-10-80-3R-A	10	10	22	80	3	38	40	4	0.2	C	0.03	0.1	IC08
138-120-18/36-12-83-3R-A	12	12	18	83	3	38	36	5	0.2	C	0.04	0.11	IC08
138-120-18/60-12-100-3R-A	12	12	18	100	3	38	60	5	0.2	C	0.04	0.11	IC08
138-120-26/48-12-93-3R-A	12	12	26	93	3	38	48	5	0.2	C	0.04	0.11	IC08
138-160-24/48-16-92-3R-A	16	16	24	92	3	38	48	5	0.2	C	0.05	0.13	IC08
138-160-24/80-16-128-3R-A	16	16	24	128	3	38	80	5	0.2	C	0.05	0.13	IC08
138-160-34/64-16-115-3R-A	16	16	34	115	3	38	64	5	0.2	C	0.05	0.13	IC08

145-6G

6 Flute, 45° Helix Medium Length Solid Carbide Endmills,
for Finishing Applications and General Material

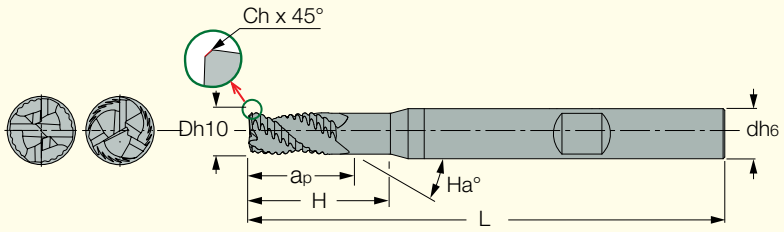


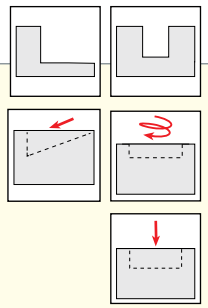


Designation	D	d	a_p	L	Flute	H_a°	Shank C-Cylindrical	f_z (min)	f_z (max)	Grade
145-060-16-06-57-6-G	6	6	16	57	6	45	C	0.03	0.07	IC900
145-080-20-08-63-6-G	8	8	20	63	6	45	C	0.03	0.09	IC900
145-100-22-10-72-6-G	10	10	22	72	6	45	C	0.03	0.1	IC900
145-120-25-12-83-6-G	12	12	25	83	6	45	C	0.04	0.11	IC900
145-160-32-16-92-6-G	16	16	32	92	6	45	C	0.05	0.13	IC900
145-200-38-20-104-6-G	20	20	38	104	6	45	C	0.05	0.13	IC900

438-G

3, 4 Flute, 30° and 38° Helix Solid Carbide Roughing Endmills,
with Relieved Neck for General Material

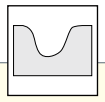


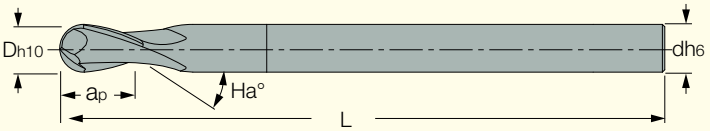


Designation	D	d	a_p	L	Flute	H_a°	H	R_d°	Ch	Shank C-Cylindrical, W-Weldon	f_z (min)	f_z (max)	Grade
438-040-08/13-06-57-3-G	4	6	8	57	3	38	13	3	0.25	C	0.02	0.05	IC900
438-050-10/17-06-57-3-G	5	6	10	57	3	38	17	3	0.3	C	0.02	0.05	IC900
438-060-13/21W06-57-3-G	6	6	13	57	3	38	21	4	0.3	W	0.03	0.06	IC900
438-080-20/28W08-63-3-G	8	8	20	63	3	38	28	4	0.3	W	0.03	0.08	IC900
438-100-22/30W10-72-4-G	10	10	22	72	4	30	30	5	0.3	W	0.03	0.09	IC900
438-120-25/37W12-83-4-G	12	12	25	83	4	30	37	5	0.4	W	0.04	0.1	IC900
438-160-32/44W16-92-4-G	16	16	32	92	4	30	44	5	0.5	W	0.05	0.11	IC900

230

2/4 Flute, Short Ball Nose Endmills

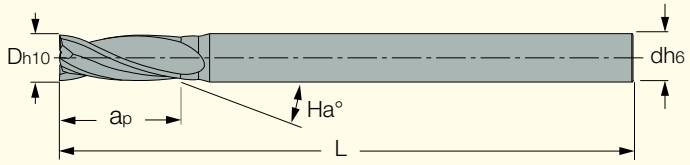


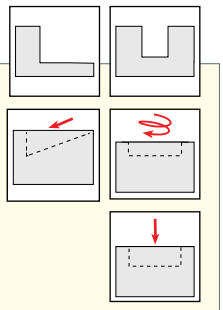


Designation	D	d	a_p	L	Flute	H_a°	Shank C-Cylindrical	Grade
230-030-05-06-57-2-G	3	6	5	57	2	30	C	IC900
230-040-07-06-50-4-G	4	6	7	50	4	30	C	IC900
230-040-12-04-50-4-G	4	4	12	50	4	30	C	IC900
230-050-08-06-57-4-G	5	6	8	57	4	30	C	IC900
230-060-08-06-57-2-G	6	6	8	57	2	30	C	IC900
230-060-08-06-57-4-G	6	6	8	57	4	30	C	IC900
230-060-16-06-57-4-G	6	6	16	57	4	30	C	IC900
230-080-20-08-63-4-G	8	8	20	63	4	30	C	IC900
230-100-22-10-72-4-G	10	10	22	72	4	30	C	IC900

130-4G

4 Flute, 30° Helix Solid Carbide Endmills
(for general use on different materials)

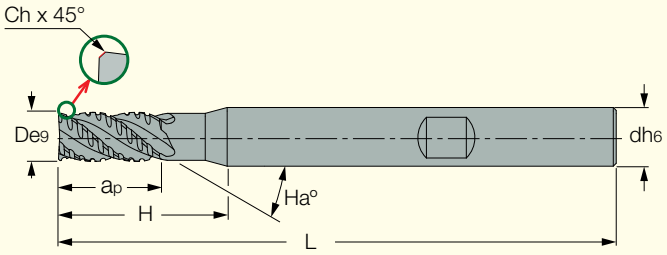


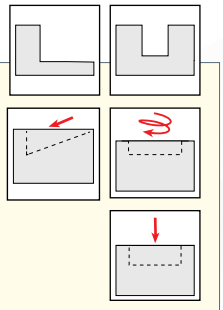


Designation	D	d	a_p	L	Flute	H_a°	R_d°	Shank C-Cylindrical	f_z (min)	f_z (max)	Grade
130-020-07-03-38-4-G	2	3	7	38	4	30	3	C	0.01	0.03	IC900
130-025-07-03-38-4-G	2.5	3	7	38	4	30	3	C	0.01	0.03	IC900
130-030-10-03-38-4-G	3	3	10	38	4	30	4	C	0.01	0.04	IC900
130-030-10-06-57-4-G	3	6	10	57	4	30	4	C	0.01	0.04	IC900
130-040-12-06-57-4-G	4	6	12	57	4	30	5	C	0.02	0.05	IC900
130-050-14-05-50-4-G	5	5	14	50	4	30	5	C	0.02	0.06	IC900
130-050-14-06-57-4-G	5	6	14	57	4	30	5	C	0.02	0.06	IC900
130-060-16-06-57-4-G	6	6	16	57	4	30	5	C	0.03	0.07	IC900
130-080-20-08-63-4-G	8	8	20	63	4	30	5	C	0.03	0.09	IC900
130-100-22-10-72-4-G	10	10	22	72	4	30	5	C	0.03	0.1	IC900
130-120-25-12-83-4-G	12	12	25	83	4	30	5	C	0.04	0.11	IC900

445-4G

4 Flute, Roughing Endmills
(for general use on different materials)

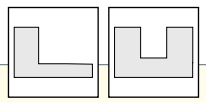


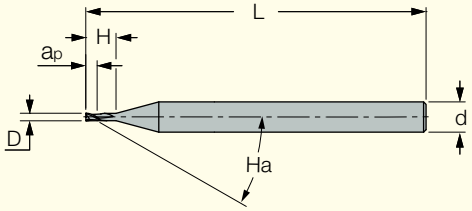


Designation	D	d	a_p	L	Flute	H_a°	H	R_d°	Ch	Shank W-Weldon	Grade
445-050-10/15W06-57-4-G	5	6	10	57	4	45	15	3	0.2	W	IC900
445-060-12-06W57-4-G	6	6	12	57	4	45	-	3	0.25	W	IC900
445-060-12/18W06-57-4-G	6	6	12	57	4	45	18	3	0.25	W	IC900
445-080-16-08W63-4-G	8	8	16	63	4	45	-	4	0.25	W	IC900
445-080-16/24W08-63-4-G	8	8	16	63	4	45	24	4	0.25	W	IC900
445-100-20-10W72-4-G	10	10	20	72	4	45	-	5	0.3	W	IC900
445-100-20/30W10-72-4-G	10	10	20	72	4	45	30	5	0.3	W	IC900
445-120-24-12W83-4-G	12	12	24	83	4	45	-	5	0.35	W	IC900
445-120-24/36W12-83-4-G	12	12	24	83	4	45	36	5	0.35	W	IC900

500

2 Flute, 30° Helix Solid Carbide Endmills,
for Rib Processing on Hard Materials up to 65 HRC

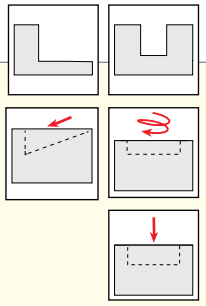


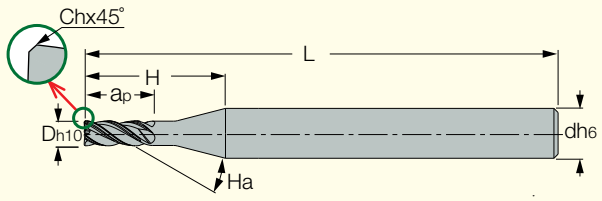


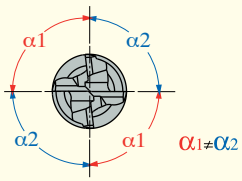
Designation	D	d	A_p	H	L	flute	H_a	R_d	Shank	Grade
500-008-005/4-04-2-50-RIB	0.8	4.0	0.5	4.00	50.0	2	30	1.0	C	IC602
500-008-005/6-04-2-50-RIB	0.8	4.0	0.5	6.00	50.0	2	30	1.0	C	IC602
500-010-006/8-04-2-50-RIB	1.0	4.0	0.6	8.00	50.0	2	30	1.0	C	IC602
500-012-007/6-04-2-50-RIB	1.2	4.0	0.7	6.00	50.0	2	30	1.0	C	IC602
500-015-009/12-04-2-50-RIB	1.5	4.0	0.9	12.0	50.0	2	30	1.0	C	IC602
500-015-009/6-04-2-50-RIB	1.5	4.0	0.9	6.00	50.0	2	30	1.0	C	IC602
500-020-012/10-04-2-50-RIB	2.0	4.0	1.2	10.0	50.0	2	30	1.0	C	IC602
500-020-012/12-04-2-50-RIB	2.0	4.0	1.2	12.0	50.0	2	30	1.0	C	IC602
500-020-012/20-04-2-50-RIB	2.0	4.0	1.2	20.0	50.0	2	30	1.0	C	IC602
500-020-012/6-04-2-50-RIB	2.0	4.0	1.2	6.00	50.0	2	30	1.0	C	IC602

138-4P

4 Flute, 38° Helix Endmills with Relieved Necks,
Chatter Dampening Endmills (for general use on different materials)



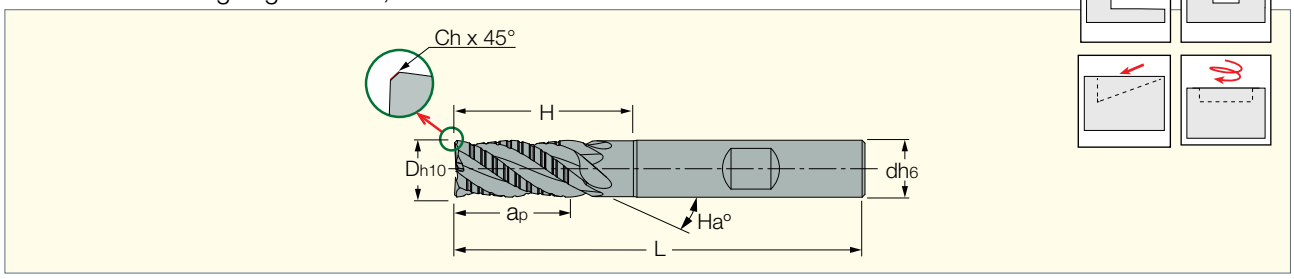




Designation	D	d	a_p	L	Flute	H_a°	H	R_d°	Ch	Shank C-Cylindrical	Grade
138-030-08/11-06-57-4-P	3	6	8	57	4	38	11	3	0.1	C	IC900
138-040-10/14-06-57-4-P	4	6	10	57	4	38	14	3	0.15	C	IC900
138-050-12/17-06-57-4-P	5	6	12	57	4	38	17	3	0.18	C	IC900
138-060-14/20-06-57-4-P	6	6	14	57	4	38	20	4	0.25	C	IC900
138-060-14/20W06-57-4-P	6	6	14	57	4	38	20	4	0.25	W	IC900
138-080-18/26-08-63-4-P	8	8	18	63	4	38	26	4	0.3	C	IC900
138-080-18/26W08-63-4-P	8	8	18	63	4	38	26	4	0.3	W	IC900
138-100-22/32-10-72-4-P	10	10	22	72	4	38	32	5	0.4	C	IC900
138-100-22/32W10-72-4-P	10	10	22	72	4	38	32	5	0.4	W	IC900
138-120-26/38-12-83-4-P	12	12	26	83	4	38	38	5	0.5	C	IC900
138-120-26/38W12-83-4-P	12	12	26	83	4	38	38	5	0.5	W	IC900
138-160-34/50-16-100-4-P	16	16	34	100	4	38	50	5	0.6	C	IC900
138-160-34/50W16-100-4-P	16	16	34	100	4	38	50	5	0.6	W	IC900
138-200-42/60-20-110-4-P	20	20	42	110	4	38	60	5	0.6	C	IC900
138-200-42/60W20-110-4-P	20	20	42	110	4	38	60	5	0.6	W	IC900

338-4M

4 Flute, 38° Helix with Relieved Necks and Chip Splitting Cutting Edges,
Solid Carbide Roughing Endmills, for Stainless Steel Materials

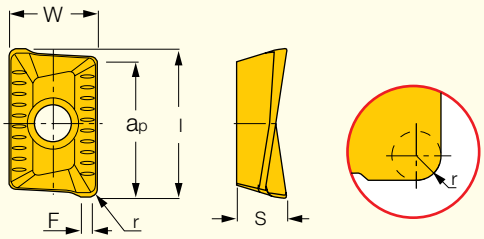


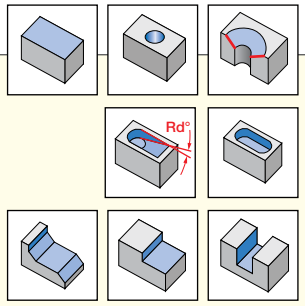
Designation	D	d	a_p	L	Flute	H	H_a°	Ch	Shank W-Weldon	f_z (min)	f_z (max)	Grade
338-060-14/20W06-57-4-M	6	6	14	57	4	20	38	0.3	W	0.03	0.06	IC900
338-080-18/26W08-63-4-M	8	8	18	63	4	26	38	0.4	W	0.03	0.08	IC900
338-100-22/32W10-72-4-M	10	10	22	72	4	32	38	0.4	W	0.03	0.09	IC900
338-120-26/38W12-83-4-M	12	12	26	83	4	38	38	0.4	W	0.04	0.1	IC900
338-160-34/50W16-100-4-M	16	16	34	100	4	50	38	0.5	W	0.05	0.12	IC900

FLASHHELI
ECO LINE

FPKT 1003

Inserts with 2 Helical 10 mm Long Cutting Edges.



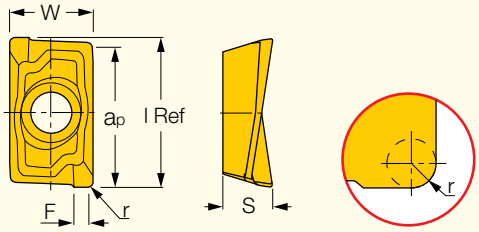


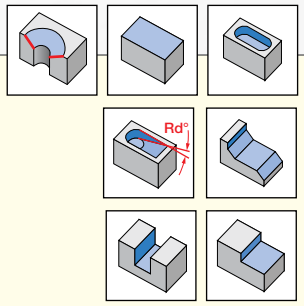
Designation	Dimensions W	l	ap	S	r	F	Recommended Machining Data ap (mm)	fz (mm/t)
FPKT 1003PDTR-RM IC328	6.70	11.00	9.80	3.47	0.50	1.20	4.00-8.00	0.10-0.20
FPKT 1003PDTR-RM IC910	6.70	11.00	9.80	3.47	0.50	1.20	4.00-8.00	0.10-0.20
FPKT 1003PDTR-76 IC328	6.70	11.00	9.80	3.47	0.50	1.20	4.00-8.00	0.08-0.15
FPKT 1003PDTR-76 IC928	6.70	11.00	9.80	3.47	0.50	1.20	4.00-8.00	0.10-0.20
FPKT 100308PDTR-RM IC928	6.70	11.00	9.90	3.47	0.80	0.90	4.00-8.00	0.08-0.15

• RM - Reinforced helical cutting edges, for interrupted cut and heavy machining. • 76 - Helical cutting edges with ribs along edge reducing heat transfer, for interrupted cut.

FPKT 1604

Milling Inserts with a 16 mm Cutting Edge Length and a Positive Rake Angle for General Use



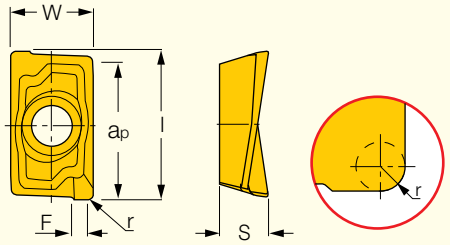


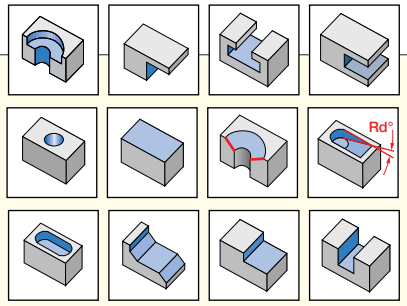
Designation	Dimensions r	W	l	S	F	ap	Recommended Machining Data ap (mm)	fz (mm/t)
FPKT 1604PDR-76 IC328	0.80	9.45	17.30	5.70	1.80	15.30	6.00-14.00	0.10-0.20
FPKT 1604PDR-76 IC928	0.80	9.45	17.30	5.70	1.80	15.30	6.00-14.00	0.10-0.20

FLASHHELI
ECO LINE

FDKT 1505

Inserts with 2 Helical 15 mm Long Cutting Edges



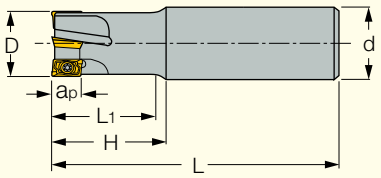


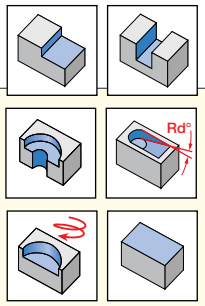
Designation	Dimensions W	l	S	F	r	a_p	Recommended Machining Data a_p (mm)	f_z (mm/t)
FDKT 1505PDTR-RM IC328	9.54	15.75	5.63	1.60	1.00	13.90	5.00-12.00	0.10-0.20
FDKT 1505PDTR-RM IC910	9.54	15.75	5.63	1.60	1.00	13.90	5.00-12.00	0.10-0.20
FDKT 1505PDTR-RM IC928	9.54	15.75	5.63	1.60	1.00	13.90	5.00-12.00	0.10-0.20
FDKT 1505PDTR-76 IC328	9.54	15.75	5.63	1.60	1.00	13.90	5.00-12.00	0.08-0.15
FDKT 1505PDTR-76 IC910	9.54	15.75	5.63	1.60	1.00	13.90	5.00-12.00	0.08-0.15
FDKT 1505PDTR-76 IC928	9.54	15.75	5.63	1.60	1.00	13.90	5.00-12.00	0.08-0.15

• RM - Reinforced helical cutting edges, for interrupted cut and heavy machining. • 76 - Helical cutting edges with ribs along edge reducing heat transfer, for interrupted cut.

FHM90 E90A

Endmills for FPKT 1003... Inserts





Designation	D	Z	a_p	L	H	L_1	$Rd°$	d	Shank[1]		kg	RPM max
FHM90 E90A-D10-1-C10	10.00	1	10.00	80.00	20.0	13.8	5.0	10.00	C	N	0.04	131850
FHM90 E90A-D12-1-C16	12.00	1	10.00	80.00	20.0	14.0	32.0	16.00	C	N	0.11	91850
FHM90 E90A-D16-2-C16	16.00	2	10.00	90.00	26.0	25.2	15.0	16.00	C	N	0.12	66200
FHM90 E90A-D20-3-C20	20.00	3	10.00	110.00	26.1	25.0	7.5	20.00	C	N	0.24	55150
FHM90 E90A-D25-4-C25	25.00	4	10.00	120.00	26.0	25.0	5.0	25.00	C	N	0.42	47150

[1] C-Cylindrical, W-Weldon

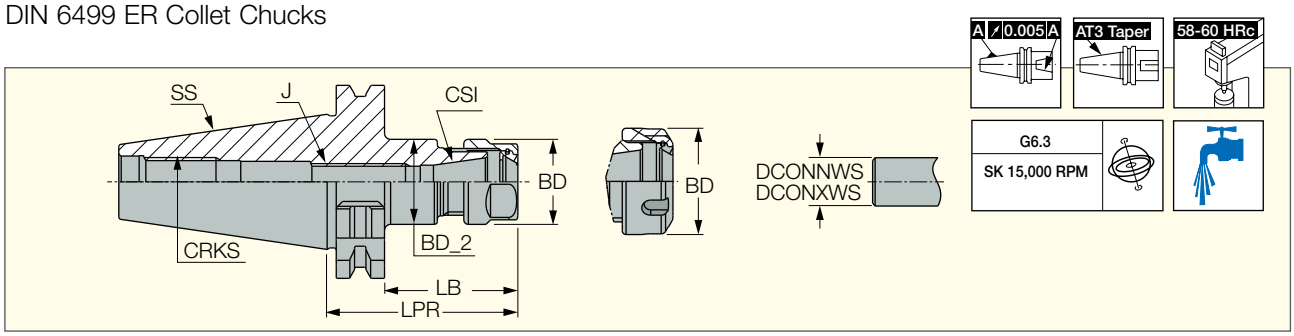
Spare Parts

Designation	Key	Screw
FHM90 E90A	T-8/53	SR 34-505/HG

FLASHTOOLING
ECO LINE

FLASHTOOLING • DIN69871
ECO LINE

DIN69871-ER-FL (form AD)
DIN 6499 ER Collet Chucks

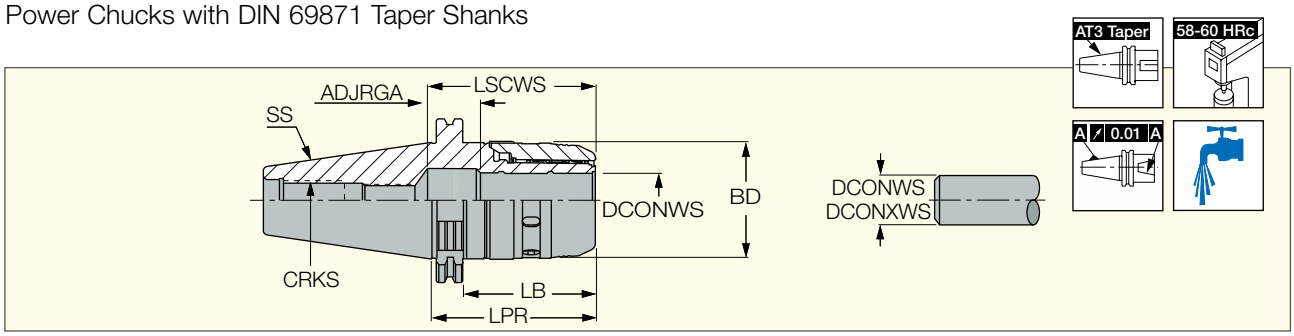


Designation	SS	CSI	DCONNWS(1)	DCONXWS(2)	LPR	LB	BD	BD_2	CRKS	J	WT(3)
DIN69871 40 ER16X63 FL	40	ER16	1.00	10.00	63.0	43.90	28.00	28.00	M16	M10X1.5	0.95
DIN69871 40 ER16X100 FL	40	ER16	1.00	10.00	100.0	80.90	28.00	28.00	M16	M10X1.5	1.15
DIN69871 40 ER16X160 FL	40	ER16	1.00	10.00	160.0	140.90	28.00	28.00	M16	M10X1.5	1.32
DIN69871 40 ER20X70 FL	40	ER20	1.00	13.00	70.0	50.90	34.00	36.00	M16	M14X1.5	1.10
DIN69871 40 ER20X100 FL	40	ER20	1.00	13.00	100.0	80.90	34.00	36.00	M16	M14X1.5	1.32
DIN69871 40 ER25X60 FL	40	ER25	1.00	16.00	60.0	40.90	42.00	42.00	M16	M18X1.5	1.05
DIN69871 40 ER25X100 FL	40	ER25	1.00	16.00	100.0	80.90	42.00	42.00	M16	M18X1.5	1.41
DIN69871 40 ER32X70 FL	40	ER32	2.00	20.00	70.0	50.90	50.00	-	M16	M22X1.5	1.10
DIN69871 40 ER32X100 FL	40	ER32	2.00	20.00	100.0	80.90	50.00	50.00	M16	M22X1.5	1.65
DIN69871 40 ER32X160 FL	40	ER32	2.00	20.00	160.0	140.90	50.00	50.00	M16	M22X1.5	2.50
DIN69871 40 ER40X80 FL	40	ER40	3.00	26.00	80.0	60.90	63.00	-	M16	M28X1.5	1.47
DIN69871 40 ER40X100 FL	40	ER40	3.00	26.00	100.0	80.90	63.00	-	M16	M28X1.5	1.28
DIN69871 50 ER16X100 FL	50	ER16	1.00	10.00	100.0	80.90	28.00	28.00	M24	M10X1.5	2.85
DIN69871 50 ER16X160 FL	50	ER16	1.00	10.00	160.0	140.90	28.00	28.00	M24	M10X1.5	3.28
DIN69871 50 ER16X200 FL	50	ER16	1.00	10.00	200.0	180.90	28.00	28.00	M24	M10X1.5	3.52
DIN69871 50 ER20X100 FL	50	ER20	1.00	13.00	100.0	80.90	34.00	36.00	M24	M14X1.5	3.18
DIN69871 50 ER25X100 FL	50	ER25	1.00	16.00	100.0	80.90	42.00	42.00	M24	M18X1.5	3.30
DIN69871 50 ER25X160 FL	50	ER25	1.00	16.00	160.0	140.90	42.00	42.00	M24	M18X1.5	3.52
DIN69871 50 ER32X100 FL	50	ER32	2.00	20.00	100.0	80.90	50.00	50.00	M24	M22X1.5	3.50
DIN69871 50 ER32X160 FL	50	ER32	2.00	20.00	160.0	140.90	50.00	50.00	M24	M22X1.5	4.42
DIN69871 50 ER32X200 FL	50	ER32	2.00	20.00	200.0	180.90	50.00	50.00	M24	M22X1.5	4.51
DIN69871 50 ER40X100 FL	50	ER40	3.00	26.00	100.0	80.90	63.00	63.00	M24	M28X1.5	3.85
DIN69871 50 ER40X160 FL	50	ER40	3.00	26.00	160.0	140.90	63.00	63.00	M24	M28X1.5	5.25

(1) Minimum diameter (2) Maximum diameter (3) Item weight

FLASHTOOLING • DIN69871 • MAXIN
ECO LINE

DIN69871-MAXIN-FL (form AD)
Power Chucks with DIN 69871 Taper Shanks



Designation	SS	DCONWS(1)	DCONNWS(2)	BD	LPR	LB	LSCWS	ADJRGA	CRKS	WT(3)
DIN69871 40 MAXIN 20X85FL	40	20.00	6.00	50.00	90.0	63.00	73.0	21.00	M16	1.10
DIN69871 40 MAXIN32X105FL	40	32.00	6.00	70.00	105.0	78.00	78.0	15.00	M16	2.35
DIN69871 50 MAXIN20X105FL	50	20.00	6.00	50.00	105.0	78.00	73.0	21.00	M24	3.20
DIN69871 50 MAXIN32X110FL	50	32.00	6.00	70.00	110.0	83.00	78.0	15.00	M24	3.50

• Use of DCONWS diameter tools provides the best performance as collets reduce gripping force.

(1) Without a collet (2) Minimum diameter (3) Item weight

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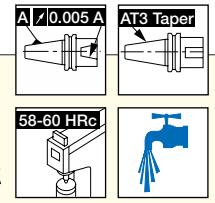
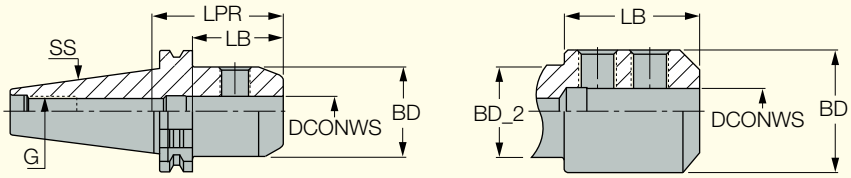
ECO LINE

DIN69871-EM-FL (DIN 1835-B)

DIN6359 / DIN1835 Form B Weldon Endmill Holders
with DIN69871 Form AD Tapered Shanks





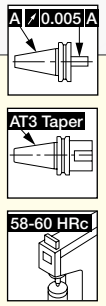
Designation	SS	DCONWS	BD	LPR	LB	CRKS	WT(1)
DIN69871 40 EM10X50 FL	40	10.00	35.00	50.0	30.90	M16	1.00
DIN69871 40 EM12X50 FL	40	12.00	42.00	50.0	30.90	M16	1.15
DIN69871 40 EM16X63 FL	40	16.00	48.00	63.0	43.90	M16	1.30
DIN69871 40 EM20X63 FL	40	20.00	52.00	63.0	43.90	M16	1.35
DIN69871 40 EM25X100 FL	40	25.00	65.00	100.0	80.90	M16	2.35
DIN69871 40 EM32X100 FL	40	32.00	72.00	100.0	80.90	M16	2.60
DIN69871 50 EM12X63 FL	50	12.00	42.00	63.0	43.90	M24	3.10
DIN69871 50 EM16X63 FL	50	16.00	48.00	63.0	43.90	M24	3.20
DIN69871 50 EM20X63 FL	50	20.00	52.00	63.0	43.90	M24	3.25
DIN69871 50 EM25X80 FL	50	25.00	65.00	80.0	60.90	M24	3.97
DIN69871 50 EM32X100 FL	50	32.00	72.00	100.0	80.90	M24	4.66
DIN69871 50 EM40X100 FL	50	40.00	80.00	100.0	80.90	M24	4.90
DIN69871 50 EM50X120 FL	50	50.00	100.00	120.0	100.90	M24	8.90

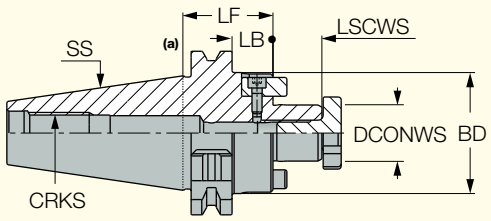
(1) Item weight

FLASHTOOLING • DIN69871
ECO LINE

DIN69871-SEM-FL

ISO 3937 Shell Mill Holders with DIN 69871 Form AD Taper Shanks





Designation	SS	DCONWS	BD	LF	LSCWS	LB	CRKS	WT(1)
DIN69871 40 SEM22X35 FL	40	22.00	48.00	35.00	19.0	15.90	M16	1.10
DIN69871 40 SEM27X40 FL	40	27.00	58.00	40.00	21.0	20.90	M16	1.30
DIN69871 40 SEM32X50 FL	40	32.00	78.00	50.00	24.0	30.90	M16	1.85
DIN69871 50 SEM16X35 FL	50	16.00	38.00	35.00	17.0	15.90	M24	2.80
DIN69871 50 SEM22X35 FL	50	22.00	48.00	35.00	19.0	15.90	M24	2.90
DIN69871 50 SEM27X40 FL	50	27.00	58.00	40.00	21.0	20.90	M24	3.15
DIN69871 50 SEM32X50 FL	50	32.00	78.00	50.00	24.0	30.90	M24	3.90
DIN69871 50 SEM40X50 FL	50	40.00	88.00	50.00	27.0	30.90	M24	4.60

(1) Item weight

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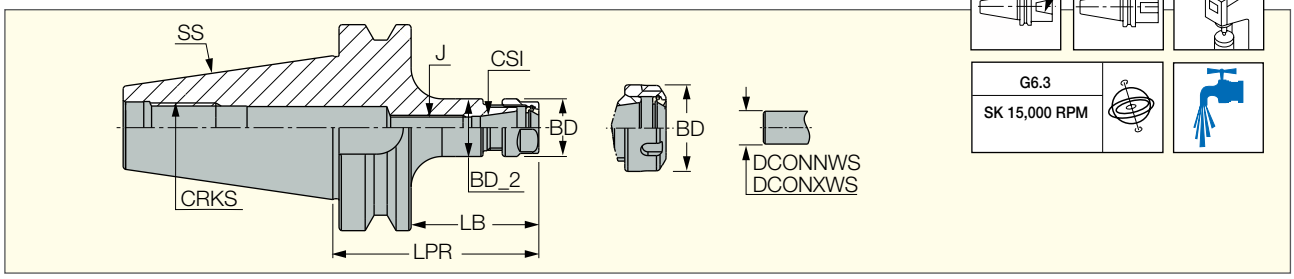
ECO LINE

BT-ER-FL (form AD)
DIN6499 ER Collet Chucks

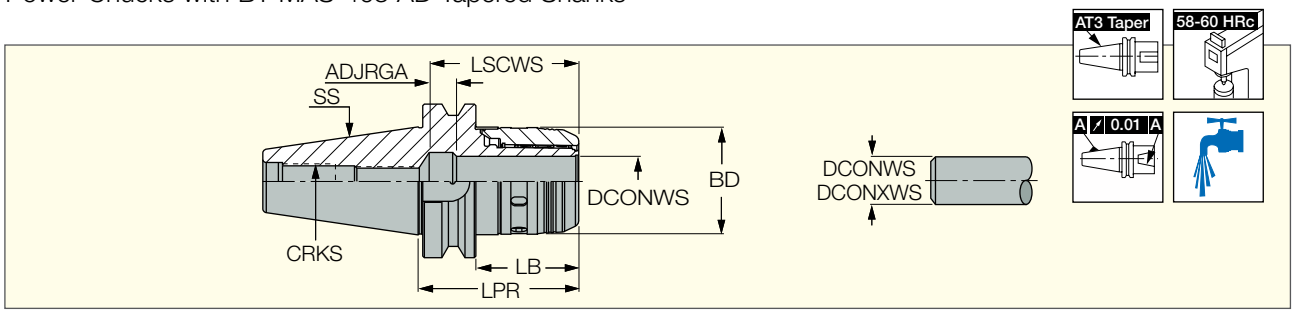


Designation	SS	CSI	DCONNWS(1)	DCONXWS(2)	LPR	LB	BD	BD_2	J	CRKS	WT(3)
BT30 ER16X70 FL	30	ER16	1.00	10.00	70.0	48.00	28.00	28.00	M10X1.5	M12	0.60
BT30 ER16X100 FL	30	ER16	1.00	10.00	100.0	78.00	28.00	28.00	M10X1.5	M12	0.70
BT30 ER20X70 FL	30	ER20	1.00	13.00	70.0	48.00	34.00	36.00	M14X1.5	M12	0.65
BT30 ER25X70 FL	30	ER25	1.00	16.00	70.0	48.00	42.00	42.00	M18X1.5	M12	0.65
BT30 ER32X70 FL	30	ER32	2.00	20.00	70.0	48.00	50.00	-	M22X1.5	M12	0.70
BT40 ER16X63 FL	40	ER16	1.00	10.00	63.0	27.00	28.00	28.00	M10X1.5	M16	1.10
BT40 ER16X100 FL	40	ER16	1.00	10.00	100.0	73.00	28.00	28.00	M10X1.5	M16	1.30
BT40 ER16X160 FL	40	ER16	1.00	10.00	160.0	133.00	28.00	28.00	M10X1.5	M16	1.55
BT40 ER20X100 FL	40	ER20	1.00	13.00	100.0	73.00	34.00	36.00	M14X1.5	M16	1.40
BT40 ER25X60 FL	40	ER25	1.00	16.00	60.0	33.00	42.00	42.00	M18X1.5	M16	1.15
BT40 ER25X100 FL	40	ER25	1.00	16.00	100.0	73.00	42.00	42.00	M18X1.5	M16	1.55
BT40 ER32X70 FL	40	ER32	2.00	20.00	70.0	43.00	50.00	50.00	M22X1.5	M16	1.25
BT40 ER32X100 FL	40	ER32	2.00	20.00	100.0	73.00	50.00	50.00	M22X1.5	M16	1.70
BT40 ER32X160 FL	40	ER32	2.00	20.00	160.0	133.00	50.00	50.00	M22X1.5	M16	2.31
BT40 ER40X80 FL	40	ER40	3.00	26.00	80.0	53.00	63.00	-	M28X1.5	M16	1.35
BT50 ER16X100 FL	50	ER16	1.00	10.00	100.0	62.00	28.00	28.00	M10X1.5	M24	3.85
BT50 ER16X160 FL	50	ER16	1.00	10.00	160.0	122.00	28.00	28.00	M10X1.5	M24	4.30
BT50 ER20X100 FL	50	ER20	1.00	13.00	100.0	62.00	34.00	36.00	M14X1.5	M24	3.95
BT50 ER20X160 FL	50	ER20	1.00	13.00	160.0	122.00	34.00	36.00	M14X1.5	M24	4.10
BT50 ER25X100 FL	50	ER25	1.00	16.00	100.0	62.00	42.00	42.00	M18X1.5	M24	4.13
BT50 ER25X160 FL	50	ER25	1.00	16.00	160.0	122.00	42.00	42.00	M18X1.5	M24	4.50
BT50 ER32X100 FL	50	ER32	2.00	20.00	100.0	62.00	50.00	50.00	M22X1.5	M24	4.26
BT50 ER32X160 FL	50	ER32	2.00	20.00	160.0	122.00	50.00	50.00	M22X1.5	M24	4.70
BT50 ER32X200 FL	50	ER32	2.00	20.00	200.0	162.00	50.00	50.00	M22X1.5	M24	5.67
BT50 ER40X100 FL	50	ER40	3.00	26.00	100.0	62.00	63.00	63.00	M28X1.5	M24	4.40
BT50 ER40X160 FL	50	ER40	3.00	26.00	160.0	122.00	63.00	63.00	M28X1.5	M24	5.70

(1) Minimum diameter (2) Maximum diameter (3) Item weight

FLASHTOOLING • BT MAS • MAXIN
ECO LINE

BT-MAXIN-FL
Power Chucks with BT MAS-403 AD Tapered Shanks



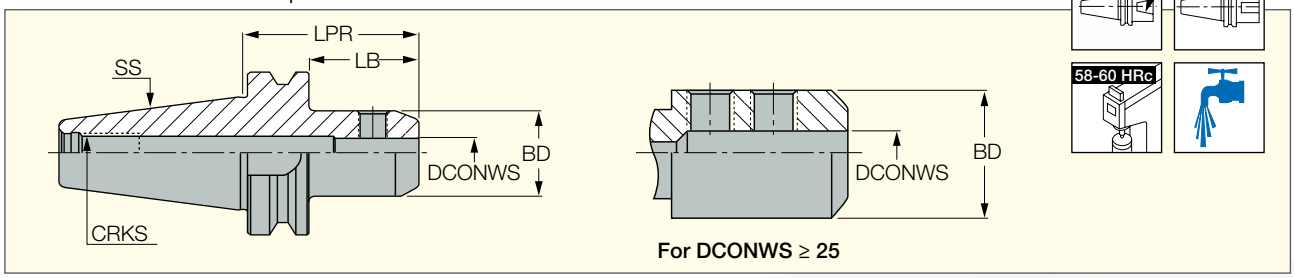
Designation	SS	DCONWS(1)	DCONNWS(2)	BD	LPR	LB	LSCWS	ADJRGA	CRKS	WT(3)
BT40 MAXIN 20X90 FL	BT40	20.00	6.00	50.00	90.0	63.00	73.0	21.00	M16	1.12
BT40 MAXIN 32X105 FL	BT40	32.00	6.00	70.00	105.0	78.00	78.0	15.00	M16	2.45
BT50 MAXIN 20X105 FL	BT50	20.00	6.00	50.00	105.0	78.00	73.0	21.00	M24	3.90
BT50 MAXIN 32X110 FL	BT50	32.00	6.00	70.00	110.0	83.00	78.0	15.00	M24	4.50

• Use of DCONWS diameter tools provides the best performance as collets reduce gripping force.

(1) Without a collet (2) Minimum diameter (3) Item weight

BT-EM-FL (DIN 1835 Form B)

DIN6359 / DIN 1835 Form B Weldon Endmill Holders
with BT MAS-403 AD Tapered Shanks



Designation	SS	DCONWS	BD	LPR	LB	CRKS	WT(1)
BT40 EM 6X50 FL	40	6.00	25.00	50.0	23.00	M16	1.05
BT40 EM 8X50 FL	40	8.00	28.00	50.0	23.00	M16	1.10
BT40 EM 10X63 FL	40	10.00	35.00	63.0	36.00	M16	1.25
BT40 EM 12X63 FL	40	12.00	42.00	63.0	36.00	M16	1.35
BT40 EM 16X63 FL	40	16.00	48.00	63.0	36.00	M16	1.40
BT40 EM 20X63 FL	40	20.00	52.00	63.0	36.00	M16	1.40
BT40 EM 25X45 FL	40	25.00	63.00	45.0	-	M16	1.12
BT40 EM 25X90 FL	40	25.00	65.00	90.0	63.00	M16	2.25
BT40 EM 32X100 FL	40	32.00	72.00	100.0	73.00	M16	2.75
BT50 EM 12X80 FL	50	12.00	42.00	80.0	42.00	M24	4.00
BT50 EM 16X80 FL	50	16.00	48.00	80.0	42.00	M24	4.10
BT50 EM 20X80 FL	50	20.00	52.00	80.0	42.00	M24	4.17
BT50 EM 25X100 FL	50	25.00	65.00	100.0	62.00	M24	4.85
BT50 EM 32X105 FL	50	32.00	72.00	105.0	67.00	M24	5.24
BT50 EM 40X110 FL	50	40.00	80.00	110.0	72.00	M24	5.90

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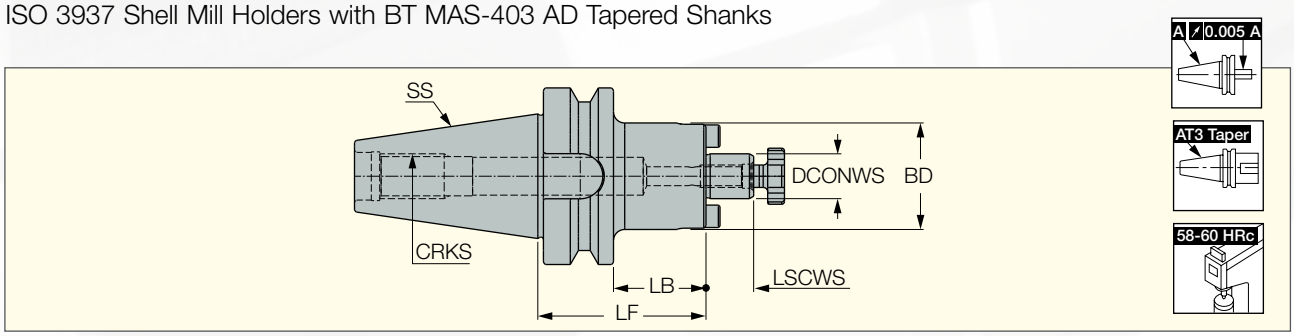
ECO LINE

BT-SEM-FL

ISO 3937 Shell Mill Holders with BT MAS-403 AD Tapered Shanks

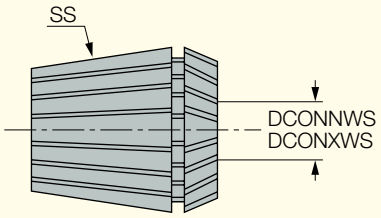


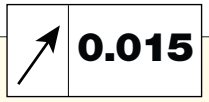
Designation	SS	DCONWS	BD	LF	LSCWS	LB	CRKS	WT(1)
BT30 SEM 22X40 FL	30	22.00	48.00	40.00	19.0	8.00	M12	1.13
BT40 SEM 16X40 FL	40	16.00	38.00	40.00	17.0	13.00	M16	1.15
BT40 SEM 22X40 FL	40	22.00	48.00	40.00	19.0	13.00	M16	1.13
BT40 SEM 22X100 FL	40	22.00	48.00	100.00	19.0	73.00	M16	2.10
BT40 SEM 27X40 FL	40	27.00	58.00	40.00	21.0	13.00	M16	1.15
BT40 SEM 32X50 FL	40	32.00	78.00	50.00	24.0	23.00	M16	2.15
BT40 SEM 40X50 FL	40	40.00	88.00	50.00	27.0	23.00	M16	2.45
BT50 SEM 16X40 FL	50	16.00	38.00	40.00	17.0	2.00	M24	3.72
BT50 SEM 16X100 FL	50	16.00	38.00	100.00	17.0	62.00	M24	4.24
BT50 SEM 22X40 FL	50	22.00	48.00	40.00	19.0	2.00	M24	3.75
BT50 SEM 22X100 FL	50	22.00	48.00	100.00	19.0	62.00	M24	4.50
BT50 SEM 27X40 FL	50	27.00	58.00	40.00	21.0	2.00	M24	3.85
BT50 SEM 27X100 FL	50	27.00	58.00	100.00	21.0	62.00	M24	4.60
BT50 SEM 32X50 FL	50	32.00	78.00	50.00	24.0	12.00	M24	4.50
BT50 SEM 32X100 FL	50	32.00	78.00	100.00	24.0	62.00	M24	6.10
BT50 SEM 40X50 FL	50	40.00	88.00	50.00	27.0	12.00	M24	5.00
BT50 SEM 40X100 FL	50	40.00	88.00	100.00	27.0	62.00	M24	7.10

(1) Item weight

ER-SPR-FL

DIN 6499 ER Spring Collets



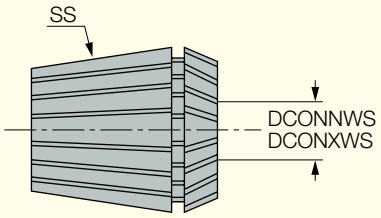


Designation	SS	DCONNWS(1)	DCONXWS(2)
ER11 SPR 0.5-1 FL	ER11	0.50	1.00
ER11 SPR 1.5-2 FL	ER11	1.50	2.00
ER11 SPR 2.5-3 FL	ER11	2.50	3.00
ER11 SPR 3.5-4 FL	ER11	3.50	4.00
ER11 SPR 4.5-5 FL	ER11	4.50	5.00
ER11 SPR 5.5-6 FL	ER11	5.50	6.00
ER11 SPR 6.5-7 FL	ER11	6.50	7.00
ER16 SPR 0.5-1 FL	ER16	0.50	1.00
ER16 SPR 1-2 FL	ER16	1.00	2.00
ER16 SPR 2-3 FL	ER16	2.00	3.00
ER16 SPR 3-4 FL	ER16	3.00	4.00
ER16 SPR 4-5 FL	ER16	4.00	5.00
ER16 SPR 5-6 FL	ER16	5.00	6.00
ER16 SPR 6-7 FL	ER16	6.00	7.00
ER16 SPR 7-8 FL	ER16	7.00	8.00
ER16 SPR 8-9 FL	ER16	8.00	9.00
ER16 SPR 9-10 FL	ER16	9.00	10.00
ER20 SPR 1-2 FL	ER20	1.00	2.00
ER20 SPR 2-3 FL	ER20	2.00	3.00
ER20 SPR 3-4 FL	ER20	3.00	4.00
ER20 SPR 4-5 FL	ER20	4.00	5.00
ER20 SPR 5-6 FL	ER20	5.00	6.00
ER20 SPR 6-7 FL	ER20	6.00	7.00
ER20 SPR 7-8 FL	ER20	7.00	8.00
ER20 SPR 8-9 FL	ER20	8.00	9.00
ER20 SPR 9-10 FL	ER20	9.00	10.00
ER20 SPR 10-11 FL	ER20	10.00	11.00
ER20 SPR 11-12 FL	ER20	11.00	12.00
ER20 SPR 12-13 FL	ER20	12.00	13.00
ER25 SPR 1-2 FL	ER25	1.00	2.00
ER25 SPR 2-3 FL	ER25	2.00	3.00
ER25 SPR 3-4 FL	ER25	3.00	4.00
ER25 SPR 4-5 FL	ER25	4.00	5.00
ER25 SPR 5-6 FL	ER25	5.00	6.00
ER25 SPR 6-7 FL	ER25	6.00	7.00
ER25 SPR 7-8 FL	ER25	7.00	8.00
ER25 SPR 8-9 FL	ER25	8.00	9.00
ER25 SPR 9-10 FL	ER25	9.00	10.00
ER25 SPR 10-11 FL	ER25	10.00	11.00
ER25 SPR 11-12 FL	ER25	11.00	12.00
ER25 SPR 12-13 FL	ER25	12.00	13.00
ER25 SPR 13-14 FL	ER25	13.00	14.00
ER25 SPR 14-15 FL	ER25	14.00	15.00
ER25 SPR 15-16 FL	ER25	15.00	16.00
ER32 SPR 2-3 FL	ER32	2.00	3.00
ER32 SPR 3-4 FL	ER32	3.00	4.00
ER32 SPR 4-5 FL	ER32	4.00	5.00
ER32 SPR 5-6 FL	ER32	5.00	6.00
ER32 SPR 6-7 FL	ER32	6.00	7.00
ER32 SPR 7-8 FL	ER32	7.00	8.00
ER32 SPR 8-9 FL	ER32	8.00	9.00
ER32 SPR 9-10 FL	ER32	9.00	10.00
ER32 SPR 10-11 FL	ER32	10.00	11.00
ER32 SPR 11-12 FL	ER32	11.00	12.00
ER32 SPR 12-13 FL	ER32	12.00	13.00
ER32 SPR 13-14 FL	ER32	13.00	14.00

(1) Minimum diameter (2) Maximum diameter

ER-SPR-FL (continuous)

DIN 6499 ER Spring Collets

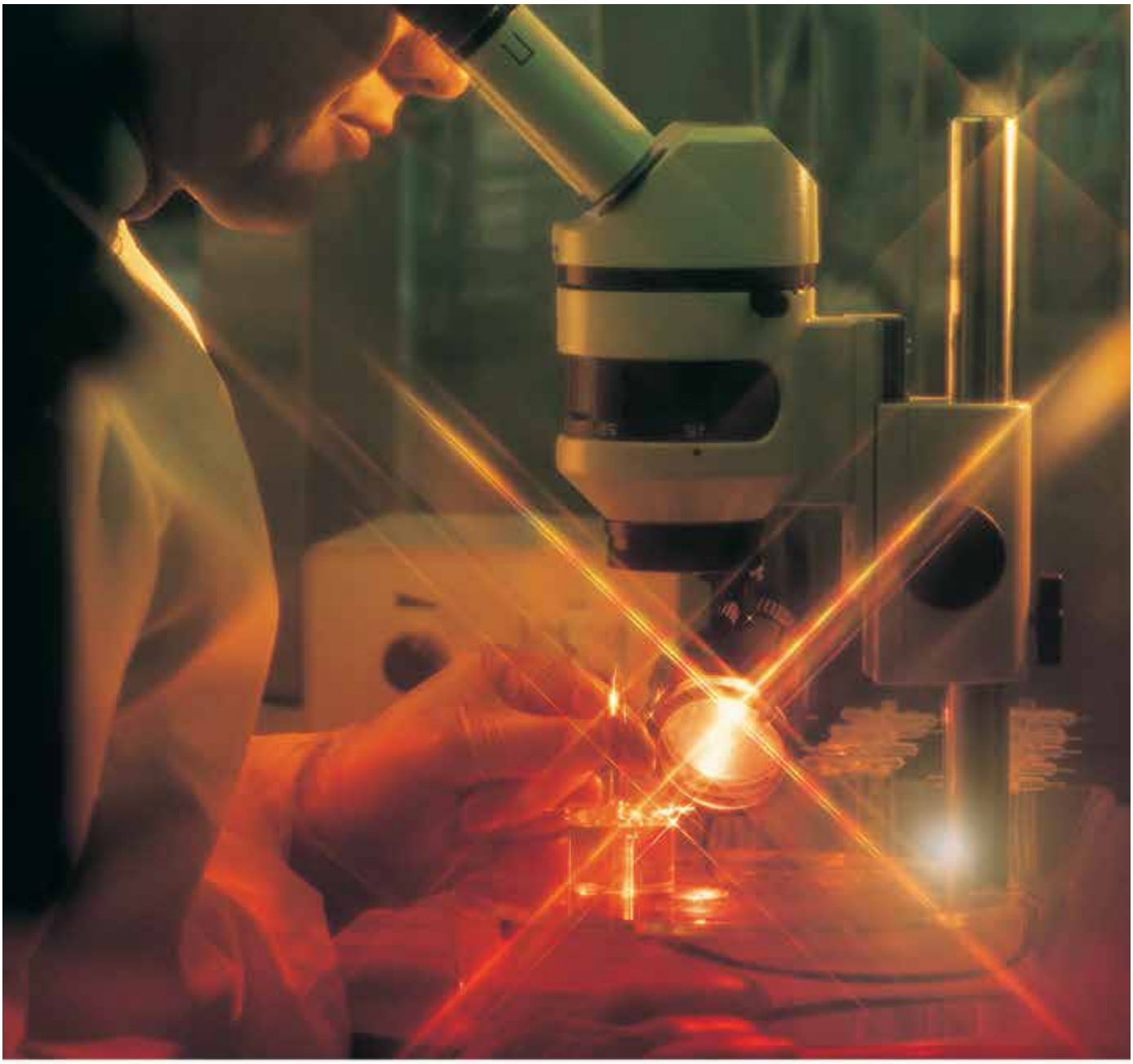


0.015

Designation	SS	DCONNWS(1)	DCONXWS(2)
ER32 SPR 14-15 FL	ER32	14.00	15.00
ER32 SPR 15-16 FL	ER32	15.00	16.00
ER32 SPR 16-17 FL	ER32	16.00	17.00
ER32 SPR 17-18 FL	ER32	17.00	18.00
ER32 SPR 18-19 FL	ER32	18.00	19.00
ER32 SPR 19-20 FL	ER32	19.00	20.00
ER40 SPR 3-4 FL	ER40	3.00	4.00
ER40 SPR 4-5 FL	ER40	4.00	5.00
ER40 SPR 5-6 FL	ER40	5.00	6.00
ER40 SPR 6-7 FL	ER40	6.00	7.00
ER40 SPR 7-8 FL	ER40	7.00	8.00
ER40 SPR 8-9 FL	ER40	8.00	9.00
ER40 SPR 9-10 FL	ER40	9.00	10.00
ER40 SPR 10-11 FL	ER40	10.00	11.00
ER40 SPR 11-12 FL	ER40	11.00	12.00
ER40 SPR 12-13 FL	ER40	12.00	13.00
ER40 SPR 13-14 FL	ER40	13.00	14.00
ER40 SPR 14-15 FL	ER40	14.00	15.00
ER40 SPR 15-16 FL	ER40	15.00	16.00
ER40 SPR 16-17 FL	ER40	16.00	17.00
ER40 SPR 17-18 FL	ER40	17.00	18.00
ER40 SPR 18-19 FL	ER40	18.00	19.00
ER40 SPR 19-20 FL	ER40	19.00	20.00
ER40 SPR 20-21 FL	ER40	20.00	21.00
ER40 SPR 21-22 FL	ER40	21.00	22.00
ER40 SPR 22-23 FL	ER40	22.00	23.00
ER40 SPR 23-24 FL	ER40	23.00	24.00
ER40 SPR 24-25 FL	ER40	24.00	25.00
ER40 SPR 25-26 FL	ER40	25.00	26.00

(1) Minimum diameter (2) Maximum diameter

FLASHLINE
ECO LINE



Quality Standard

ISCAR has been certified by the prestigious Standards Institution, as being in full compliance with Quality and Environmental & Occupational Health and Safety Management Standards -
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ISO 9001:2008
ISO 14001:2004
OHSAS 18001:2007

In addition, completed products are inspected before shipping, to ensure delivery of the finest quality goods. Quality control facilities include the metallurgical laboratory, raw metal testing, an online testing procedure and a machining center for tool performance testing and final product inspection.
Only the finest products are packaged for entry into ISCAR's inventory.

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NEW

High Productivity Tools Combined With a Great Economical Advantage

FLASHLINE

ECO LINE

8

- **FLASHCHAM** ECO CHAMELEON LINE
- **FLASHPENTA** ECO PARTING AND GROOVING LINE
- **FLASHCUT** ECO PARTING LINE
- **FLASHTURN** ECO LINE
- **FLASHSOLID** ECO SOLID LINE
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- **FLASHTOOLING** ECO LINE
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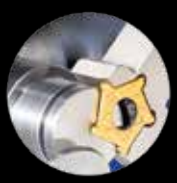
FLASH CHAM


FLASH PENTA


FLASH CUT


FLASH TURN


FLASH SOLID


FLASH HELI


FLASH TOOLING


FLASH BLACK