…… another JONOCO Customer Focused, Quality Solution.

Transportable Dosing Unit
TDU

…… an transportable, on-site configurable disinfection plant.

JONOCO
servicing the water industry

…… another JONOCO Customer Focused, Quality Solution.

Thank you for your interest in JONOCOs' Transportable Dosing Unit, TDU.

JONOCO has been *Servicing the Water Industry* for well over 30 years and is proud of its reputation and the relationships that it has developed with its clients.

JONOCO has always listened carefully to the needs of the industry and from this has developed several products that have been well received by the industry. Quality products that have contributed to better, easier and safer work practices.

The TDU is yet another JONOCO product that provides tried and tested methods of sodium hypochlorite handing and dosing that are all housed in one 10" shipping container.

The TDU provides a fully automated and on site configurable (via HMI) dosing plant that can be easily deployed, setup and commissioned at any site requiring disinfection. The plant can be designed with our clients' needs in mind in consideration of equipment selection and while the control system of the TDU is already configurable and ready for most sites, any additional control modifications can be made to achieve our clients' specific onsite needs, including integration to the existing site.

The TDU has a maximum chemical storage capacity of 1500L but can be increased with one or more Portable Storage Units (PSU), each providing an additional 3500L.

For further information relating to this product or any of the other many products or services that JONOCO can offer please contact either Paul, Noel or Peter. They would be more than happy to speak to you about how JONOCO can work with you in delivery *Customer Focused, Quality Solutions*.

Thank you

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Concept Introduction
…… the TDU©

The *TDU* comprises a 10” long (3m long by 2.4m wide) shipping container housing all the equipment required in the storage and handling of sodium hypochlorite.

The internal surfaces of the container are appropriately coated in consideration to the possible use of 12.5% sodium hypochlorite. Lower concentrations may be used. A HDPE bund is provided for the proper containment of the storage tank and dosing equipment.

Several systems are provided that can be configured in the operation of the TDU, subject to the operational and onsite conditions.

The TDU comprises a fully operational OT (operational technology) system used in the control and monitoring of the plant. This includes a Human-machine interface (HMI) that allow operators the ability to control and monitor the system. This same HMI is used in the onsite configuration of the plant, used at the time of deployment, giving the TDU is true flexibility in operation. Dosing control modes can be selected and the various systems (parts) of the TDU can be placed into operation or disabled as required.

All service connections to the TDU are made by way of the service connection box.

Figure 1 - TDU© services connection box

The TDU comprises a single storage tank with a capacity of approximately 1500L. External tanks, increasing the storage capacity of the TDU, can be connected in one of two ways. A Containerised Portable Storage Unit (PSU) each with an additional capacity of 3.5kL can be connected to increase the total storage capacity. This is done by way of the TDU’s PSU connection. Alternatively, larger external tanks may be connected to the TDU if the PSU system is not to be used.

The TDU comprising two dosing pumps, arranged in duty/ standby configuration. The pumps are sized to meet the sites dosing demands. A single chlorine residual analyser used for post dose analysis is provided. This can be selected to operate the plant in Compound Control Mode. Space has been provided for one additional analyser system.

With water conservation in mind, a sample water return system is provided that can be deployed to return sample water safely to process.

A service water system is provided for the purposes of washdown capability. A water tap and hose are provided. Additionally, the service water system feeds an emergency shower/ eyewash unit that is placed outside of the container at the time of deployment. A service water booster pump is made available should the site pressure found to be low and ineffective for the proper shower/ eyewash unit operation.

From an Operational Technology standpoint, the control system comprises a PLC/ RTU and modem all backed up on a 24Vdc system. The requirements of which will take into consideration your Cyber Security needs (Refer to section on *Operational Technology* below).

Electrically the *TDU* provides its own supply distribution system along with internal and external lighting. Options for the provision of an Automatic Transfer Switch (ATS) or Basic Transfer Switch (BTS) along with generator connection can be made available.

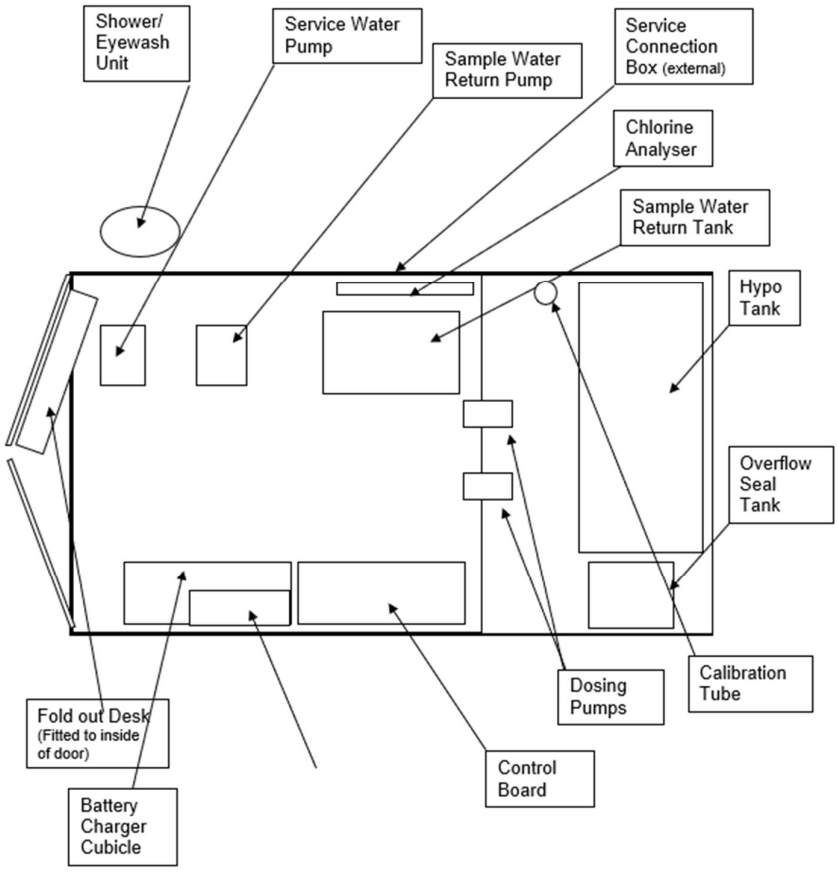

Figure 2 – TDU Floor plan

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Flexibility in Design
…… *what the client needs*

JONOCO understands the importance of tailoring our products to your exact needs.

For this reason, JONOCO has sort to provide a *TDU* solution that is flexible in meeting your design needs.

Not only can the *TDU* be designed to meet the chemical dosing demands of your site, but it can also be tailored in several ways to provide you with only the systems and equipment that you require and to have these systems and equipment selected with your operational and preferred equipment selection needs in mind.

Configuration requirements that have been considered in the design of the TDU solution include the following major areas.

Operational (Control system) Technology (OT)

…… Understanding your Cyber Security requirements

Special consideration is given to the Cyber Security requirements that we know you face today. We understand that you are now responsible for the security management of your OT systems. OT systems that also require you to carefully select and manage service providers engaged in the configuration and maintenance of these systems.

The OT systems of the *TDU* are delivered with your Cyber Security requirements in mind. You can nominate the OT systems and services providers that are to be used. You can place the management of this with us or alternatively, we can work with you in your management and delivery of all OT related works. For clients that are yet to implement their own Cyber Security requirements, we can offer the supply and configuration of OT systems for the *TDU* and will work closely with you in doing this.

Documentation provided with the *TDU* includes an operational control philosophy, detailing how the equipment may be controlled and monitored. This document will assist you in the development of any detailed operating methodologies that may be required to suit your site. We are happy to work with you in your development of the OT software/ systems to ensure applicable equipment warranties are maintained.

Water Quality Measurement

…… Provision and use of Analysers

The *TDU* is provided, as standard with a single chlorine residual analyser that may include pH measurement/ correction. This analyser is typically used in the control of the chemical dosing process.

Provision of some space has been made within the TDU for additional water analysis equipment that may be required.

Figure 4 – Analyser Systems,

Water Conservation

…….. Provision of a Sample Water Return System

We understand that water conservation is important. If water conservation is a requirement for you then the *TDU* has been supplied with a sample water return system that will return sample water safely back to process. This system can be deployed via the TDU configuration screen provided on the HMI.

The sample water return system comprises a small storage tank (~50L), a sample water return pump with a maximum capacity of 10bar. Instrumentation is used to control and monitor the system.

Figure 5 – Sample Water Return System, comprising sample water storage tank and return pump.

Chemical Dosing

…… Dosing Pump Selection and Redundancy

The type of dosing pumps used can be nominated by you. A maximum of two dosing pumps can be provided within the *TDU*.

Each dosing pump is mounted over the bund wall of the TDU.

Control valving is provided with each dosing system to ensure reliable and repeatable operation.

Figure 6 – Dosing pumps of TDU

Chemical Storage

…… Capacity to store

The 1500L sodium hypochlorite storage tank is mounted on a frame that is positioned inside the chemical bund.

The storage can is provided with all the necessary instrumentation to monitor level both locally and via SCADA. This instrumentation is also used in the proper control of the transfer process. This ensures that the storage tank is correctly filled avoiding any overflow event.

Additional storage capacity can either be integrated into the TDU in the form of a Portable Storage Unti (PSU), where multiple PSU containers can be added to the one TDU, each PSU providing an additional 3500L, or the client may choose to install an single larger storage tank that can be used to supply the TDU.

The storage tank is appropriately sealed with a single vent to the outside of the container. The overflow of the storage tank is connected to an overflow seal that creates a liquid seal, ensuring that sodium hypochlorite gas does not enter the room.

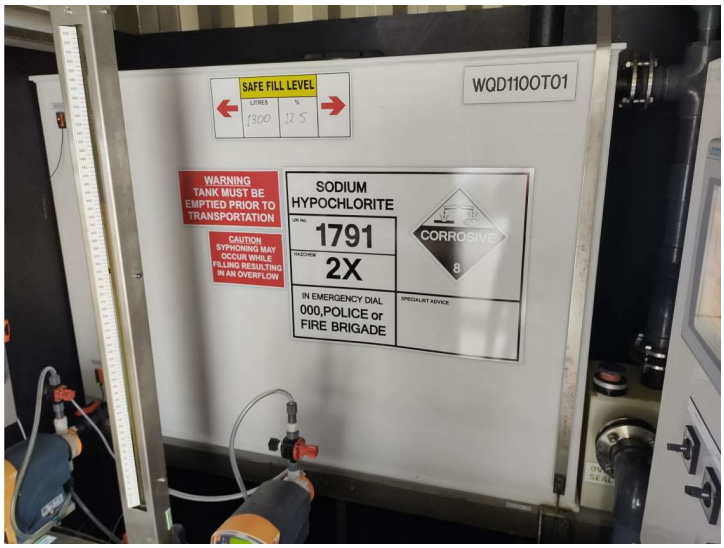

Figure 7 – Chemical storage tank

Mains Supply Reliability

…… Provision of automatic or manual backup supply systems

At locations where mains supply is unreliable, or simply if you desired to improve the reliability of your system, the *TDU* can be supplied with an ATS (Automatic Transfer System) and on-site generator. This will ensure that the system remains operational at times of power failure. Alternatively, a BTS (Basic Transfer Switch) along with appliance plug can be supplied. This allows the *TDU* to be supplied via a portable generator as you require.

Safety Systems

…… Provision of an emergency Shower/ Eyewash Unit.

The TDU is provided with a shower/eyewash unit that is externally mounted when the TDU is deployed. During transportation the shower/eyewash unit s bracketed to the inside of the door.

When the unit is externally mounted it is then fed from the service water system that is provided as standard.

If the site already has an emergency shower, then the TDU's emergency shower/ eyewash unit may not need to be deployed.

At locations where the existing mains supply pressure is identified as insufficient to adequately supply the shower/ eyewash unit, a service water booster pump is supplied and fitted to booster mains pressure.

Figure 8 - Emergency Shower/ Eyewash installation shown in transport storage location

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Selection in Design

……. customising your solution

As part of the design process of the *TDU* JONOCO and our suppliers will work with you in the determination of how to best satisfy your needs. Our objective is to provide a customised solution to suit your specific needs whether they are design based (i.e. equipment selection/ configuration) or just site considerations.

We will tailor a solution to your needs.

To assist us in the provision of a customised TDU solution, you may complete an application form. This can be done by completing the form provided via the link provided below. Alternatively, you may request an application form be emailed out to you.

If you require any assistance in completing this form, then please reach out to one of our team members who will be more than happy to provide support.

Use this link:

https://forms.office.com/r/axSnRnTFPM