

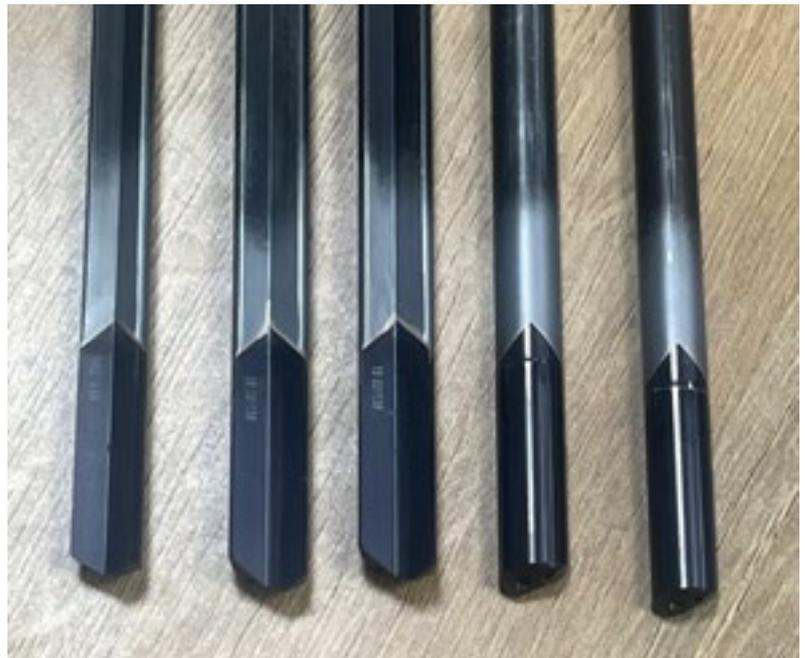
GUN DRILLING OF TOOLOX® 44

Toolox® is an excellent steel for the production of high performance machine components as well as mould and dies. Toolox® is based on an ultra-clean steel metallurgical concept that gives it extraordinary properties. Combining high strength with high toughness and fatigue resistance. The homogenous structure as well as the low carbon and alloy concept gives excellent machining properties.

Most products made in Toolox® are machined. Toolox® 33 has much better machining properties than other steels with same hardness. The parameters can be increased, increased lifetime of inserts and the geometrical stability make it possible to increase productivity in an impressive way. Toolox® 44 despite being delivered with 45 HRC, also machines effectively with modern machining and tooling. Some operations might create difficulties for a new customer. One of those is Gun drilling.

To better give gun-drilling recommendations to the customers, testing was organized with Chinese gun drilling specialist YuanChang Gun Drill Company. YuanChang not only supplies the highest possible quality Tooling but also has the knowledge crucial for succesful gun drilling.

After extensive testing YuanChang found the conditions in below table optimum for Toolox® 44. Insert code and Balzers coating name used was of a type suitable for machining stainless steel. Very important also for a good result is to use 100 % drilling oil. Avoiding any kind of mixture.



The results from the YuanChang gun drilling testing shows that long holes in Toolox® 44 can be made in a perfect way without any complications. As long as the right parameters are used and top tools are implemented.

Hole diameter (mm)	RPM	Feed (mm/min)	Insert regrinding interval (mm)	Cooling oil pressure (Bar)
Φ3	3200	20~30	200-500	100-120
Φ4	2400	20~30	200-501	80-100
Φ5	1900	20~30	200-502	60-80
Φ6	1600	20~30	200-503	60-80
Φ7	1350	20~30	200-504	50-70
Φ8	1200	20~30	200-505	50-70
Φ9	1050	20~30	200-506	40-60
Φ10	1550	60~75	200-507	40-60
Φ11	1450	55~70	200-508	30-50
Φ12	1300	50~65	200-509	30-50
Φ13	1200	50~65		20-40
Φ14	1140	45~60		20-40
Φ15	1060	40~55		10-30
Φ16	990	40~55		10-30
Φ17	940	40~55		10-30
Φ18	880	35~50		
Φ19	840	35~50		
Φ20	800	40~55		
Φ21	760	40~55		
Φ22	725	40~55		
Φ23	690	40~55		
Φ24	660	40~55		
Φ25	635	45~60		
Φ26	610	45~60		
Φ27	590	45~60		
Φ28	570	45~60		
Φ29	550	40~55		
Φ30	530	40~55		

Availability

Plates and blocks from 6 – 320 mm. Bars between 21 and 405 mm with lengths up to 5000 mm. Toolox® is available from the local SSAB stock. Cut pieces of Toolox® can be obtained through the well-established global network of Approved Toolox® Distributors. Both SSAB and distributors can also provide you with good application support as well as technical guidelines.

Contact and more information

Contact your local sales representative to learn more, visit www.toolox.com or consult Tech Support at: help@ssab.com