

DRILL DEEP INTO THE FUTURE



**UNITAC Drill - supports
the highest level of safety and comfort
in the world**

Japanese Shinkansen (bullet train) is known as the world's safest and most comfortable transportation system. UNITAC's drill has 100% share in manufacturing the axle of Shinkansen due to its high accuracy.

Durable and reliable, Unitac deep hole drills support the tube sheet industry

Deep Hole Drilling - One of the most difficult techniques in machining

In DH drilling applications failure is not an option. Especially in the high quality and volume requirement nuclear power industry.

A major large component, the tube sheet, located inside the steam generator, is one of the most important parts of the framework of a nuclear power generator. It is usually made of inconel or a high resistant nickel alloy with a low carbon steel cladding.

The number of required holes in a tube sheet is a significant challenge because the holes must be consistent and accurate.

Not even one imperfect hole is permitted. One standard tube sheet can contain from 10,000 to 30,000 holes. Tubes are then set into the holes for heat regulation.



Solving Big Problems with a Small Drill

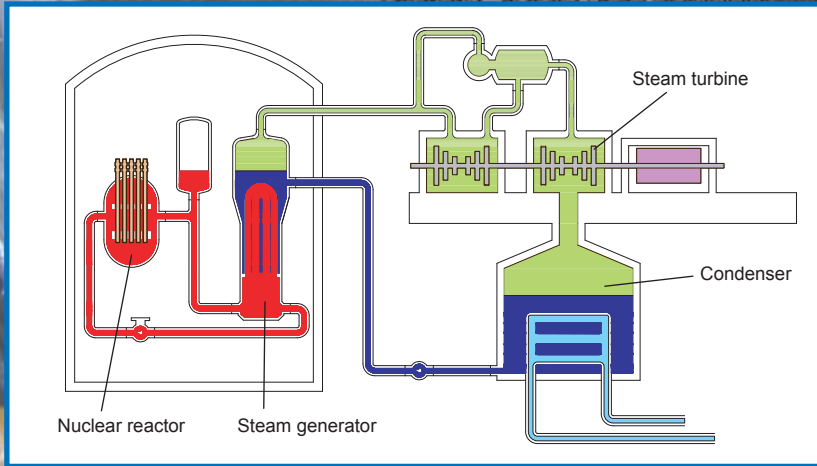
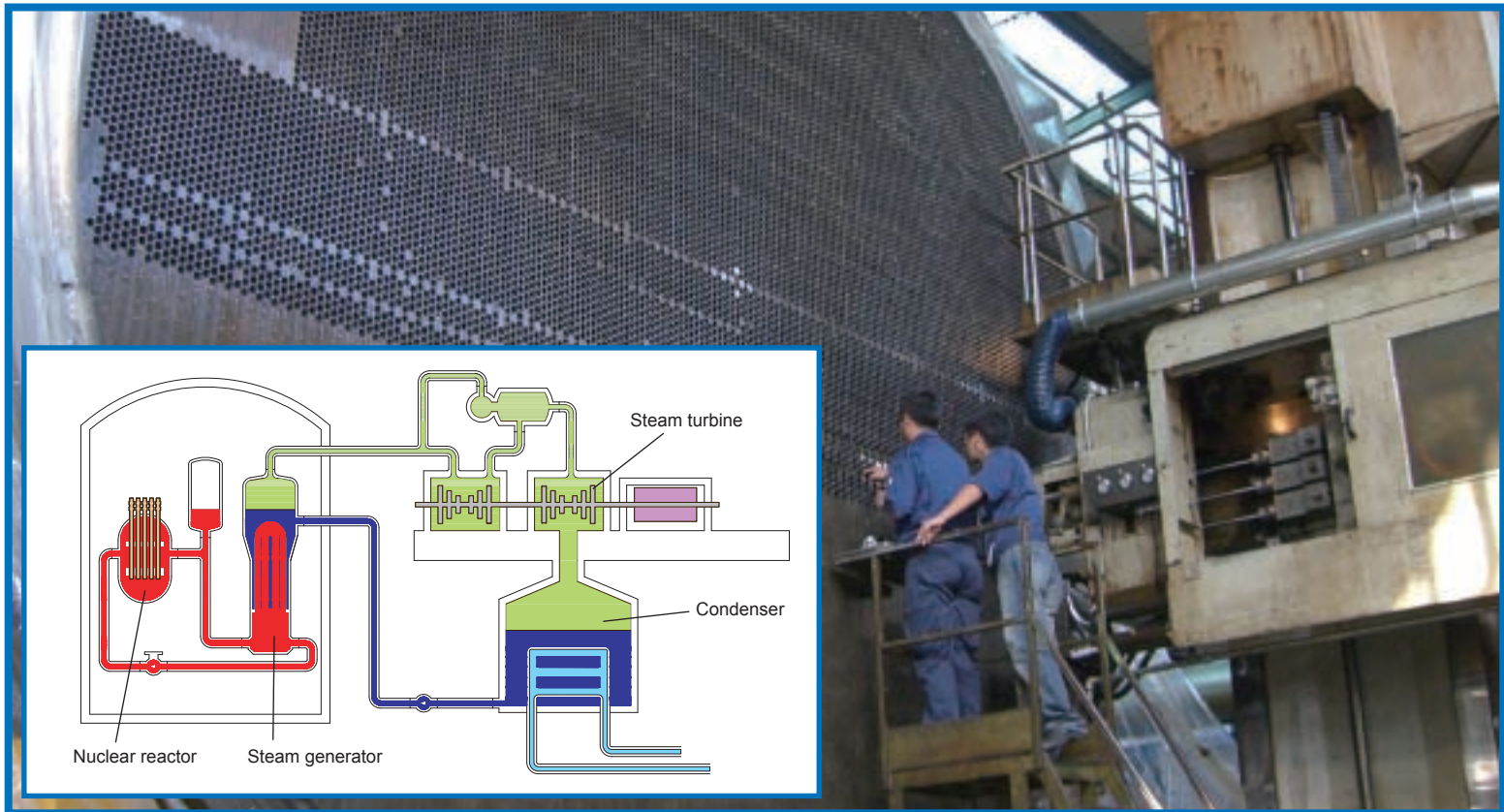
Unitac's drill meets the severe requirements of the nuclear power industry and we are a top supplier worldwide to this industry.

The cutting edge geometry has been designed precisely to ensure good chip control with uniform and precise tight tolerance holes.

The holes produced by Unitac's drill totally satisfies the high level demands of these nuclear power generators.

The picture on the left can be said to be the ultimate drill, a quarter century of Unitac's manufacturing experience.

Unitac has taken this advanced technology validated by the nuclear power industry and incorporated it into all of our products for use in every application.



The steam generator

The reactor core is considered to be the heart of nuclear power generation. The steam generator is the second most important component. It is responsible for safely using the heat produced by the core to convert water into steam. The tube sheet which is located in the steam generator is responsible for supporting the pipes which are used for heat transfer, a very critical role.

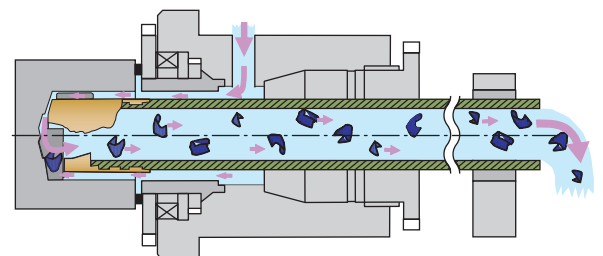
Single Tube System & Double Tube System

Single Tube System (STS)

The STS system may also be referred to as the BTA system in the deep hole drilling process.

A large volume of coolant is pumped under high pressure to the cutting drill in the workpiece.

Chips are then forced out through the drill tube at the back. Drilling depths of 10 to 300 times the diameter of the hole can be achieved.

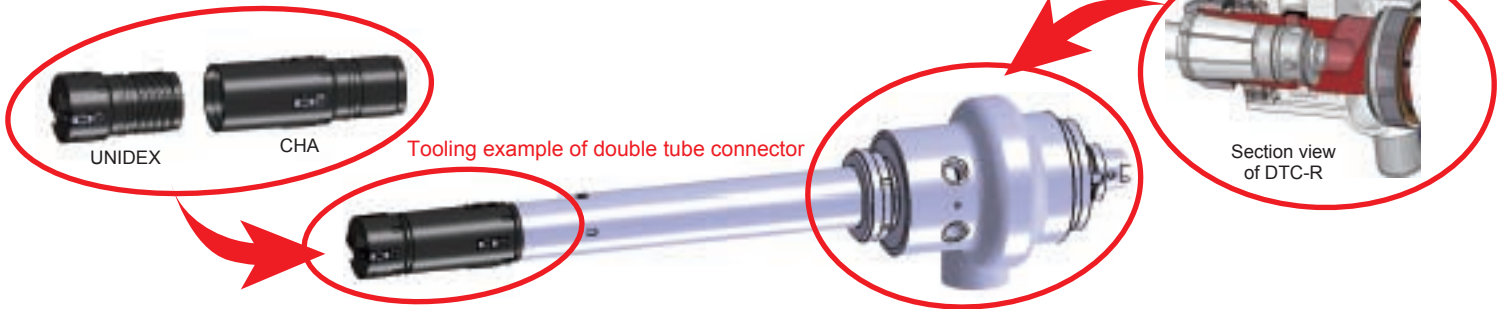


Unitac Double Tube System - High Efficiency Design Drill

Unidex & Cross Hole Adaptor

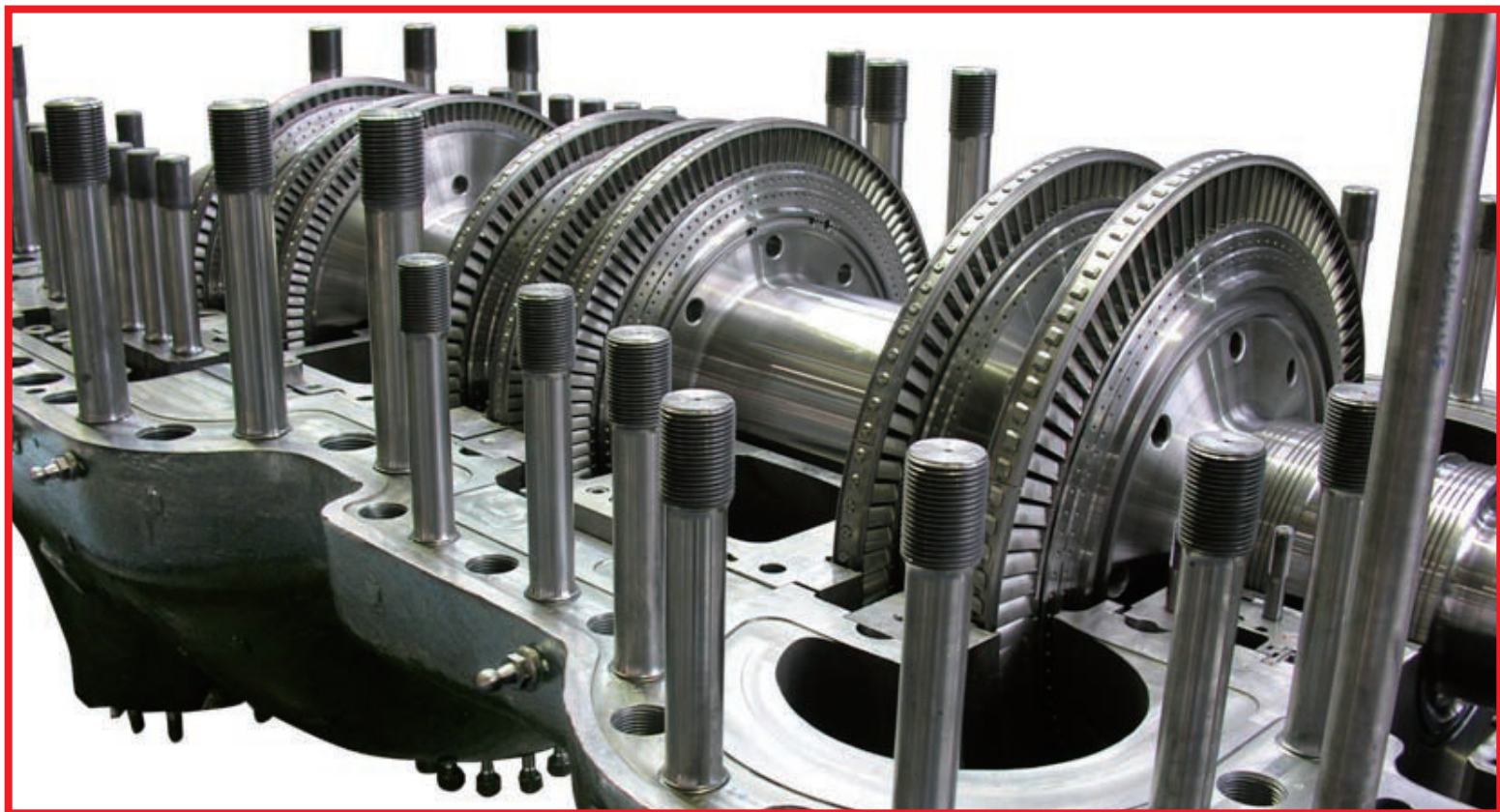
The Unidex series is a worldwide best seller. Depending on the diameter it can be used to drill holes up to 5mm larger than the original size. It can produce excellent hole tolerance in one pass under optimum conditions with high performing inserts.

When used in combination with the cross hole adaptor, the machining of turbine casing bolt holes, a very difficult process can be safely and successfully achieved.



Double Tube Connector DT-R Series

Designed with a special high pressure coolant adaptor, max drilling depths of up to 2000mm can be achieved. Competitors system is limited to 1000mm, giving Unitac DTS a double drilling depth range advantage.

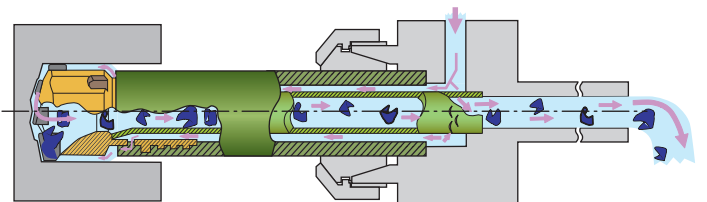


Large turbines

Turbines are vital components of power generators. They convert vast amounts of heat energy to electric power and are supported by a solid rigid casing. These casings require a large number of bolt holes which demanded long machining time in the past. Unitac's innovative DTS tooling has been able to dramatically reduce this machining time, in most cases by half. Unitac has greatly contributed to and is a major player globally in the power plant construction industry.

Double Tube System (DTS)

The DTS is characterized by its two tube construction and is therefore known as the double tube system. A sealing system and pressure head, which is required in the Single Tube System (STS) is not necessary for the DTS and it is therefore suitable for conventional general purpose machines such as lathes or machining centers. In general, because of less efficient chip evacuation than the STS the recommended max drilling depth is 1000mm. However, Unitac has the DTC-R tube connector that is capable of supplying high pressure coolant and can successfully achieve drilling depths of up to 2000mm.



UNITAC Application Technology



Top technical support available only from a dedicated manufacturer

Deep Hole drilling is one of the most difficult techniques in manufacturing and becoming more so as the critical quality requirement levels of finished products is becoming higher.

In addition to the high quality of accuracy and surface finish demands, new materials are often being introduced into the market. Top technical support is only available from a dedicated manufacturer. As progress in this field continues Unitac is always searching for new solutions, coordinating this effort with our customers.

We have installed an STS deep hole drilling machine to carry out strict testing as one of these solutions.

Unitac can implement cutting tests using the workpiece material based on customers requests and provide the best tool and cutting condition solution.

"Intelligent Machine"

Unitac's STS machine was specially designed with close coordination between our engineers and the machine builder. Its structure is specifically tailored to objectively evaluate the physical phenomenon involved in the deep hole drilling process.

A standard deep hole drilling machine does not have the equipment or sensors to thoroughly evaluate this complex process but with our specialized machine we are able to propose the best solution to our customers based on the accurate data obtained.



Growing with our customers

Since its founding, 25 years ago, Unitac has focused on deep hole drilling.

It is a unique and complicated process compared to other machining processes, due to various unstable factors and at times can present problems that even a professional engineer may find difficult to solve.

Unitac has been working closely with our customers over the years and has helped them find the solution for numerous problems in various industries.

With this extensive experience, we will continue innovating our products and providing the best solutions for our customers, leading us all into the future.

UNITAC Deep hole tooling Manufacturer
UNITAC INCORPORATED

IMC
INT'L METALWORKING CORP.

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