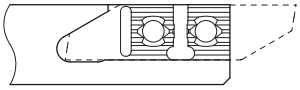
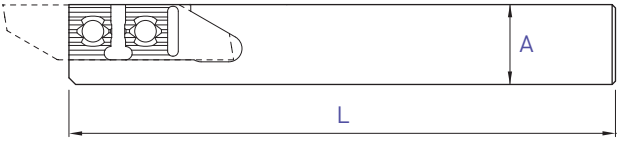
Porte-outils
Halter
Holders

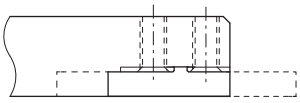
630 / 640

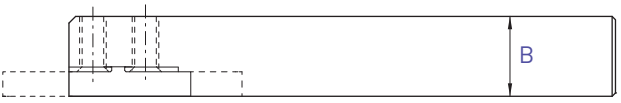
L

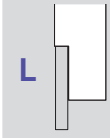


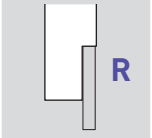
R









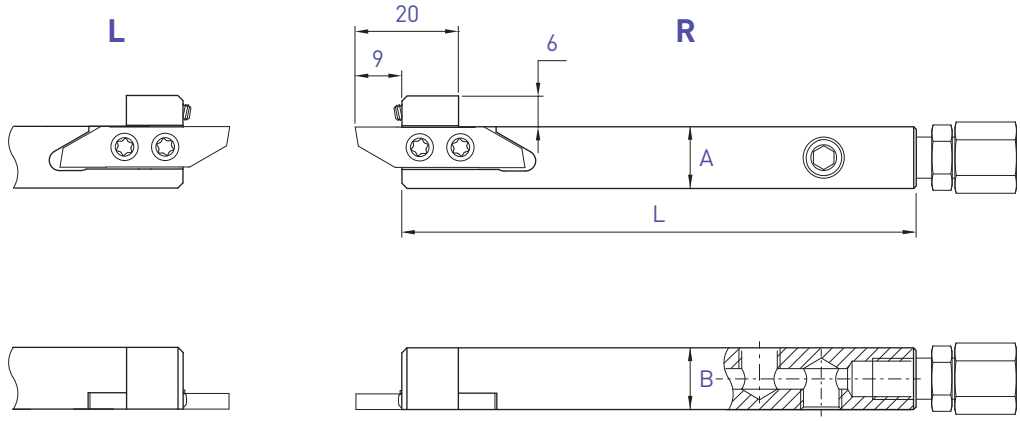


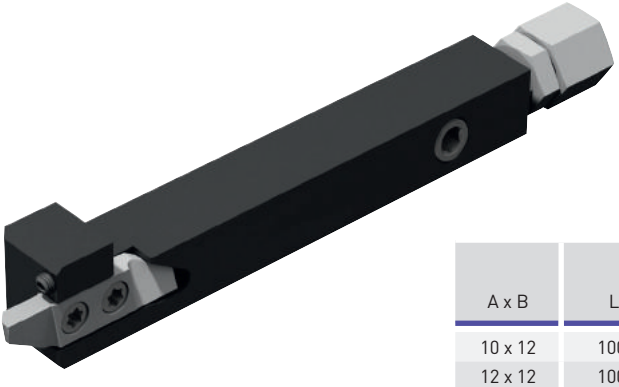
A x B	L	Art. N°	Art. N°
8 x 8	115	**630-8**	**640-8**
10 x 10	115	**630-10**	**640-10**
10 x 10	50	**630-10-50**	**640-10-50**
12 x 12	130	**630-12**	**640-12**
12 x 12	90	**630-12-90**	**640-12-90**
12.7 x 12.7	130	**630-12.7**	**640-12.7**
16 x 16	130	**630-16**	**640-16**
16 x 16	75	**630-16-75**	**640-16-75**
20 x 20	120	**630-20**	**640-20**

Chaque support est livré avec vis et clé.
Jeder Halter wird mit Spannschraube(n) und Schlüssel geliefert.
Screw(s) and key are included with each tool holder.

Porte-outils avec arrosage intégré
Halter mit integrierter Kühlmittelzufuhr
Holders with integrated coolant supply

630-JET / 640-JET





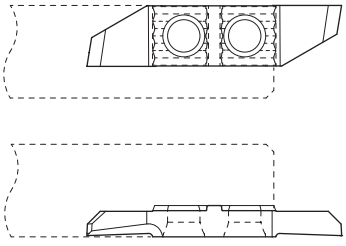
A x B	L	L Art. N°	R Art. N°
10 x 12	100	**630-1012-JET**	**640-1012-JET**
12 x 12	100	**630-12-JET**	**640-12-JET**
12.7 x 12.7	100	**630-12.7-JET**	**640-12.7-JET**
16 x 16	100	**630-16-JET**	**640-16-JET**
20 x 20	100	**630-20-JET**	**640-20-JET**

Chaque support est livré avec vis, clé, raccord droit et buse d'arrosage Ø 1.5 mm.
Jeder Halter wird mit Spannschraube(n), Schlüssel, gerader Kühlmittelanschluss und Kühlmitteldüse Ø 1.5 mm geliefert.
Screw(s), key, straight connector and coolant nozzle Ø 1.5 mm are included with each tool holder.

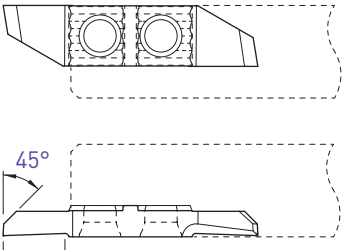
Tournage avant
Vorwärts drehen
Front turning

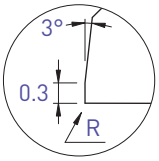
632 / 642

L



R



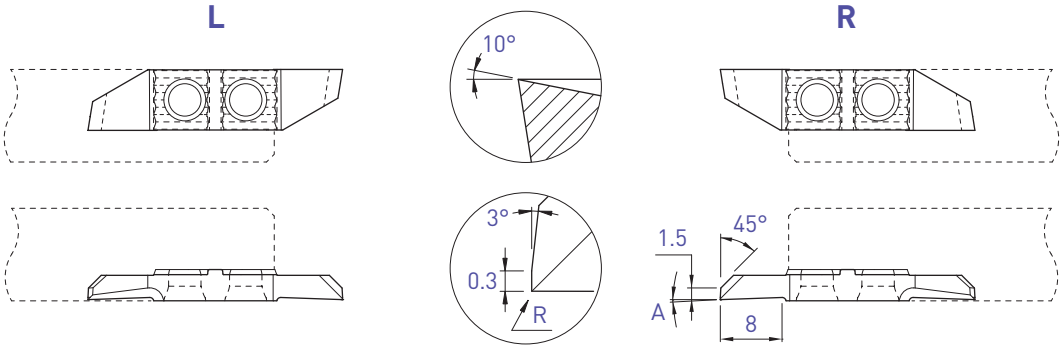


L						R				
A	R	Art. N°	TiAlN	N (µk20)	HTA	HN (µk10)	Art. N°	TiAlN	N (µk20)	HTA	HN (µk10)
0°	0	**632**	■	■			**642**	■	■	□	□
0°	0.08	–					**642-R08**	■	■	□	□
0°	0.15	–					**642-R15**	■	■	□	□
2°	0	**632-2°**	■	■			**642-2°**	■	■	□	□
2°	0.08	–					**642-2°-R08**	■	■	□	□
2°	0.15	–					**642-2°-R15**	■	■	□	□

Autre revêtement sur demande / Andere Beschichtung auf Anfrage / Other coating on request

Tournage avant
Vorwärts drehen
Front turning

632X / 642X



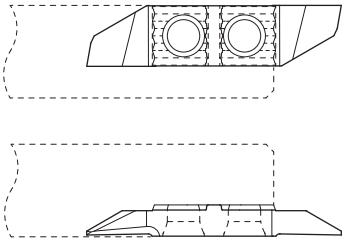
		L				R				
A	R	Art. N°	TiAlN	N (µk20)	HTA	HN (µk10)	Art. N°	TiAlN	N (µk20)	HTA	HN (µk10)
0°	0	632X10	■	■			642X10	■	■	□	□
0°	0.08	–					642X10-R08	■	■	□	□
0°	0.15	–					642X10-R15	■	■	□	□
2°	0	632X10-2°	■	■			642X10-2°	■	■	□	□
2°	0.08	–					642X10-2°-R08	■	■	□	□
2°	0.15	–					642X10-2°-R15	■	■	□	□

■ = disponible / verfügbar / available
□ = selon disponibilité du stock / jenach Lagerverfügbarkeit / depending on stock availability

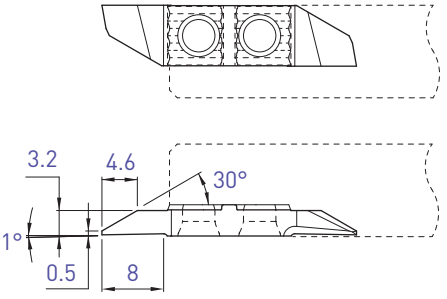
Tournage multifonction
Mehrweck drehen
Multifunction turning

632S / 642S

L



R



Tournage avant
Vorwärts drehen
Front turning

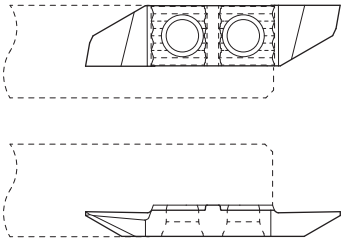
L				R			
Art. N°	TiAlN	N (µk20)	HTA	HN (µk10)	Art. N°	TiAlN	N (µk20)	HTA	HN (µk10)
632S05	■	■			642S05	■	■	□	□

Autre revêtement sur demande / Andere Beschichtung auf Anfrage / Other coating on request

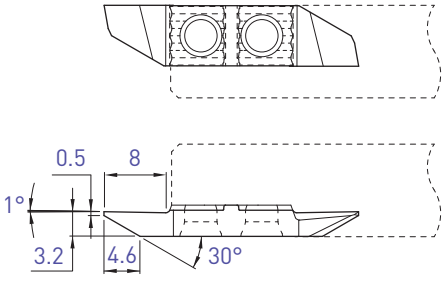
Tournage multifonction
Mehrweck drehen
Multifunction turning

633S / 643S

L



R

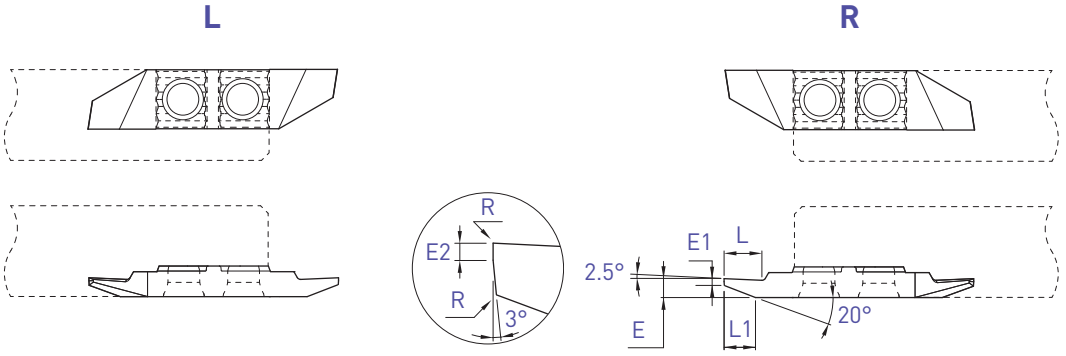


Tournage arrière
Rückwärts drehen
Back turning

L				R			
Art. N°	TiAlN	N (µk20)	HTA	HN (µk10)	Art. N°	TiAlN	N (µk20)	HTA	HN (µk10)
633S05	■	■			643S05	■	■	□	□

■ = disponible / verfügbar / available
□ = selon disponibilité du stock / jenach Lagerverfügbarkeit / depending on stock availability

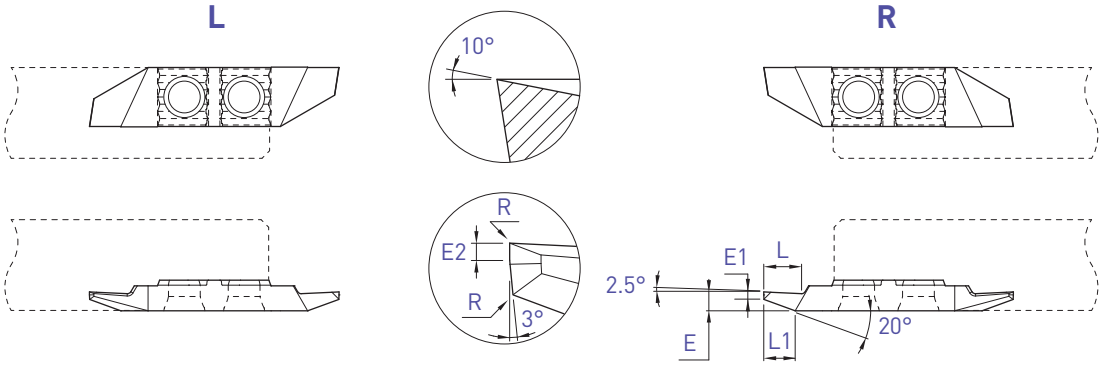
Tournage arrière
Rückwärts drehen
Back turning



L										R				
E1	E2	L	L1	E	R	Art. N°	TiAlN	N (µk20)	HTA	HN (µk10)	Art. N°	TiAlN	N (µk20)	HTA	HN (µk10)
0.5	0.25	3	2.8	1.5	0	**633-0.5**	■	■			**643-0.5**	■	■	□	□
0.5	0.25	3	2.8	1.5	0.08	-					**643-0.5-R08**	■	■	□	□
0.8	0.40	4.5	3.3	2.0	0	-					**643-0.8**	■	■	□	□
0.8	0.40	4.5	3.3	2.0	0.08	-					**643-0.8-R08**	■	■	□	□
1.0	0.40	5	4.2	2.5	0	-					**643-1.0**	■	■	□	□
1.0	0.40	5	4.2	2.5	0.08	-					**643-1.0-R08**	■	■	□	□
1.5	0.50	6	4.2	3.0	0	-					**643-1.5**	■	■	□	□
1.5	0.50	6	4.2	3.0	0.08	-					**643-1.5-R08**	■	■	□	□

Tournage arrière
Rückwärts drehen
Back turning

633X / 643X

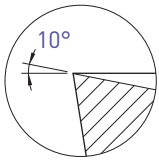


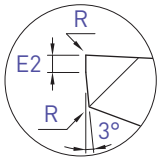
L										R				
E1	E2	L	L1	E	R	Art. N°	TiAlN	N (µk20)	HTA	HN (µk10)	Art. N°	TiAlN	N (µk20)	HTA	HN (µk10)
0.5	0.25	3	2.8	1.5	0	**633X10-0.5**	■	■			**643X10-0.5**	■	■	□	□
0.5	0.25	3	2.8	1.5	0.08	-					**643X10-0.5-R08**	■	■	□	□
0.8	0.40	4.5	3.3	2.0	0	-					**643X10-0.8**	■	■	□	□
0.8	0.40	4.5	3.3	2.0	0.08	-					**643X10-0.8-R08**	■	■	□	□
1.0	0.40	5	4.2	2.5	0	-					**643X10-1.0**	■	■	□	□
1.0	0.40	5	4.2	2.5	0.08	-					**643X10-1.0-R08**	■	■	□	□
1.5	0.50	6	4.2	3.0	0	-					**643X10-1.5**	■	■	□	□
1.5	0.50	6	4.2	3.0	0.08	-					**643X10-1.5-R08**	■	■	□	□

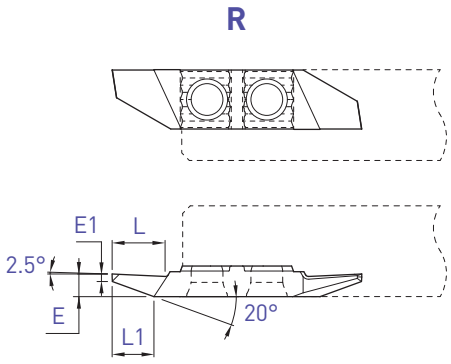
■ = disponible / verfügbar / available
□ = selon disponibilité du stock / jenach Lagerverfügbarkeit / depending on stock availability

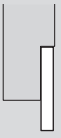
Tournage arrière
Rückwärts drehen
Back turning

643XS







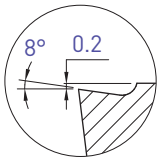


R

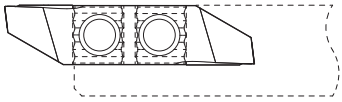
E1	E2	L	L1	E	R	Art. N°	TiAlN	N (µK20)	HTA	HN (µK10)
1.0	0.4	7	5.5	3.0	0	**643X10S-1.0**	■	■	□	□
1.0	0.4	7	5.5	3.0	0.08	**643X10S-1.0-R08**	■	■	□	□

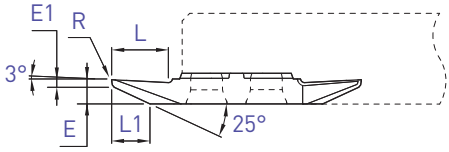
Tournage arrière
Rückwärts drehen
Back turning

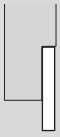
643VX8



R







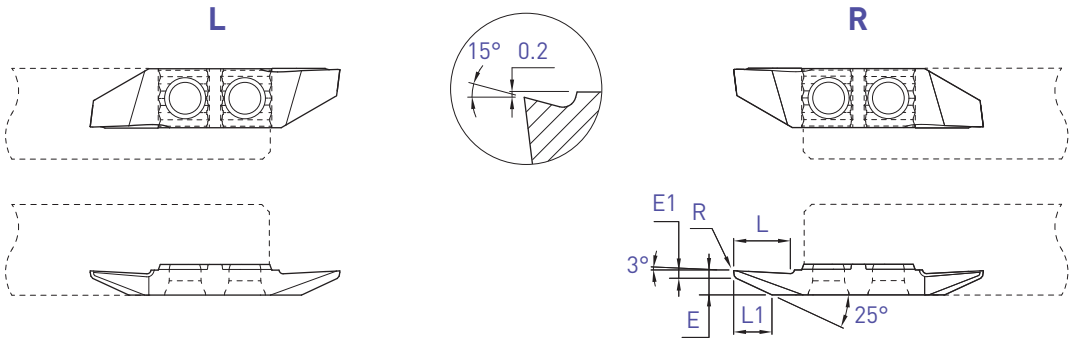
R

E1	L	L1	E	R	Art. N°	TiAlN	N (µK20)	HTA	HN (µK10)
1.0	7.5	5.0	3.2	0	**643VX8**	■	■	□	□
1.0	7.5	5.0	3.2	0.08	**643VX8-R08**	■	■	□	□

■ = disponible / verfügbar / available
□ = selon disponibilité du stock / jenach Lagerverfügbarkeit / depending on stock availability

Tournage arrière
Rückwärts drehen
Back turning

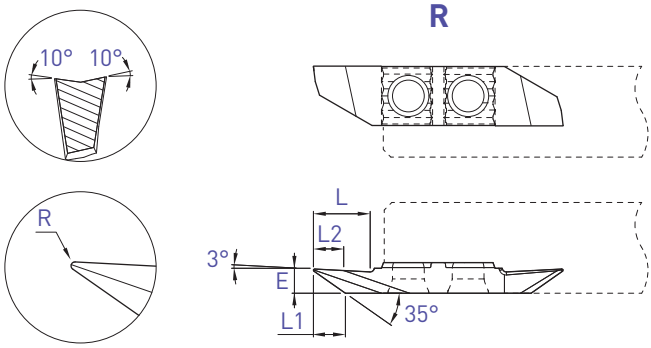
633VX15 / 643VX15

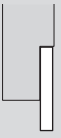


L									R				
E1	L	L1	E	R	Art. N°	TiAlN	N (µk20)	HTA	HN (µk10)	Art. N°	TiAlN	N (µk20)	HTA	HN (µk10)
0.6	7.5	5.2	3.2	0	**633VX15**	■	■			**643VX15**	■	■	□	□
0.6	7.5	5.2	3.2	0.08	-					**643VX15-R08**	■	■	□	□

Tournage arrière
Rückwärts drehen
Back turning

643VUX



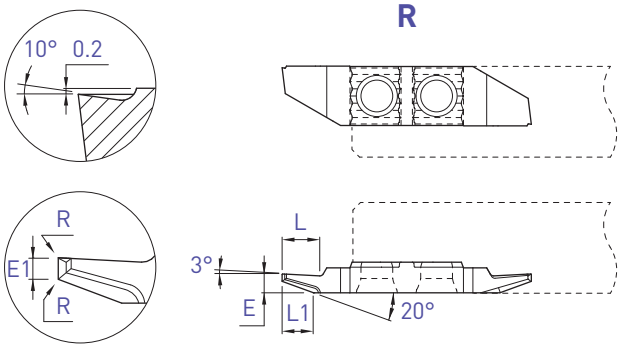


L	L1	L2	E	R	Art. N°	TiAlN	N (µK20)	HTA	HN (µK10)
7.5	4.2	4.0	3.2	0.15	**643VUX10-R15**	■	■	□	□
7.5	3.8	3.8	3.2	0.35	**643VUX10-R35**	■	■	□	□

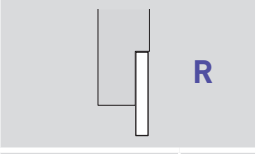
■ = disponible / verfügbar / available
□ = selon disponibilité du stock / jenach Lagerverfügbarkeit / depending on stock availability

Tournage arrière
Rückwärts drehen
Back turning

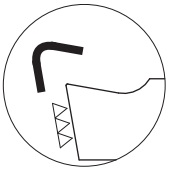
643ZX



Pour un meilleur contrôle des copeaux
Für eine bessere Spankontrolle
For a better chip control



E1	L	L1	E	R	Art. N°	TiAlN N (µk20)
1.0	5	4	2.5	0.01	**643ZX10-1.0**	■
1.0	5	4	2.5	0.08	**643ZX10-1.0-R08**	■

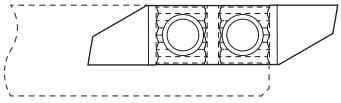


Arête de coupe honée
Gehonte Schneidkante
Honed edge

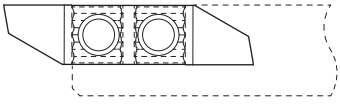
f min: 0.02 mm/U

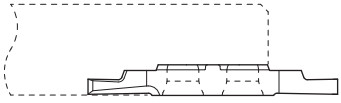
Fonçage-tournage
Einstechen und drehen
Grooving and turning

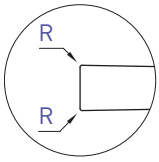
L

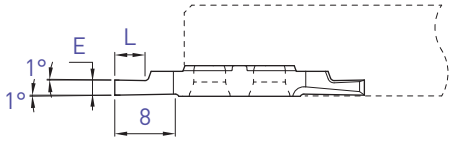


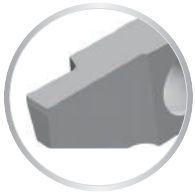
R





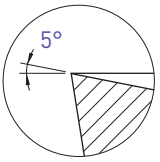


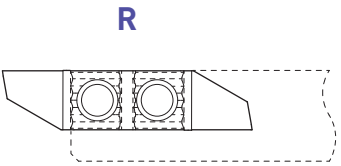


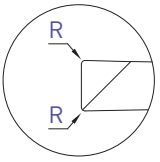


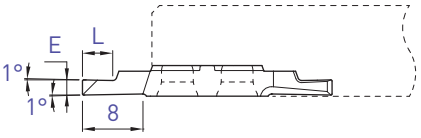
L							R				
E	L	R	Art. N°	TiAlN	N (µk20)	HTA	HN (µk10)	Art. N°	TiAlN	N (µk20)	HTA	HN (µk10)
0.5	1.5	0	**634-0.5**	■	■			**644-0.5**	■	■	□	□
0.6	1.8	0	-					**644-0.6**	■	■	□	□
0.75	2	0	-					**644-0.75**	■	■	□	□
0.8	2	0	**634-0.8**	■	■			**644-0.8**	■	■	□	□
0.9	2.5	0	-					**644-0.9**	■	■	□	□
0.95	3	0	-					**644-0.95**	■	■	□	□
1.0	2.5	0	**634-1.0**	■	■			**644-1.0**	■	■	□	□
1.0	2.5	0.08	-					**644-1.0-R08**	■	■	□	□
1.2	3	0	**634-1.2**	■	■			**644-1.2**	■	■	□	□
1.2	3	0.08	-					**644-1.2-R08**	■	■	□	□
1.5	3	0	**634-1.5**	■	■			**644-1.5**	■	■	□	□
1.5	3	0.08	-					**644-1.5-R08**	■	■	□	□
1.5	3	0.15	-					**644-1.5-R15**	■	■	□	□
1.8	4	0	-					**644-1.8**	■	■	□	□
2.0	4	0	**634-2.0**	■	■			**644-2.0**	■	■	□	□
2.0	4	0.08	-					**644-2.0-R08**	■	■	□	□
2.0	4	0.15	-					**644-2.0-R15**	■	■	□	□
2.5	6	0	**634-2.5**	■	■			**644-2.5**	■	■	□	□
2.5	6	0.08	-					**644-2.5-R08**	■	■	□	□
2.5	6	0.15	-					**644-2.5-R15**	■	■	□	□
3	6	0	**634-3.0**	■	■			**644-3.0**	■	■	□	□
3	6	0.08	-					**644-3.0-R08**	■	■	□	□
3	6	0.15	-					**644-3.0-R15**	■	■	□	□

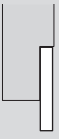
■ = disponible / verfügbar / available
□ = selon disponibilité du stock / jenach Lagerverfügbarkeit / depending on stock availability





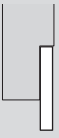






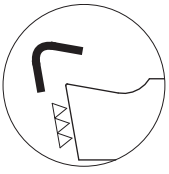
R

E	L	R	Art. N°	TiAlN	N (µK20)	HTA	HN (µK10)
1.5	3	0.08	**644X5-1.5-R08**	■	■	□	□
2	4	0.08	**644X5-2.0-R08**	■	■	□	□
2	4	0.15	**644X5-2.0-R15**	■	■	□	□
2.5	6	0.08	**644X5-2.5-R08**	■	■	□	□
2.5	6	0.15	**644X5-2.5-R15**	■	■	□	□
3	6	0.08	**644X5-3.0-R08**	■	■	□	□
3	6	0.15	**644X5-3.0-R15**	■	■	□	□



R

E	L	R	Art. N°	TiAlN	N (µK20)	HTA	HN (µK10)
1.5	3	0.08	**644X5-1.5-R08-EP**	■	■		
2	4	0.08	**644X5-2.0-R08-EP**	■	■		
2	4	0.15	**644X5-2.0-R15-EP**	■	■		
2.5	6	0.08	**644X5-2.5-R08-EP**	■	■		
2.5	6	0.15	**644X5-2.5-R15-EP**	■	■		
3	6	0.08	**644X5-3.0-R08-EP**	■	■		
3	6	0.15	**644X5-3.0-R15-EP**	■	■		

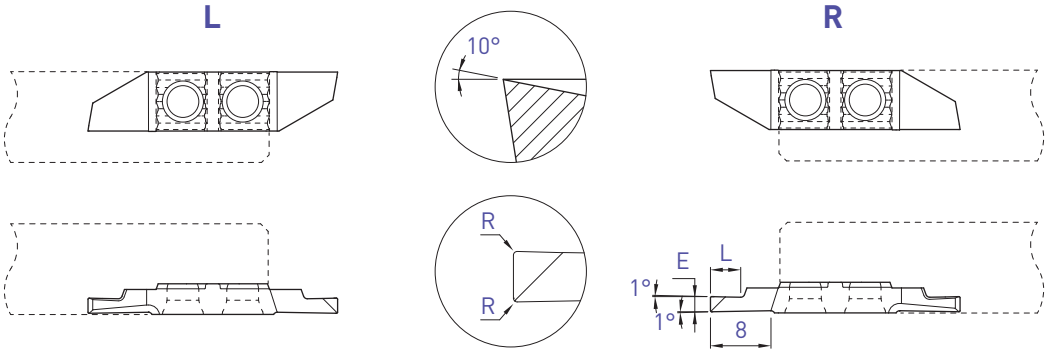


Arête de coupe honée
Gehonte Schneidkante
Honed edge

f min: 0.02 mm/U

Fonçage-tournage
Einstechen und drehen
Grooving and turning

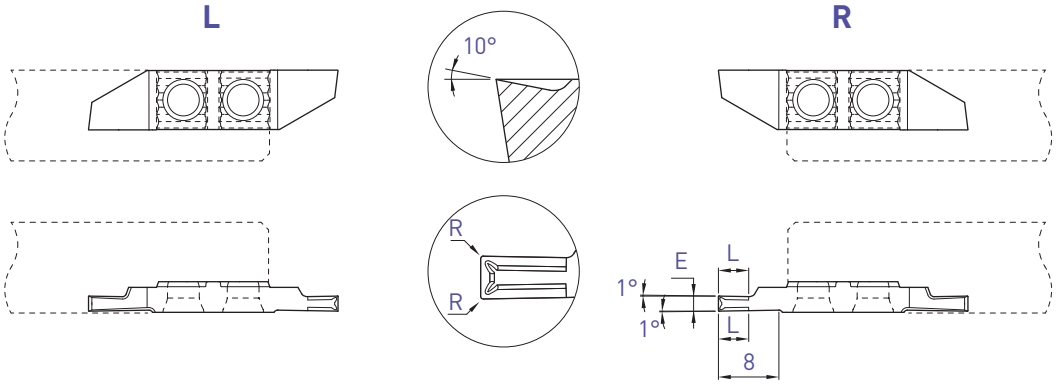
634X10 / 644X10



			L				R			
E	L	R	Art. N°	TiAlN	N (µk20)	HTA	HN (µk10)	Art. N°	TiAlN	N (µk20)	HTA	HN (µk10)
0.8	2	0	634X10-0.8	■	■			644X10-0.8	■	■	□	□
1.0	2.5	0	634X10-1.0	■	■			644X10-1.0	■	■	□	□
1.0	2.5	0.08	634X10-1.0-R08	■	■			644X10-1.0-R08	■	■	□	□
1.2	3	0	-					644X10-1.2	■	■	□	□
1.2	3	0.08	-					644X10-1.2-R08	■	■	□	□
1.5	3	0	634X10-1.5	■	■			644X10-1.5	■	■	□	□
1.5	3	0.08	634X10-1.5-R08	■	■			644X10-1.5-R08	■	■	□	□
1.5	3	0.15	634X10-1.5-R15	■	■			644X10-1.5-R15	■	■	□	□
1.8	4	0	-					644X10-1.8	■	■	□	□
2	4	0	634X10-2.0	■	■			644X10-2.0	■	■	□	□
2	4	0.08	634X10-2.0-R08	■	■			644X10-2.0-R08	■	■	□	□
2	4	0.15	634X10-2.0-R15	■	■			644X10-2.0-R15	■	■	□	□
2.5	6	0	634X10-2.5	■	■			644X10-2.5	■	■	□	□
2.5	6	0.08	634X10-2.5-R08	■	■			644X10-2.5-R08	■	■	□	□
2.5	6	0.15	634X10-2.5-R15	■	■			644X10-2.5-R15	■	■	□	□
3	6	0	634X10-3.0	■	■			644X10-3.0	■	■	□	□
3	6	0.08	634X10-3.0-R08	■	■			644X10-3.0-R08	■	■	□	□
3	6	0.15	634X10-3.0-R15	■	■			644X10-3.0-R15	■	■	□	□

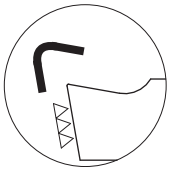
■ = disponible / verfügbar / available
□ = selon disponibilité du stock / jenach Lagerverfügbarkeit / depending on stock availability

634ZXB / 644ZXB



Pour un meilleur contrôle des copeaux
Für eine bessere Spankontrolle
For a better chip-control

			L		R	
E	L	R	Art. N°	TiAlN N (µk20)	Art. N°	TiAlN N (µk20)
1.0	2.5	0.01	**634ZXB10-1.0**	■	**644ZXB10-1.0**	■
1.5	4	0.01	**634ZXB10-1.5**	■	**644ZXB10-1.5**	■
1.5	4	0.08	**634ZXB10-1.5-R08**	■	**644ZXB10-1.5-R08**	■
2.0	4	0.01	**634ZXB10-2.0**	■	**644ZXB10-2.0**	■
2.0	4	0.08	**634ZXB10-2.0-R08**	■	**644ZXB10-2.0-R08**	■
2.0	4	0.15	**634ZXB10-2.0-R15**	■	**644ZXB10-2.0-R15**	■
2.5	5	0.08	**634ZXB10-2.5-R08**	■	**644ZXB10-2.5-R08**	■
2.5	5	0.15	**634ZXB10-2.5-R15**	■	**644ZXB10-2.5-R15**	■
3.0	6	0.08	**634ZXB10-3.0-R08**	■	**644ZXB10-3.0-R08**	■
3.0	6	0.15	**634ZXB10-3.0-R15**	■	**644ZXB10-3.0-R15**	■
3.0	6	0.35	**634ZXB10-3.0-R35**	■	**644ZXB10-3.0-R35**	■

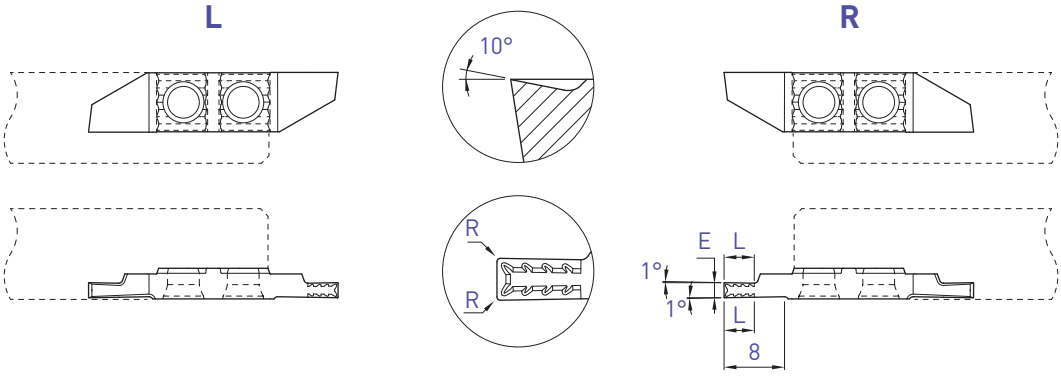


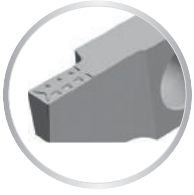
Arête de coupe honée
Gehonte Schneidkante
Honed edge

f min: 0.02 mm/U

Fonçage-tournage
Einstechen und drehen
Grooving and turning

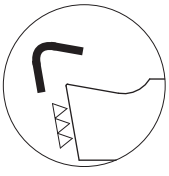
634ZXT / 644ZXT





Pour un meilleur contrôle des copeaux
Für eine bessere Spankontrolle
For a better chip-control

			L		R	
E	L	R	Art. N°	TiAlN N (µk20)	Art. N°	TiAlN N (µk20)
1.0	2.5	0.01	**634ZXT10-1.0**	■	**644ZXT10-1.0**	■
1.5	4	0.01	**634ZXT10-1.5**	■	**644ZXT10-1.5**	■
1.5	4	0.08	**634ZXT10-1.5-R08**	■	**644ZXT10-1.5-R08**	■
2.0	4	0.01	**634ZXT10-2.0**	■	**644ZXT10-2.0**	■
2.0	4	0.08	**634ZXT10-2.0-R08**	■	**644ZXT10-2.0-R08**	■
2.0	4	0.15	**634ZXT10-2.0-R15**	■	**644ZXT10-2.0-R15**	■
2.5	5	0.08	**634ZXT10-2.5-R08**	■	**644ZXT10-2.5-R08**	■
2.5	5	0.15	**634ZXT10-2.5-R15**	■	**644ZXT10-2.5-R15**	■
3.0	6	0.08	**634ZXT10-3.0-R08**	■	**644ZXT10-3.0-R08**	■
3.0	6	0.15	**634ZXT10-3.0-R15**	■	**644ZXT10-3.0-R15**	■
3.0	6	0.35	-		**644ZXT10-3.0-R35**	■



Arête de coupe honée
Gehonte Schneidkante
Honed edge

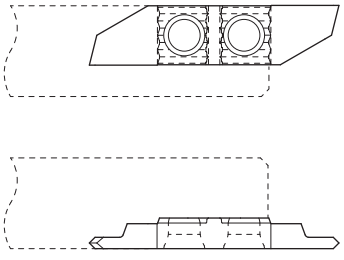
f min: 0.02 mm/U

■ = disponible / verfügbar / available
□ = selon disponibilité du stock / jenach Lagerverfügbarkeit / depending on stock availability

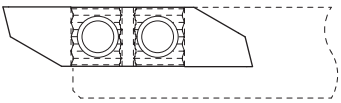
Chanfreinage
Anfasen
Chamfering

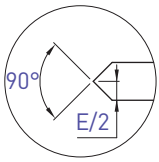
635-90 / 645-90

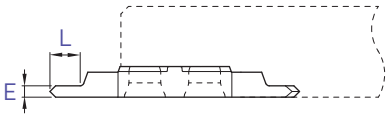
L



R



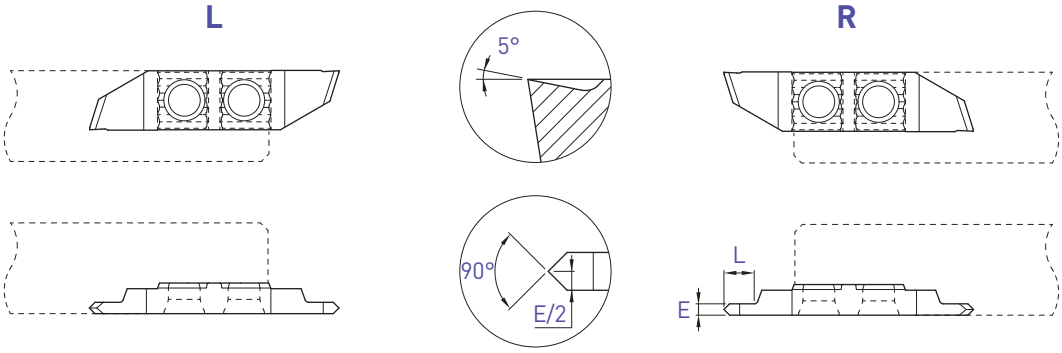




		L			R		
E	L	Art. N°	TiAlN	N (µk20)	Art. N°	TiAlN	N (µk20)
1.5	4	635-90-1.5	■	■	645-90-1.5	■	■

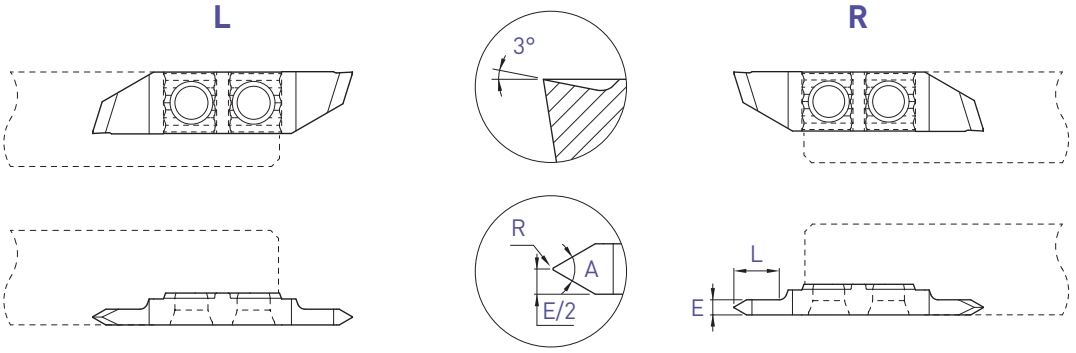
Chanfreinage
Anfasen
Chamfering

635X-90 / 645X-90



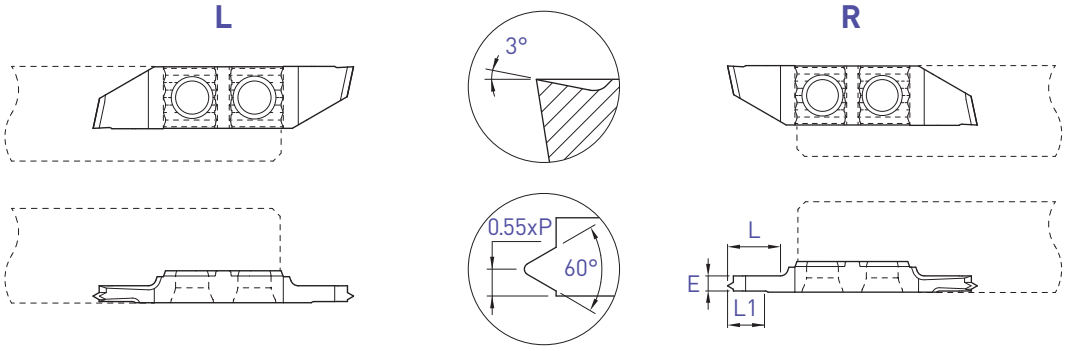
		L			R		
E	L	Art. N°	TiAlN	N (µk20)	Art. N°	TiAlN	N (µk20)
1.5	4	635X5-90-1.5	■	■	645X5-90-1.5	■	■

■ = disponible / verfügbar / available
□ = selon disponibilité du stock / jenach Lagerverfügbarkeit / depending on stock availability



Profil partiel
Teilprofil
Partial profile

				L			R		
A	E	L	R	Art. N°	TiAlN	N (µK20)	Art. N°	TiAlN	N (µK20)
55°	1.5	4	0	**636X3-55-1.5**	■	■	**646X3-55-1.5**	■	■
55°	2.0	6	0.03	**636X3-55-2.0-R03**	■	■	**646X3-55-2.0-R03**	■	■
60°	1.5	4	0	**636X3-60-1.5**	■	■	**646X3-60-1.5**	■	■
60°	2.0	6	0.03	**636X3-60-2.0-R03**	■	■	**646X3-60-2.0-R03**	■	■
60°	2.0	6	0.06	**636X3-60-2.0-R06**	■	■	**646X3-60-2.0-R06**	■	■
60°	3.0	8	0.06	**636X3-60-3.0-R06**	■	■	**646X3-60-3.0-R06**	■	■
60°	3.0	8	0.12	**636X3-60-3.0-R12**	■	■	**646X3-60-3.0-R12**	■	■



Profil complet métrique
Metrisches Vollprofil
Metric full profile

				L			R		
E	L	L1	Pas Steigung Pitch P	Art. N°	TiAlN	N (μk20)	Art. N°	TiAlN	N (μk20)
1.0	3	3	0.25	**636X3-M-0.25**	■	■	**646X3-M-0.25**	■	■
1.0	3	3	0.30	**636X3-M-0.30**	■	■	**646X3-M-0.30**	■	■
1.0	3	3	0.35	**636X3-M-0.35**	■	■	**646X3-M-0.35**	■	■
1.0	3	3	0.40	**636X3-M-0.40**	■	■	**646X3-M-0.40**	■	■
1.0	3	3	0.45	**636X3-M-0.45**	■	■	**646X3-M-0.45**	■	■
1.0	3	3	0.50	**636X3-M-0.50**	■	■	**646X3-M-0.50**	■	■
1.5	5	5	0.60	**636X3-M-0.60**	■	■	**646X3-M-0.60**	■	■
1.5	5	5	0.70	**636X3-M-0.70**	■	■	**646X3-M-0.70**	■	■
1.5	5	5	0.75	**636X3-M-0.75**	■	■	**646X3-M-0.75**	■	■
1.5	5	5	0.80	**636X3-M-0.80**	■	■	**646X3-M-0.80**	■	■
2.0	7	5	1.00	**636X3-M-1.00**	■	■	**646X3-M-1.00**	■	■
2.0	7	5	1.25	**636X3-M-1.25**	■	■	**646X3-M-1.25**	■	■
2.0	7	5	1.50	**636X3-M-1.50**	■	■	**646X3-M-1.50**	■	■

■ = disponible / verfügbar / available
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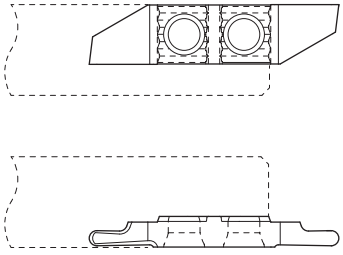
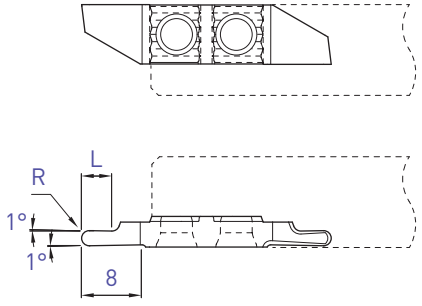
Plaquettes à rayon
Radius Wendeplatten
Radius inserts

637 / 647

L



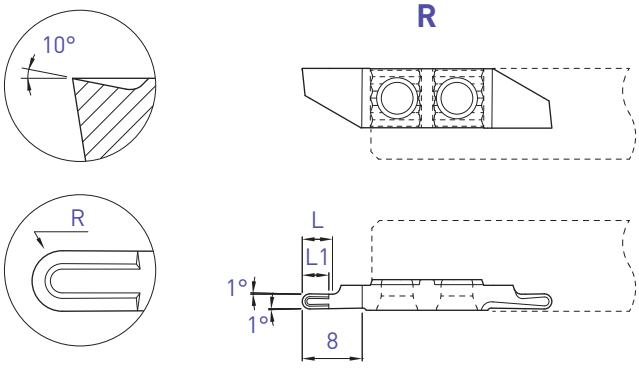
R



		L				R			
R	L	Art. N°	TiAlN	N (µk20)	HTA	HN (µk10)	Art. N°	TiAlN	N (µk20)	HTA	HN (µk10)
0.25	1.5	-					647-R0.25	■	■		
0.4	2	-					647-R0.4	■	■		
0.5	2.5	637-R0.5	■	■			647-R0.5	■	■	□	□
0.6	2.5	-					647-R0.6	■	■		
0.75	3	-					647-R0.75	■	■		
0.8	3	-					647-R0.8	■	■		
1.0	4	637-R1.0	■	■			647-R1.0	■	■		
1.5	6	-					647-R1.5	■	■		

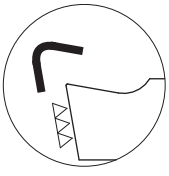
Plaquettes à rayon
Radius Wendeplatten
Radius inserts

647ZX10



Pour un meilleur contrôle des copeaux
Für eine bessere Spankontrolle
For a better chip-control

R	L	L1	Art. N°	TiAlN N (µk20)
1.0	4	3.5	**647ZX10-R1.0**	■
1.5	6	4	**647ZX10-R1.5**	■



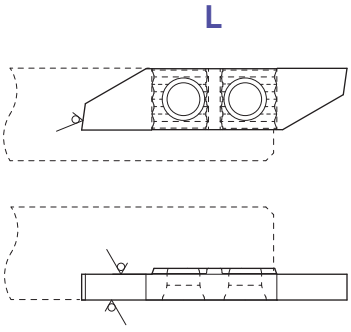
Arête de coupe honée
Gehonte Schneidkante
Honed edge

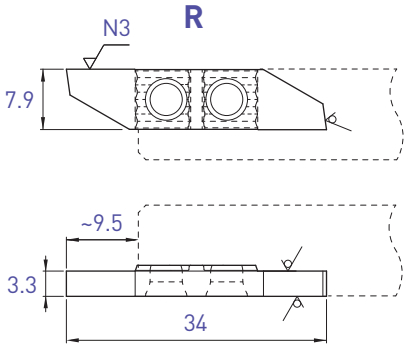
f min: 0.02 mm/U

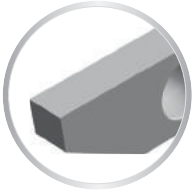
■ = disponible / verfügbar / available
□ = selon disponibilité du stock / jenach Lagerverfügbarkeit / depending on stock availability

Plaquettes ébauches
WSP-Rohlinge
Blank inserts

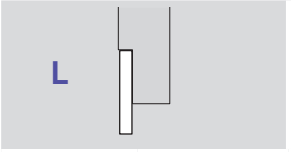
631-EP / 641-EP

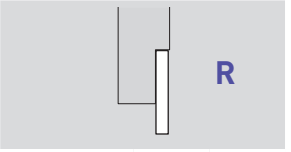






Face de coupe polie
Polierte Schneidfläche
Polished cutting face





Art. N°	TiAlN	N (µk20)	HTA	HN (µk10)	Art. N°	TiAlN	N (µk20)	HTA	HN (µk10)
631-EP	■	■	■	■	641-EP	■	■	■	■