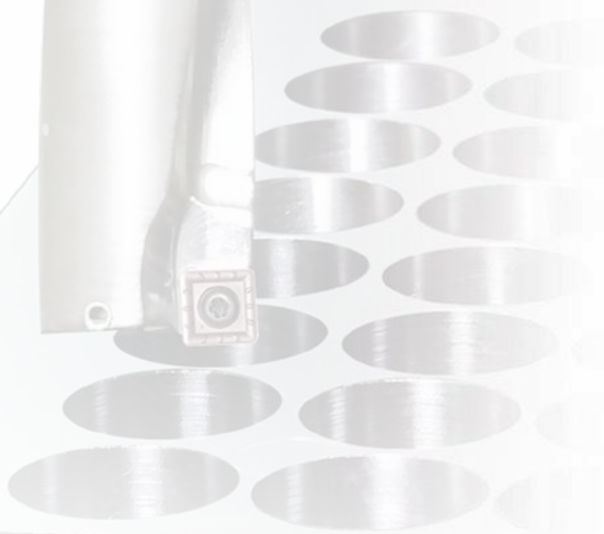


Indexable drills *WSP Bohrer*

ZTD 02/03/04/05

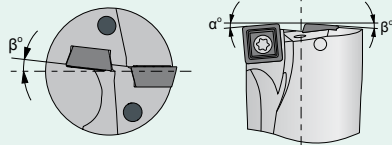


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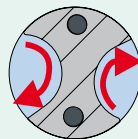
Double helix internal cooling for more effective cooling and good chip removal, especially for in deep hole boring. / *Innenkühlung mit Doppelhelixdesign für effektivere Kühlmittelzufuhr und Spanabfluß speziell bei tieferen Bohrungen.*

Optimised insert seat and clamping, for less vibration and higher tool life. / *Optimierter Plattensitz und Plattenklemmung für vibrationsfreie Bearbeitung mit hohen Standzeiten.*

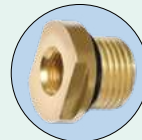


Drill holder with excellent stiffness and special surface coating for higher feed rate and higher productivity. / *Bohrkörper mit exzellenter Torsionssteifigkeit und speziell beschichteter Oberfläche, die höhere Vorschübe und höhere Produktivität ermöglichen.*

Big chip pocket for better chip removal / *Großer Spanraum für optimalen Spanabfluß*



Adapter for innercooling on conventional machines / *Optional mit Adapter für die Innenkühlung bei konventionellen Maschinen*



YB6338

- New coating technology with improved intermediate layer.
- Binder phase enriched surface toughness gradient cemented carbide substrate material, with excellent resistance to flaking properties, wear resistance and heat resistance of ultrafine coating to achieve the perfect combination of hardness and toughness.
- Suitable for high feed rates and high-speed machining indexable insert drills series.
- *Neue Beschichtungstechnologie mit verbessertem Zwischenlayer.*
- *Verbesserte Substratoberflächenhaftung im Zusammenhang mit einem Super-Superfeinkorn-Substrat mit verbesserter Verschleißbeständigkeit und Wärmebeständigkeit erzielt eine ideale Kombination aus Härte und Zähigkeit.*
- *Eignet sich zum Arbeiten mit hoher Schnittgeschwindigkeit und hohem Vorschub.*

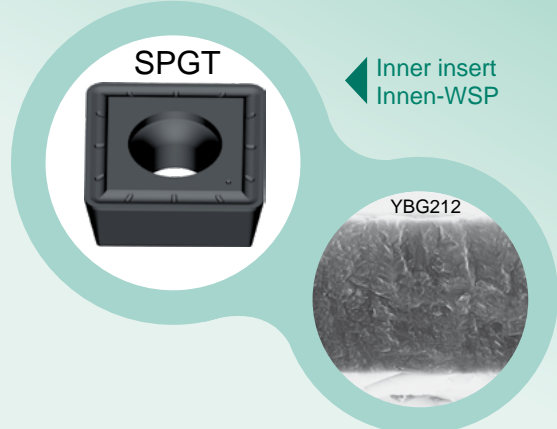


Application Example / Anwendungsbeispiel

Type / Typ	SPGT07T308-PM/YB6338 (outer + inner insert / Außen + Innen -WSP)	Cutting data Schnittdaten	$V_c=150\text{m/min}$ $f=200\text{mm/min}$ $a_p=45\text{mm}$		
Workmaterial Werkstoff	C45R 11201(150-200HB)	Comparison Vergleich	Rake face Spanfläche	Flank face Freifläche	
Cooling system Kühlsystem	Doublehelix internal cooling Doppelhelix-Innenkühlung		YB6338		
Comparison Vergleich	<p>Number of holes Anzahl Bohrungen</p> <p>YB6338: 610 Competitor A Wettbewerber A: 480</p>		Competitor A Wettbewerber A		

Optimised edge design for stable operation with new chip breaker geometry / *Optimierte Schneidkante für stabile Bearbeitung mit neuem Spanbrecher*

Special grades for outer and inner insert for more efficiency by different materials / *Optimierte Sorten für Innen- und Außenplatte für höhere Effizienz bei verschiedenen Materialien*



YBG205

- New nano coating structure with good hardness and wear resistance, but also good toughness. Ultra fine surface design prevent friction and best chip flow. Excellent thermal and chemical wear resistance. Best choice for all material also for stainless steel and high alloy material.
- *Neue Nano-Beschichtungsstruktur mit gleichzeitiger Härte und Verschleißfestigkeit bzw. Zähigkeit. Eine ultra glatte Schichtoberfläche vermindert die Reibung und garantiert einen optimierten Spanabfluß. Eine hervorragende thermische und chemische Widerstandsfähigkeit zeigt diese Sorte besonders bei der Bearbeitung von rostfreien Stählen und warmfesten Legierungen.*

YBG212

- Special Nano TiAlN coating with smooth surface for less friction and better chip flow.
- In combination with super fine grain size substrate good balance between wear resistance and toughness.
- Excellent thermal and oxidation resistance for more stable edge.
- *Spezielle Nano-TiAlN Beschichtung mit sehr glatter Oberfläche für weniger Reibung und bessere Spanabfuhr.*
- *In Verbindung mit dem neuen Superfeinkorn-Substrat ist dies die ideale Kombination aus Verschleißfestigkeit und Zähigkeit.*
- *Hervorragende Temperatur- und Oxidationsbeständigkeit für optimalen Schneidkantenschutz.*

For boring operation the cutting speed at inner insert is lower. Therefore the grade must be more tough to prevent breakage. YBG212 is best choice in that case. YBG205 is excellent for higher wear resistance.

Bei der Bohrbearbeitung ist die Schnittgeschwindigkeit an der Innenschneide niedriger als an der Außenschneide. Bei solch ungünstigen Bearbeitungsbedingungen sollte die Innenschneide eine höhere Zähigkeit haben. Hier ist die YBG212 optimal einzusetzen. Die Außenplatte hat mit der YBG205 eine höhere Verschleißfestigkeit.

Application Example / Anwendungsbeispiel

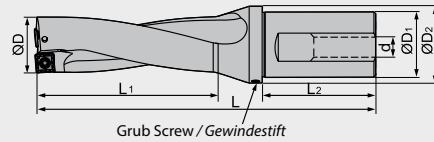
Type / Typ	ZTD04-260-XP25-SP07-02 SPGT07T308-PM / YBG205 (outer insert / Außen-WSP) SPGT07T308-PM / YBG212 (inner insert / Innen-WSP)	Comparison Vergleich	
Workmaterial Werkstoff	C50E 11206(HB240)		
Cooling system Kühlsystem	Doublehelix internal cooling Doppelhelix-Innenkühlung		
Cutting data Schnittdaten	$V_c=130\text{m/min}$ $f=210\text{mm/min}$ $a_p=90\text{mm}$		
Results Ergebnis		Chips formation Spanbildung	

Drilling · Bohren

Indexable drill · Wendeschneidplattenbohrer

ZTD02

2D

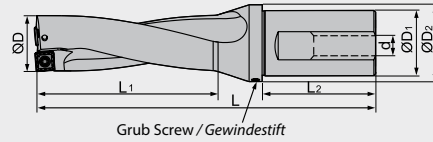


Type Typ	Stock Lager	Dimension Abmessung (mm)						Insert WSP	Screw Schraube	Wrench Schlüssel	Grub Screw Gewindestift	d
		ØD	ØD ₁	ØD ₂	L ₁	L ₂	L					
ZTD02-130-XP20-SP05-02	●	13	20	25	31	50	98	SPGT050204-PM/EM	I60M2x4.3	WT06IP		M13x1
ZTD02-140-XP20-SP05-02	●	14	20	25	33	50	100	SPGT050204-PM/EM	I60M2x4.3	WT06IP	---	
ZTD02-150-XP20-SP05-02	●	15	20	25	35	50	102	SPGT050204-PM/EM	I60M2x4.3	WT06IP		
ZTD02-160-XP20-SP05-02	●	16	20	25	37	50	104	SPGT050204-PM/EM	I60M2x4.3	WT06IP		
ZTD02-170-XP25-SP06-02	●	17	25	32	39	56	117	SPGT060204-PM/EM	I60M2.2x5.5	WT07IP		M16x1,5
ZTD02-180-XP25-SP06-02	●	18	25	32	41	56	119	SPGT060204-PM/EM	I60M2.2x5.5	WT07IP		
ZTD02-190-XP25-SP06-02	●	19	25	32	43	56	121	SPGT060204-PM/EM	I60M2.2x5.5	WT07IP		
ZTD02-200-XP25-SP06-02	●	20	25	32	45	56	123	SPGT060204-PM/EM	I60M2.2x5.5	WT07IP		
ZTD02-210-XP25-SP06-02	●	21	25	32	47	56	125	SPGT060204-PM/EM	I60M2.2x5.5	WT07IP		
ZTD02-220-XP25-SP07-02	●	22	25	32	49	56	127	SPGT07T308-PM/EM	I60M2.5x6.5	WT07IP	---	
ZTD02-230-XP25-SP07-02	●	23	25	32	51	56	129	SPGT07T308-PM/EM	I60M2.5x6.5	WT07IP		
ZTD02-240-XP25-SP07-02	●	24	25	32	53	56	131	SPGT07T308-PM/EM	I60M2.5x6.5	WT07IP		
ZTD02-250-XP25-SP07-02	●	25	25	32	55	56	133	SPGT07T308-PM/EM	I60M2.5x6.5	WT07IP		
ZTD02-260-XP25-SP07-02	●	26	25	32	57	56	135	SPGT07T308-PM/EM	I60M2.5x6.5	WT07IP		
ZTD02-270-XP25-SP07-02	●	27	25	32	59	56	137	SPGT07T308-PM/EM	I60M2.5x6.5	WT07IP		
ZTD02-280-XP32-SP09-02	●	28	32	37	61	60	146	SPGT090408-PM/EM	I60M3.5x8	WT15IP		
ZTD02-290-XP32-SP09-02	●	29	32	37	63	60	148	SPGT090408-PM/EM	I60M3.5x8	WT15IP		
ZTD02-300-XP32-SP09-02	●	30	32	37	65	60	150	SPGT090408-PM/EM	I60M3.5x8	WT15IP		
ZTD02-310-XP32-SP09-02	●	31	32	37	67	60	152	SPGT090408-PM/EM	I60M3.5x8	WT15IP	---	
ZTD02-320-XP32-SP09-02	●	32	32	37	69	60	154	SPGT090408-PM/EM	I60M3.5x8	WT15IP		
ZTD02-330-XP32-SP09-02	●	33	32	37	71	60	156	SPGT090408-PM/EM	I60M3.5x8	WT15IP		
ZTD02-340-XP40-SP11-02	●	34	40	47	73	70	173	SPGT110408-PM/EM	I60M4x10	WT15IP		M6x6 (BSPT)
ZTD02-350-XP40-SP11-02	●	35	40	47	75	70	175	SPGT110408-PM/EM	I60M4x10	WT15IP		
ZTD02-360-XP40-SP11-02	●	36	40	47	77	70	177	SPGT110408-PM/EM	I60M4x10	WT15IP		
ZTD02-370-XP40-SP11-02	●	37	40	47	79	70	179	SPGT110408-PM/EM	I60M4x10	WT15IP		
ZTD02-380-XP40-SP11-02	●	38	40	47	81	70	181	SPGT110408-PM/EM	I60M4x10	WT15IP		
ZTD02-390-XP40-SP11-02	●	39	40	47	83	70	183	SPGT110408-PM/EM	I60M4x10	WT15IP		
ZTD02-400-XP40-SP11-02	●	40	40	47	85	70	185	SPGT110408-PM/EM	I60M4x10	WT15IP		
ZTD02-410-XP40-SP11-02	●	41	40	47	87	70	187	SPGT110408-PM/EM	I60M4x10	WT15IP		
ZTD02-420-XP40-SP14-02	●	42	40	52	89	70	199	SPGT140512-PM/EM	I60M5x13	WT20IP		M8x8 RC 1/4
ZTD02-430-XP40-SP14-02	●	43	40	52	91	70	201	SPGT140512-PM/EM	I60M5x13	WT20IP		
ZTD02-440-XP40-SP14-02	●	44	40	52	93	70	203	SPGT140512-PM/EM	I60M5x13	WT20IP		
ZTD02-450-XP40-SP14-02	●	45	40	52	95	70	205	SPGT140512-PM/EM	I60M5x13	WT20IP		
ZTD02-460-XP40-SP14-02	●	46	40	52	97	70	207	SPGT140512-PM/EM	I60M5x13	WT20IP		
ZTD02-470-XP40-SP14-02	●	47	40	52	99	70	209	SPGT140512-PM/EM	I60M5x13	WT20IP		
ZTD02-480-XP40-SP14-02	●	48	40	52	101	70	211	SPGT140512-PM/EM	I60M5x13	WT20IP		
ZTD02-490-XP40-SP14-02	●	49	40	52	103	70	213	SPGT140512-PM/EM	I60M5x13	WT20IP		
ZTD02-500-XP40-SP14-02	●	50	40	52	105	70	215	SPGT140512-PM/EM	I60M5x13	WT20IP		

● Ex Stock / ab Lager ○ On demand / auf Anfrage

ZTD03

3D



Type Typ	Stock Lager	Dimension Abmessung (mm)						Insert WSP	Screw Schraube	Wrench Schlüssel	Grub Screw Gewindestift	d
		ØD	ØD1	ØD2	L1	L2	L					
ZTD03-130-XP20-SP05-02	●	13	20	25	44	50	111	SPGT050204-PM/EM	I60M2x4.3	WT06IP		M13x1
ZTD03-140-XP20-SP05-02	●	14	20	25	47	50	114	SPGT050204-PM/EM	I60M2x4.3	WT06IP	---	
ZTD03-150-XP20-SP05-02	●	15	20	25	50	50	117	SPGT050204-PM/EM	I60M2x4.3	WT06IP		
ZTD03-160-XP20-SP05-02	●	16	20	25	53	50	120	SPGT050204-PM/EM	I60M2x4.3	WT06IP		
ZTD03-170-XP25-SP06-02	●	17	25	32	56	56	134	SPGT060204-PM/EM	I60M2.2x5.5	WT07IP		M16x1,5
ZTD03-180-XP25-SP06-02	●	18	25	32	59	56	137	SPGT060204-PM/EM	I60M2.2x5.5	WT07IP		
ZTD03-190-XP25-SP06-02	●	19	25	32	62	56	140	SPGT060204-PM/EM	I60M2.2x5.5	WT07IP		
ZTD03-200-XP25-SP06-02	●	20	25	32	65	56	143	SPGT060204-PM/EM	I60M2.2x5.5	WT07IP		
ZTD03-210-XP25-SP06-02	●	21	25	32	68	56	146	SPGT060204-PM/EM	I60M2.2x5.5	WT07IP		
ZTD03-220-XP25-SP07-02	●	22	25	32	71	56	149	SPGT07T308-PM/EM	I60M2.5x6.5	WT07IP	---	
ZTD03-230-XP25-SP07-02	●	23	25	32	74	56	152	SPGT07T308-PM/EM	I60M2.5x6.5	WT07IP		
ZTD03-240-XP25-SP07-02	●	24	25	32	77	56	155	SPGT07T308-PM/EM	I60M2.5x6.5	WT07IP		
ZTD03-250-XP25-SP07-02	●	25	25	32	80	56	158	SPGT07T308-PM/EM	I60M2.5x6.5	WT07IP		
ZTD03-260-XP25-SP07-02	●	26	25	32	83	56	161	SPGT07T308-PM/EM	I60M2.5x6.5	WT07IP		
ZTD03-270-XP25-SP07-02	●	27	25	32	86	56	164	SPGT07T308-PM/EM	I60M2.5x6.5	WT07IP		
ZTD03-280-XP32-SP09-02	●	28	32	37	89	60	174	SPGT090408-PM/EM	I60M3.5x8	WT15IP		
ZTD03-290-XP32-SP09-02	●	29	32	37	92	60	177	SPGT090408-PM/EM	I60M3.5x8	WT15IP		
ZTD03-300-XP32-SP09-02	●	30	32	37	95	60	180	SPGT090408-PM/EM	I60M3.5x8	WT15IP		
ZTD03-310-XP32-SP09-02	●	31	32	37	98	60	183	SPGT090408-PM/EM	I60M3.5x8	WT15IP		
ZTD03-320-XP32-SP09-02	●	32	32	37	101	60	186	SPGT090408-PM/EM	I60M3.5x8	WT15IP		
ZTD03-330-XP32-SP09-02	●	33	32	37	104	60	189	SPGT090408-PM/EM	I60M3.5x8	WT15IP		
ZTD03-340-XP40-SP11-02	●	34	40	47	107	70	207	SPGT110408-PM/EM	I60M4x10	WT15IP		M6x6 (BSPT)
ZTD03-350-XP40-SP11-02	●	35	40	47	110	70	210	SPGT110408-PM/EM	I60M4x10	WT15IP		
ZTD03-360-XP40-SP11-02	●	36	40	47	113	70	213	SPGT110408-PM/EM	I60M4x10	WT15IP		
ZTD03-370-XP40-SP11-02	●	37	40	47	116	70	216	SPGT110408-PM/EM	I60M4x10	WT15IP		
ZTD03-380-XP40-SP11-02	●	38	40	47	119	70	219	SPGT110408-PM/EM	I60M4x10	WT15IP		
ZTD03-390-XP40-SP11-02	●	39	40	47	122	70	222	SPGT110408-PM/EM	I60M4x10	WT15IP		
ZTD03-400-XP40-SP11-02	●	40	40	47	125	70	225	SPGT110408-PM/EM	I60M4x10	WT15IP		
ZTD03-410-XP40-SP11-02	●	41	40	47	128	70	228	SPGT110408-PM/EM	I60M4x10	WT15IP		
ZTD03-420-XP40-SP14-02	●	42	40	52	131	70	241	SPGT140512-PM/EM	I60M5x13	WT20IP		M8x8 RC 1/4
ZTD03-430-XP40-SP14-02	●	43	40	52	134	70	244	SPGT140512-PM/EM	I60M5x13	WT20IP		
ZTD03-440-XP40-SP14-02	●	44	40	52	137	70	247	SPGT140512-PM/EM	I60M5x13	WT20IP		
ZTD03-450-XP40-SP14-02	●	45	40	52	140	70	250	SPGT140512-PM/EM	I60M5x13	WT20IP		
ZTD03-460-XP40-SP14-02	●	46	40	52	143	70	253	SPGT140512-PM/EM	I60M5x13	WT20IP		
ZTD03-470-XP40-SP14-02	●	47	40	52	146	70	256	SPGT140512-PM/EM	I60M5x13	WT20IP		
ZTD03-480-XP40-SP14-02	●	48	40	52	149	70	259	SPGT140512-PM/EM	I60M5x13	WT20IP		
ZTD03-490-XP40-SP14-02	●	49	40	52	152	70	262	SPGT140512-PM/EM	I60M5x13	WT20IP		
ZTD03-500-XP40-SP14-02	●	50	40	52	155	70	265	SPGT140512-PM/EM	I60M5x13	WT20IP		

● Ex Stock / ab Lager ○ On demand / auf Anfrage

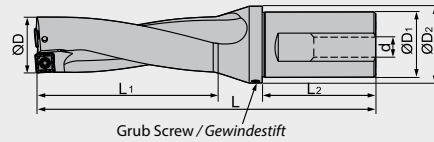
Indexable drills ZTD 03
WPS-Bohrer ZTD 03

Drilling - Bohren

Indexable drill - Wendeschneidplattenbohrer

ZTD04

4D

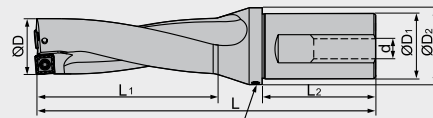


Type Typ	Stock Lager	Dimension Abmessung (mm)						Insert WSP	Screw Schraube	Wrench Schlüssel	Grub Screw Gewindestift	d	
		ØD	ØD ₁	ØD ₂	L ₁	L ₂	L						
ZTD04-130-XP20-SP05-02	●	13	20	25	57	50	124	SPGT050204-PM/EM	I60M2×4.3	WT06IP		M13×1	
ZTD04-140-XP20-SP05-02	○	14	20	25	61	50	128	SPGT050204-PM/EM	I60M2×4.3	WT06IP	---		
ZTD04-150-XP20-SP05-02	○	15	20	25	65	50	132	SPGT050204-PM/EM	I60M2×4.3	WT06IP			
ZTD04-160-XP20-SP05-02	●	16	20	25	69	50	136	SPGT050204-PM/EM	I60M2×4.3	WT06IP			
ZTD04-170-XP25-SP06-02	●	17	25	32	73	56	151	SPGT060204-PM/EM	I60M2.2×5.5	WT07IP		M16×1,5	
ZTD04-180-XP25-SP06-02	●	18	25	32	77	56	155	SPGT060204-PM/EM	I60M2.2×5.5	WT07IP			
ZTD04-190-XP25-SP06-02	●	19	25	32	81	56	159	SPGT060204-PM/EM	I60M2.2×5.5	WT07IP			
ZTD04-200-XP25-SP06-02	●	20	25	32	85	56	163	SPGT060204-PM/EM	I60M2.2×5.5	WT07IP			
ZTD04-210-XP25-SP06-02	●	21	25	32	89	56	167	SPGT060204-PM/EM	I60M2.2×5.5	WT07IP			
ZTD04-220-XP25-SP07-02	●	22	25	32	93	56	171	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP	---		
ZTD04-230-XP25-SP07-02	●	23	25	32	97	56	175	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP			
ZTD04-240-XP25-SP07-02	●	24	25	32	101	56	179	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP			
ZTD04-250-XP25-SP07-02	●	25	25	32	105	56	183	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP			
ZTD04-260-XP25-SP07-02	●	26	25	32	109	56	187	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP			
ZTD04-270-XP25-SP07-02	●	27	25	32	113	56	191	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP			
ZTD04-280-XP32-SP09-02	●	28	32	37	117	60	202	SPGT090408-PM/EM	I60M3.5×8	WT15IP		M22×2	
ZTD04-290-XP32-SP09-02	●	29	32	37	121	60	206	SPGT090408-PM/EM	I60M3.5×8	WT15IP			
ZTD04-300-XP32-SP09-02	●	30	32	37	125	60	210	SPGT090408-PM/EM	I60M3.5×8	WT15IP	---		
ZTD04-310-XP32-SP09-02	●	31	32	37	129	60	214	SPGT090408-PM/EM	I60M3.5×8	WT15IP			
ZTD04-320-XP32-SP09-02	●	32	32	37	133	60	218	SPGT090408-PM/EM	I60M3.5×8	WT15IP			
ZTD04-330-XP32-SP09-02	●	33	32	37	137	60	222	SPGT090408-PM/EM	I60M3.5×8	WT15IP			
ZTD04-340-XP40-SP11-02	●	34	40	47	141	70	241	SPGT110408-PM/EM	I60M4×10	WT15IP		M6×6	
ZTD04-350-XP40-SP11-02	●	35	40	47	145	70	245	SPGT110408-PM/EM	I60M4×10	WT15IP			
ZTD04-360-XP40-SP11-02	●	36	40	47	149	70	249	SPGT110408-PM/EM	I60M4×10	WT15IP			
ZTD04-370-XP40-SP11-02	●	37	40	47	153	70	253	SPGT110408-PM/EM	I60M4×10	WT15IP			
ZTD04-380-XP40-SP11-02	●	38	40	47	157	70	257	SPGT110408-PM/EM	I60M4×10	WT15IP			
ZTD04-390-XP40-SP11-02	●	39	40	47	161	70	261	SPGT110408-PM/EM	I60M4×10	WT15IP			
ZTD04-400-XP40-SP11-02	●	40	40	47	165	70	265	SPGT110408-PM/EM	I60M4×10	WT15IP			
ZTD04-410-XP40-SP11-02	●	41	40	47	169	70	269	SPGT110408-PM/EM	I60M4×10	WT15IP		(BSPT)	
ZTD04-420-XP40-SP14-02	●	42	40	52	173	70	283	SPGT140512-PM/EM	I60M5×13	WT20IP		RC 1/4	
ZTD04-430-XP40-SP14-02	●	43	40	52	177	70	287	SPGT140512-PM/EM	I60M5×13	WT20IP			
ZTD04-440-XP40-SP14-02	●	44	40	52	181	70	291	SPGT140512-PM/EM	I60M5×13	WT20IP			
ZTD04-450-XP40-SP14-02	●	45	40	52	185	70	295	SPGT140512-PM/EM	I60M5×13	WT20IP			
ZTD04-460-XP40-SP14-02	●	46	40	52	189	70	299	SPGT140512-PM/EM	I60M5×13	WT20IP			M8×8
ZTD04-470-XP40-SP14-02	●	47	40	52	193	70	303	SPGT140512-PM/EM	I60M5×13	WT20IP			
ZTD04-480-XP40-SP14-02	●	48	40	52	197	70	307	SPGT140512-PM/EM	I60M5×13	WT20IP			
ZTD04-490-XP40-SP14-02	●	49	40	52	201	70	311	SPGT140512-PM/EM	I60M5×13	WT20IP			
ZTD04-500-XP40-SP14-02	●	50	40	52	205	70	315	SPGT140512-PM/EM	I60M5×13	WT20IP			

● Ex Stock / ab Lager ○ On demand / auf Anfrage

ZTD05

5D



Type Typ	Stock Lager	Dimension Abmessung (mm)						Insert WSP	Screw Schraube	Wrench Schlüssel	Grub Screw Gewindestift	d
		ØD	ØD ₁	ØD ₂	L ₁	L ₂	L					
ZTD05-170-XP25-SP06-02	●	17	25	32	90	56	168	SPGT060204-PM/EM	I60M2.2×5.5	WT07IP		M13×1
ZTD05-180-XP25-SP06-02	●	18	25	32	95	56	173	SPGT060204-PM/EM	I60M2.2×5.5	WT07IP		
ZTD05-190-XP25-SP06-02	●	19	25	32	100	56	178	SPGT060204-PM/EM	I60M2.2×5.5	WT07IP	---	
ZTD05-200-XP25-SP06-02	●	20	25	32	105	56	183	SPGT060204-PM/EM	I60M2.2×5.5	WT07IP		
ZTD05-210-XP25-SP06-02	●	21	25	32	110	56	188	SPGT060204-PM/EM	I60M2.2×5.5	WT07IP		
ZTD05-220-XP25-SP07-02	●	22	25	32	115	56	193	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP		M16×1,5
ZTD05-230-XP25-SP07-02	○	23	25	32	120	56	198	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP		
ZTD05-240-XP25-SP07-02	●	24	25	32	125	56	203	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP	---	
ZTD05-250-XP25-SP07-02	●	25	25	32	130	56	208	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP		
ZTD05-260-XP25-SP07-02	●	26	25	32	135	56	213	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP		
ZTD05-270-XP25-SP07-02	●	27	25	32	140	56	218	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP		M22×2
ZTD05-280-XP32-SP09-02	●	28	32	37	145	60	230	SPGT090408-PM/EM	I60M3.5×8	WT15IP		
ZTD05-290-XP32-SP09-02	●	29	32	37	150	60	235	SPGT090408-PM/EM	I60M3.5×8	WT15IP		
ZTD05-300-XP32-SP09-02	●	30	32	37	155	60	240	SPGT090408-PM/EM	I60M3.5×8	WT15IP	---	
ZTD05-310-XP32-SP09-02	●	31	32	37	160	60	245	SPGT090408-PM/EM	I60M3.5×8	WT15IP		
ZTD05-320-XP32-SP09-02	●	32	32	37	165	60	250	SPGT090408-PM/EM	I60M3.5×8	WT15IP		M6×6 (BSPT) RC 1/4
ZTD05-330-XP32-SP09-02	●	33	32	37	170	60	255	SPGT090408-PM/EM	I60M3.5×8	WT15IP		
ZTD05-340-XP40-SP11-02	●	34	40	47	175	70	275	SPGT110408-PM/EM	I60M4×10	WT15IP		
ZTD05-350-XP40-SP11-02	●	35	40	47	180	70	280	SPGT110408-PM/EM	I60M4×10	WT15IP		
ZTD05-360-XP40-SP11-02	●	36	40	47	185	70	285	SPGT110408-PM/EM	I60M4×10	WT15IP		
ZTD05-370-XP40-SP11-02	●	37	40	47	190	70	290	SPGT110408-PM/EM	I60M4×10	WT15IP		M8×8 (BSPT) RC 1/4
ZTD05-380-XP40-SP11-02	●	38	40	47	195	70	295	SPGT110408-PM/EM	I60M4×10	WT15IP		
ZTD05-390-XP40-SP11-02	●	39	40	47	200	70	300	SPGT110408-PM/EM	I60M4×10	WT15IP		
ZTD05-400-XP40-SP11-02	●	40	40	47	205	70	305	SPGT110408-PM/EM	I60M4×10	WT15IP		
ZTD05-410-XP40-SP11-02	●	41	40	47	210	70	310	SPGT110408-PM/EM	I60M4×10	WT15IP		
ZTD05-420-XP40-SP14-02	●	42	40	52	215	70	325	SPGT140512-PM/EM	I60M5×13	WT20IP		M8×8 (BSPT) RC 1/4
ZTD05-430-XP40-SP14-02	●	43	40	52	220	70	330	SPGT140512-PM/EM	I60M5×13	WT20IP		
ZTD05-440-XP40-SP14-02	●	44	40	52	225	70	335	SPGT140512-PM/EM	I60M5×13	WT20IP		
ZTD05-450-XP40-SP14-02	●	45	40	52	230	70	340	SPGT140512-PM/EM	I60M5×13	WT20IP		
ZTD05-460-XP40-SP14-02	●	46	40	52	235	70	345	SPGT140512-PM/EM	I60M5×13	WT20IP		
ZTD05-470-XP40-SP14-02	●	47	40	52	240	70	350	SPGT140512-PM/EM	I60M5×13	WT20IP		
ZTD05-480-XP40-SP14-02	●	48	40	52	245	70	355	SPGT140512-PM/EM	I60M5×13	WT20IP		
ZTD05-490-XP40-SP14-02	●	49	40	52	250	70	360	SPGT140512-PM/EM	I60M5×13	WT20IP		
ZTD05-500-XP40-SP14-02	●	50	40	52	255	70	365	SPGT140512-PM/EM	I60M5×13	WT20IP		

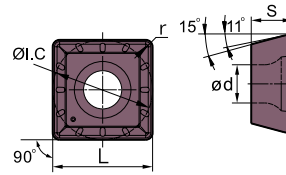
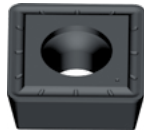
● Ex Stock / ab Lager ○ On demand / auf Anfrage

Indexable drills ZTD 05
WPS-Bohrer ZTD 05

Drilling - Bohren

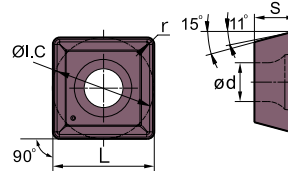
Indexable drill · Wendeschneidplattenbohrer

PM For general steel machining / Für die allgemeine Stahlbearbeitung



Type Typ	Dimension Abmessung (mm)					Grade / Sorte		
						PVD		CVD
	L	ØI.C	s	ød	r	YBG205 outer insert Außenschneide	YBG212 inner insert Innenschneide	YB6338
SPGT050204-PM	5	5	2.38	2.2	0.4	•	•	•
SPGT060204-PM	6	6	2.38	2.6	0.4	•	•	•
SPGT07T308-PM	7.94	7.94	3.97	2.8	0.8	•	•	•
SPGT090408-PM	9.8	9.8	4.3	4.2	0.8	•	•	•
SPGT110408-PM	11.5	11.5	4.76	4.4	0.8	•	•	•
SPGT140512-PM	14.3	14.3	5.2	5.75	1.2	•	•	•

EM For soft and stainless steel / Für weichen und rostfreien Stahl



Type Typ	Dimension Abmessung (mm)					Grade / Sorte	
						PVD	
	L	ØI.C	s	ød	r	YBG205 outer insert Außenschneide	YBG212 inner insert Innenschneide
SPGT050204-EM	5	5	2.38	2.2	0.4	•	•
SPGT060204-EM	6	6	2.38	2.6	0.4	•	•
SPGT07T308-EM	7.94	7.94	3.97	2.8	0.8	•	•
SPGT090408-EM	9.8	9.8	4.3	4.2	0.8	•	•
SPGT110408-EM	11.5	11.5	4.76	4.4	0.8	•	•
SPGT140512-EM	14.3	14.3	5.2	5.75	1.2	•	•

● Ex Stock / ab Lager ○ On demand / auf Anfrage

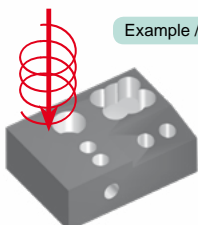
Adapter for innercooling on conventional machine / Adapter für Innenkühlung bei konventionellen Maschinen (Please order separately / Bitte separat bestellen)

Shank-Type Schaft-Typ	Adapter	D1	L1	L	H	d	(BSPT) Rc
XP20	ZTD-XP20-THIN	18	4.23	13	14	M13x1	1/8
XP25	ZTD-XP25-THIN	22	4.65	17	17	M16x1.5	1/8
XP32	ZTD-XP32-THIN	29	5.65	21	22	M22x2	1/4

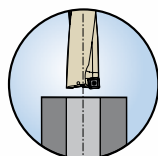
Material Overview - Material Übersicht

✓ = Very suitable · Sehr empfohlen
✓ = Suitable · Empfohlen

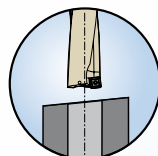
Grade Sorte	Workpiece material · Werkstückstoff										
	Mild steel Baustahl HB≤180	Carbon steel Alloy Steel Kohlenstoff-, Legierter Stahl	Hardened steel · Gehärteter Stahl			Stainless steel Rostfreier Stahl	Cast iron Gusseisen	Nodular cast iron GGG Kugelgraphitguss	Aluminum alloy Aluleg.	Copper alloy Kupferleg.	Heat resist. alloy Wärmefeste Leg.
			~40HRC	~50HRC	~60HRC						
SPGT*- PM	✓	✓				✓	✓	✓			
SPGT*- EM	✓	✓				✓				✓	



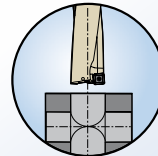
Example / Beispiel



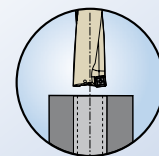
1 General boring
Allgemeine Bohrung



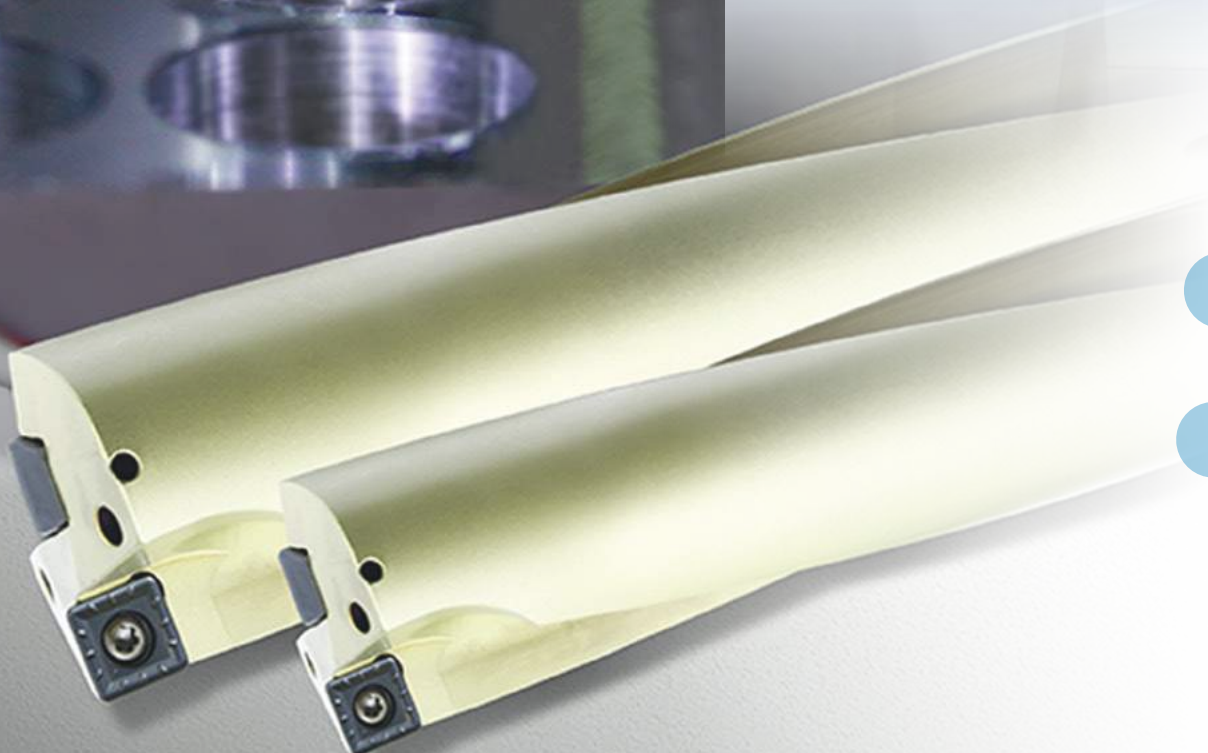
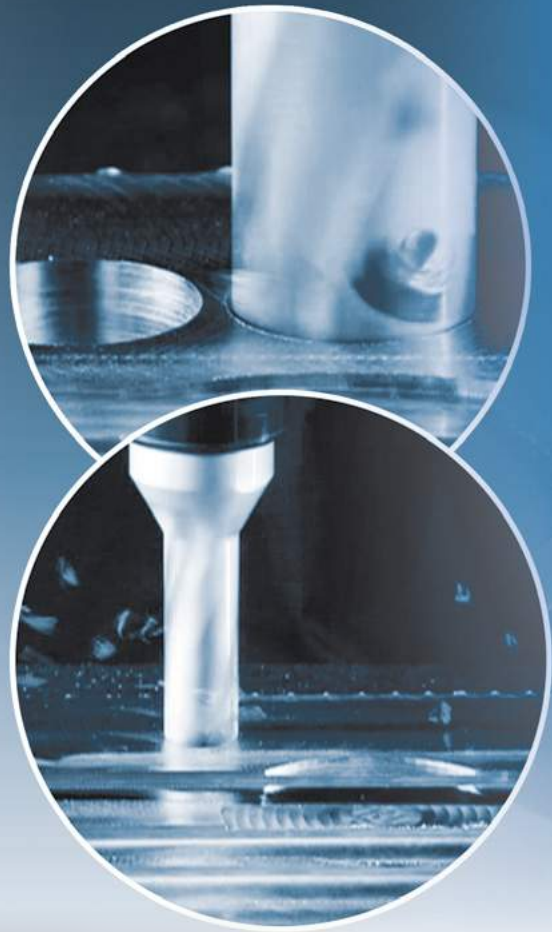
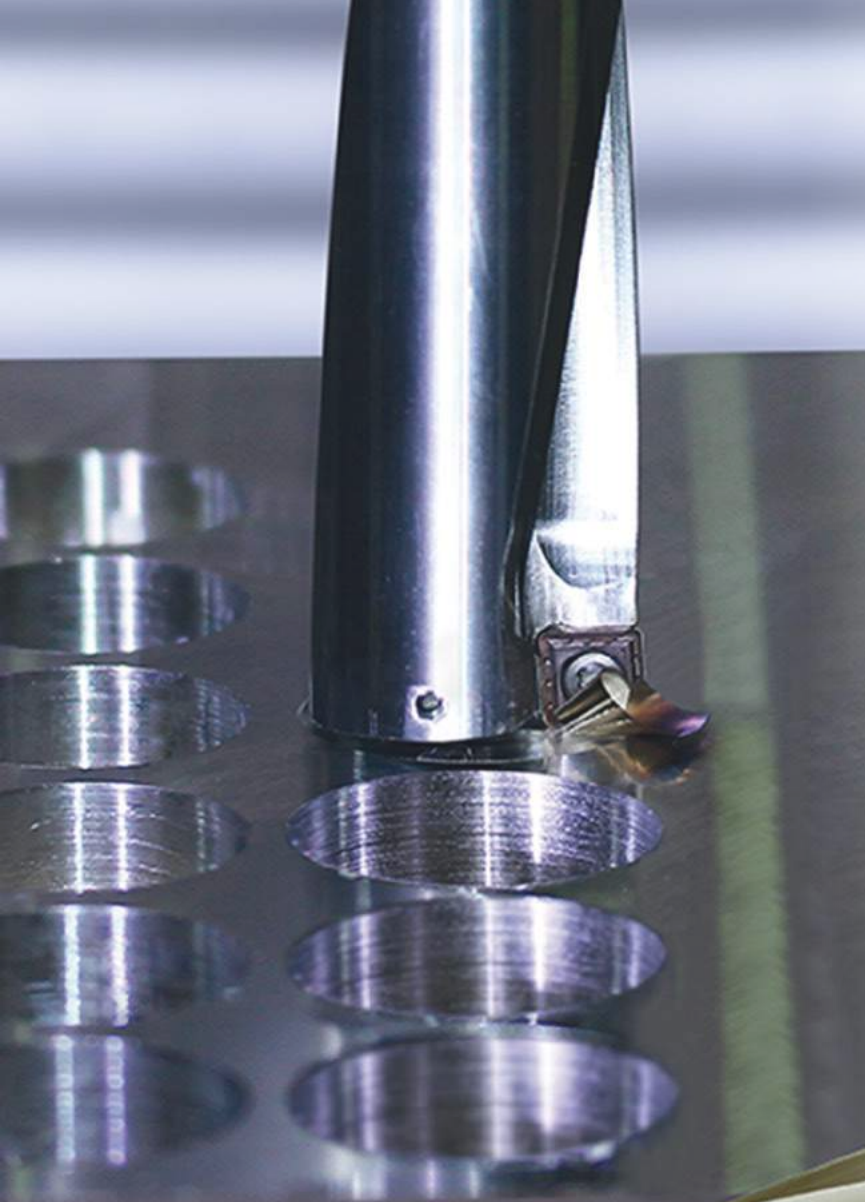
2 Inclined plane
Schiefe Ebene



3 Cross hole
Kreuzbohrung



4 expansion boring
Expansionsbohrung



Drilling tools



Bohrwerkzeuge





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ZTD Indexable drills
ZTDWSP Bohrer



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