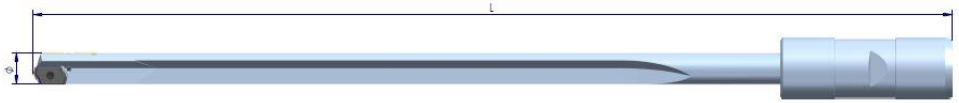
Single lip drill with indexable inserts WP-ELB Series 10

TBT TIEFBOHRTECHNIK



Drill		Indexable cutting insert	Screw Torx Plus®	Guide pads	Screw Torx Plus®	Adjusting shim
from	to					
12.00	13.99	**TSTS-CB2-00** TSTS000199	**6IP M2,2x4** TSTS000613	**TSTS-GC04A-P** TSTS000326	**6IP M2,2x4** TSTS000613	**TSTS-S04**
14.00	15.09	**TSTS-CB2-01** TSTS000094	**6IP M2,2x4,6** TSTS000614	**TSTS-GC05A-P** TSTS000091	**6IP M2,2x4,6** TSTS000633	**TSTS-S05**
15.10	17.39	**TSTS-CB2-02** TSTS000095	**7IP M2,5x5** TSTS000615		**7IP M2,5x5** TSTS000615	
17.40	19.79	**TSTS-CB2-05** TSTS000098				
19.80	23.89	**TSTS-CB2-07** TSTS000100	**7IP M3x6** TSTS000616	**TSTS-GC06-P** TSTS000016	**7IP M3x6** TSTS000616	**TSTS-S06**
23.90	28.09	**TSTS-CB2-08** TSTS000181				

Important Information

All specified values are intended solely as a guideline and may vary depending on the application. For special applications please contact the TBT tool Service

TBT is not liable for improper use of the tools and for any insufficient mechanical conditions or operating errors!
Undue use can cause severe damages and be hazardous or even fatal for operating staff.

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Operational Instructions

For indexable gun drills TBT WP-ELB series 10

Introduction

TBT indexable gun drill Series 10 can be applied in deep hole machines, machining centers and lathes with internal coolant supply.

Our indexable gun drills offer in addition to the high efficiency important advantages in handling:

- Quick change of wear parts
- No regrinding necessary
- Easy inventory of wear parts

Thus the TBT WP-ELB series 10 are particularly suitable for minimizing the non-productive times.

Please use only original TBT wear parts to ensure proper functioning.

Cutting plate and guide pads are indexable.
At the end of life time the cutting plate and / or the guide pads can be detached. turned by 180° and re-inserted.

Assembly

To tighten the screws we recommend using a torque screwdriver (available as optional)
A simple TorxPlus® screwdriver is supplied with each new tool.

Please observe the following values:

Drill Ø	Screw	Torx Plus head	Torque
12.00 – 15.09	M 2.2	6IP	0,8 Nm
15.10 – 19.79	M 2.5	7IP	1,2 Nm
19.80 – 28.09	M 3.0	7IP	1,4 Nm

Bore quality

Using standard tools. bore diameter tolerances up to IT8 are attainable.
In individual cases IT7 can be reached after consultation and possible fine adjustment of the tool.

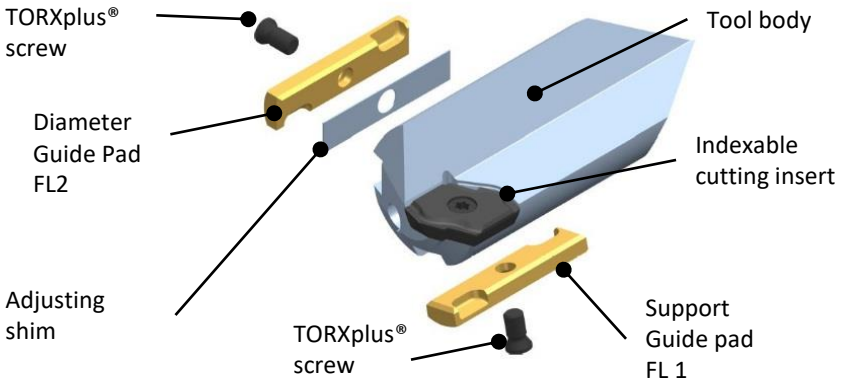
Tool design

TBT indexable gun drills consist of the tool body in which the wear parts such as insert and guide pads are screw fitted. See below schematic illustrations for both the short and long body version including their wear parts.
An adjusting shim below the diameter guide pad is used to achieve a higher accuracy of the drilling diameter.

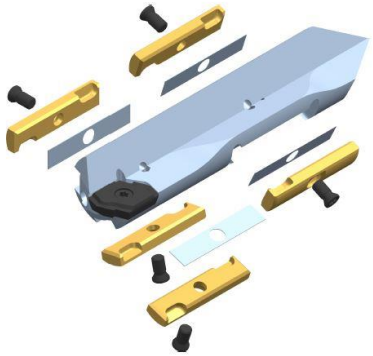
For normal applications it is not necessary to adjust the tool.
For higher accuracy requirements, this may be necessary.

It is always recommended to perform a fitting check of pilot hole or drill bush with the tool before initiating the drilling process.

Standard version with short body
for standard deep drilling tasks



Version with long body
For cross drilling and drilling tasks with special requirements in terms of guide behavior.



In certain cross drilling operations, the guide pads of the guide part can be fitted with thicker adjusting shims in order to achieve a tighter guidance. The feed rates have to be reduced accordingly.

Such modified tool systems need to be checked for accuracy fit prior to their use.

Operating conditions

The maximum potential process parameters depend on a variety of factors e.g. work piece material. required hole quality in terms of diameter tolerance and drift. machine and tool diameter.

Furthermore. there is always a conflict of objectives between the highest possible feed rate and tool life.

This has to be considered when selecting the process parameters.
The indicated values can therefore constitute only guidelines and differ depending on the application!

Preferably suitable deep hole drilling oil should be used. or an emulsion with EP additives and an oil content of at least 15% to ensure proper functionality of the tools.

Material	Cutting Speed V_c in m/min	Feed v_f in mm/U		
		Ø 12 to 16	Ø 16 to20	Ø 20 to 28
Construction and cutting steel δB < 700 N/mm²	60 – 90	0.08 - 0.10	0.08 - 0.16	0.10 - 0.18
Heat-treated steel δB < 900 N/mm2	70 – 90	0.06 - 0.12	0.08 - 0.16	0.10 - 0.18
Heat-treated steel δB < 1100 N/mm2	60 – 80	0.06 - 0.10	0.08 - 0.14	0.14 - 0.16
Case-hardened steel δB < 700 N/mm2	60 – 80	0.06 - 0.12	0.10 - 0.16	0.14 - 0.18
Case-hardened steel δB < 1100 N/mm2	60 – 80	0.06 - 0.10	0.08 - 0.12	0.10 - 0.16
Nitriding steel δB < 1100 N/mm2	50 – 70	0.06 - 0.10	0.08 - 0.12	0.10 - 0.16
Ferritic stainless steel (heat resistant)	50 – 60	0.06 - 0.10	0.08 - 0.12	0.12 - 0.18
Austenitic stainless steel	50 – 60	0.06 - 0.08	0.08 - 0.10	0.10 - 0.14
High Tempered Alloy Ni-Co-Fe base	50 – 70	0.06 - 0.08	0.08 - 0.10	0.10 - 0.14
Cast iron unalloyed. and alloyed.	70 – 100	0.08 - 0.12	0.10 - 0.16	0.16 - 0.20
GGG, GGL, GTS, GTW,	60 – 80	0.06 - 0.10	0.10 - 0.16	0.16 - 0.20
Aluminium Alloys (depending on the Si content)	90 – 150	0.08 - 0.12	0.10 - 0.18	0.16 - 0.22