



International Ltd

Combustion Engineering for the 21st century

RC2 - Rotary

Oil Based Drill Cuttings, Soil, Sand & Sludge Decontamination Plant



Model RC2 (Rotary thermal decontamination system)

3Ts has specifically developed the RC2 for the decontamination of oil based drill cuttings, oily sludge's, oil contaminated soil and sand, the RC2 provides a proven and reliable facility which is energy efficient and designed for continuous 24 hour operation.

Throughput capacities for most customers can be accommodated, the standard RC2 has a throughput of 1.5 to 2.5m³/hr or up to 2 tonne per hour, depending upon the level of oil contamination. Standard units typically operate to optimum capacity with an oil/hydrocarbon contamination level of 5 to 7% by volume and water content of between 15 and 20% by volume.

Self Contained System

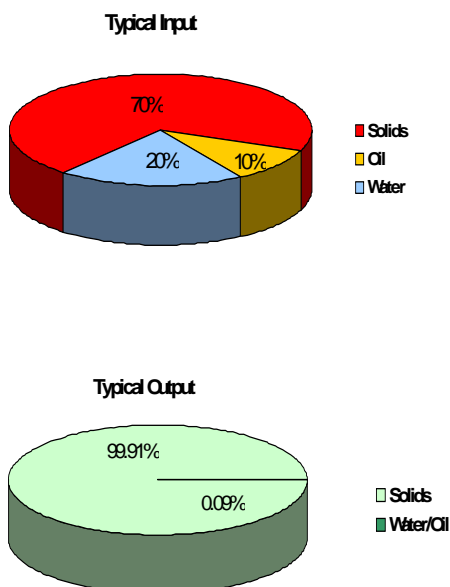
Emission Compliant

Proven Technology

Continuous 24 hour throughput



System Performance



Flue Gas emissions

	Run 1 (mg/m ³)	Run 2 (mg/m ³)
Total Particulate Matter	88.1	96.1
Volatile Organic Compounds	1	1
Cadmium	<dl	0.0004
Lead	0.2	0.1
Hydrogen Chloride	0.7	0.8
Carbon Monoxide	17.7	28.1
Nitrogen Oxides	26.1	10.1
Sulphur Dioxide	5.4	0
Mercaptan	<0.03	<0.03
Dioxins & Furans	<0.01	<0.01
Oxygen	19.0	20.0

No Mercaptan peaks were detected on the MS scan. No compounds of greater concentration than 5 µg were present. All results are expressed at reference conditions: Dry STP (273K, 760mmHg) 11% O₂

Specification

The RC2 is a unique system and incorporates state of the art technology to achieve compliance with international emission standards, and, its end product in treated soil being acceptable to non-specialist landfill, use as road base or disposal back to the ground.

The RC2 is a fully automated plant requiring minimal supervision, typically one plant manager and two operators.

The contaminated materials are loaded via bucket lift on to the in feed conveyor system and at the far end of the plant the treated materials are discharged into the high temperature out feed conveyor, making the loading and discharge a simple and clean operation.

Pollution control is a two phase process, initially the fumes and pollutant gases are re-heated up to 850°C to 900°C in a secondary combustion chamber, where the gases are held for up to 1.5 seconds, mixed with secondary air to complete combustion and then the second phase consisting of two special high temperature dust collection cyclone units, where particulate and dust are collected and automatically feed it into the main discharge conveyor system.



Main Rotary Kiln

Heavy duty trunnions and bearings with dust inhibitors ensure a long and reliable product life even in the most demanding of locations.



High (60%) alumina refractory lining provide long life and quality thermal protection for the kiln during the processing of abrasive materials for long operation periods. Chambers can be designed to suite application throughput requirements; the RC2 is the most popular model having a throughput capacity for 1.5 to 2.5 m³/hr.

Main Burner

The main burner is fully automatic and controls the rotary chambers temperature by modulating the heat input against the level of oil or other volatile contaminant in the material being processed. The main rotary chamber is fired by a single burner which can be fired by light oil (diesel), Natural Gas, LPG, RFO, RFG or dual fuel as required.

Combustion air is provided to ensure complete burn out of all contaminants within the waste material and destroy the pollutants such as Mercaptans, Dioxins and Furans.

Pollution Control System

3Ts International has been at the forefront of hazardous waste incineration for many years and utilise the expertise gained in the design of a two phase pollution control system in the RC2. Combined with high temperature, flue gas residence and dust drop out cyclones the RC2 performs in line with international emission legislation, including European and US. The best available technologies are embraced without compromising traditionally solid engineering practices.

Energy recovery in the form of steam, hot water or hot air can be incorporated if customers require.



The cyclone dust collection system is manufactured in 304 and 316 stainless steel for corrosion and temperature resistance, each cyclone has a drop-out and rotary valve which feeds the captured dust into the systems main hot material discharge conveyor.

A secondary combustion chamber processes the flue gases which exit the primary rotary chamber. The secondary chamber is fired by two fully automatic modulating burners each having a rating of 5Mj/hr.

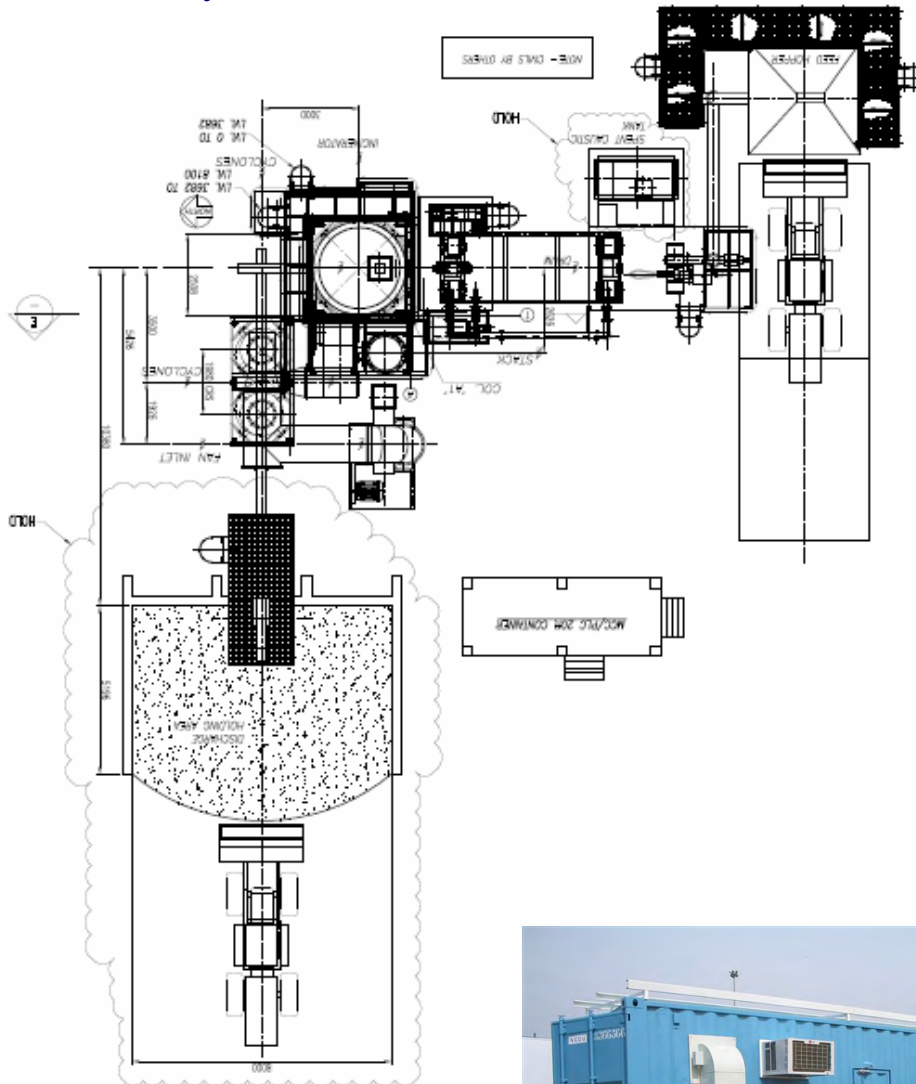
The secondary chamber is a cylindrical design and allows the intimate mixing of flue gases and secondary combustion air required to complete clean combustion.

The final treated flue gases are cooled to approximately 400°C before being vented to atmosphere via the main stack.

Independent flue gas analysis has been conducted on several installations; all have been approved for compliance for European emission standards.

RC2 Pollution control system & secondary phase high temperature Combustion system

Typical Plant Layout



Containerised Control Room

The plants controls are housed in a 20ft container converted to a control room, with AC units, MCC and PLC controls and office. All designed for easy site connection to power and controls, the containerised control room adds to the plants mobility and remote site suitability. Controls allow automated operation of the plant with minimal supervision. The total power load for the RC2 is 112kW



UNITED KINGDOM

3Ts International Ltd, 64 Bell Street, Marylebone, London, NW1 6SP United Kingdom
Tel: +44 (207) 2580161 Fax: +44 (207) 7244405 Email: sales@3tsinternational.com Web: www.3tsinternational.com



MIDDLE EAST

3Ts International Ltd, PO Box 74925 Dubai, United Arab Emirates
Tel: +9714 3409035 Fax: +9714 3409069 Email: sales@3tsinternational.com Web: www.3tsinternational.com



CANADA - 3TS Canada Ltd, 14 Culross Bay, Winnipeg, Manitoba R2C 4E2 Canada

Tel: +1 (204)222 2712 Fax: +1 (204) 2225573 Email: 3ts_canada@mts.net Website: www.3tsinternational.com