

TEMPERED WATER SYSTEMS

© SEPTEMBER 2010 • GALA INDUSTRIES, INC.



INSIDE THIS BROCHURE:

- About Gala Tempered Water Systems
- Gala Integrated Sieve (IS™) Tempered Water System
- MB500™ System
- Filtration
- Pellet Diverter Valve

BENEFITS

Safety:

- automated start-up & shutdown
- redundant safety interlocks
- optional:
 - steam-tight
 - insulated
 - hot face protected

Environmental:

- clean operation with easy access
- low energy consumption
- efficient closed loop filtered water system
- low noise

Profitability:

- suitable for various polymers
- minimal floor space
- low maintenance
- minimal power consumption
- minimal water consumption
- low production costs



GALA TEMPERED WATER SYSTEMS

The Tempered Water System (TWS) is the internal conveying system of the Gala underwater pelletizing system at rates up to 15.000 kg/h. The capacity of the TWS depends on the production volume and the product to be pelletized.

Gala's tempered water systems are typically used with the Gala pelletizing systems, but are also available for high capacity pelletizing systems.

Temperature, water flow rate and residence time of the pellets in the process water are the key factors for sizing a TWS. The tempered water system is a compact unit including the following main components:

- Agglomerate catcher
- Centrifugal dryer
- Exhaust fan
- Water tank with heater and integrated sieve (IS) filtration
- Pump
- Heat exchanger

Optional integration is possible for:

- Fines removal sieve (FRS)
- Dynamic Fines Removal Sieve (DFRS)
- Pellet diverter valve (PDV)

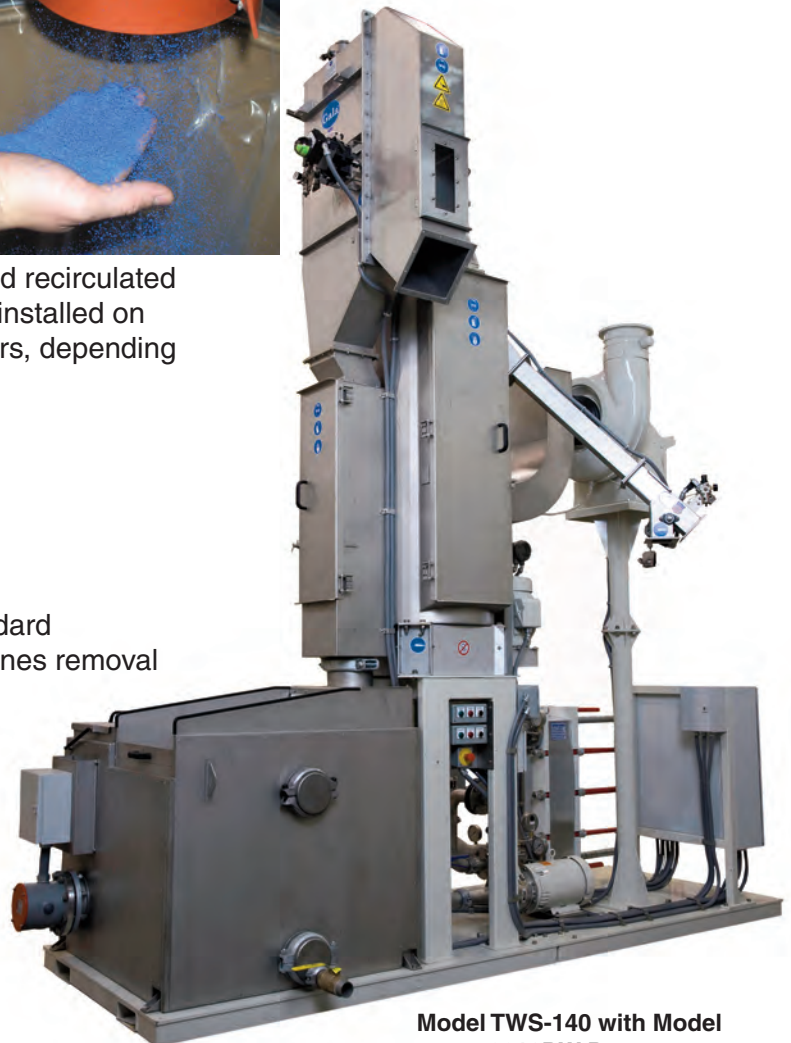
The process water heated by the pellet flow is separated in the centrifugal dryer. The process water remains in the closed loop and is collected in the process water tank. A heat exchanger ensures constant water temperature. The process water is filtered and recirculated to the pelletizer cutting chamber. The TWS can be installed on suitable stands or be distributed across several floors, depending on the floor plan.

QUICK SPECS:

- Easy access for cleaning
- Fully enclosed system
- No hidden corner areas
- Pressure loss independent filtration method
- Integrated sieve (IS) design water filtration is standard
- Integrated secondary filter to collect fines during fines removal



Model TWS-40 with IS tank and Model 2016BF Dryer



Model TWS-140 with Model 3016DW Dryer

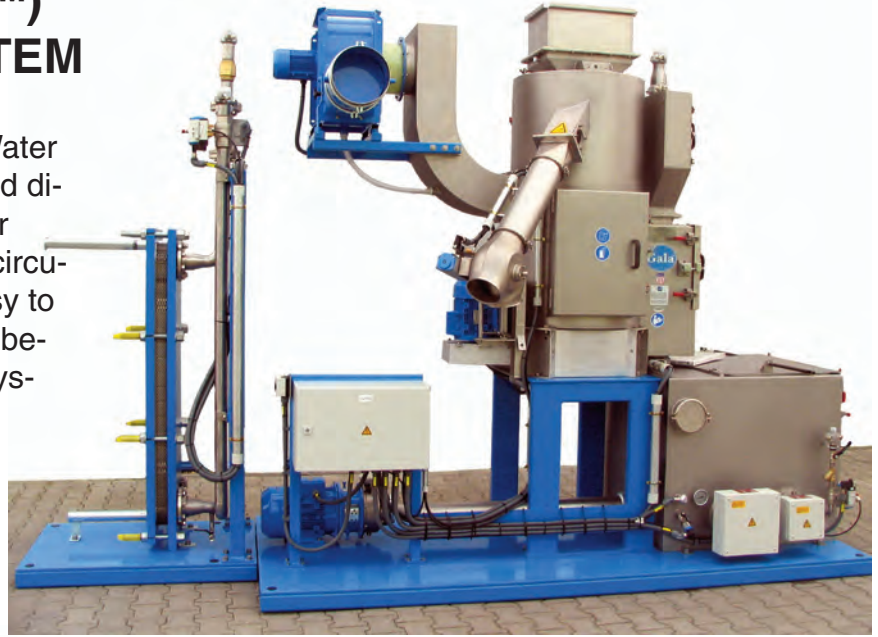


INTEGRATED SIEVE (IS™) TEMPERED WATER SYSTEM

Gala's IS (Integrated Sieve) Tempered Water System features a V-wire screen mounted directly under the dryer water outlet to filter solids from the process water prior to recirculation to the pelletizer. The screen is easy to remove for cleaning, reducing downtime between product changes. TWS 20 – 80 systems are skid mounted.

QUICK SPECS:

- Quick and easy access for cleaning
- Fully enclosed system
- No hidden corner areas
- Integrated filtration
- Minimum floor space



TWS-20 with IS water tank and 2016BF Dryer



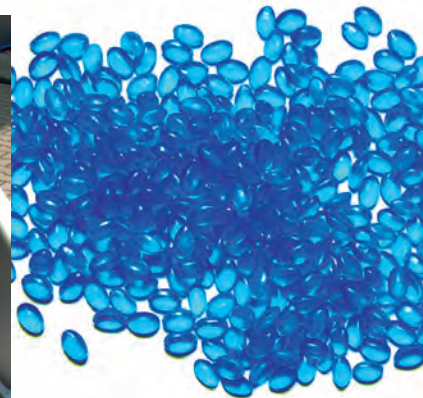
Tempered water system tank with integrated fines removal screen system to remove down to 300 µm particles



Tempered water system with band filter



Tempered water system tank with band filter medium to remove down to 20 µm particles



GALA TEMPERED WATER SYSTEMS

MB500™ TEMPERED WATER SYSTEM

For pellet rates up to 500 kg/h

The innovative MB500™ is the first system specifically designed to permit fast product changes in masterbatch and compounding applications. This system is suitable for throughputs up to 500 kg/h and is characterized by the easy access and simple cleaning of all system components.

The dryer is designed to be raised and rotated to the side for efficient cleaning using an electro-pneumatically operated lifting device. This allows simple and easy removal of the dryer housing and one-piece screen, which exposes the rotor for easy cleaning. (Fig. 1-4)

The water tank is designed for easy access and efficient cleaning. A sloped bottom with vertical drain allows complete draining and thorough cleaning. A fines removal sieve is integrated into the system.

A high efficiency blower is installed on the system to provide sufficient air flow for pellet drying. The dryer base section is bolted to one of the two tank lids for quick, easy access for cleaning and service by simply raising the lid.

The MB500 System uses an easy to clean integrated sieve for water filtration with a 300 µm filter material while the MB500-BF2 System uses a band filter for fines removal down to 20 µm. Both systems have fast drain tank designs with v-shaped bottom for easy cleaning.

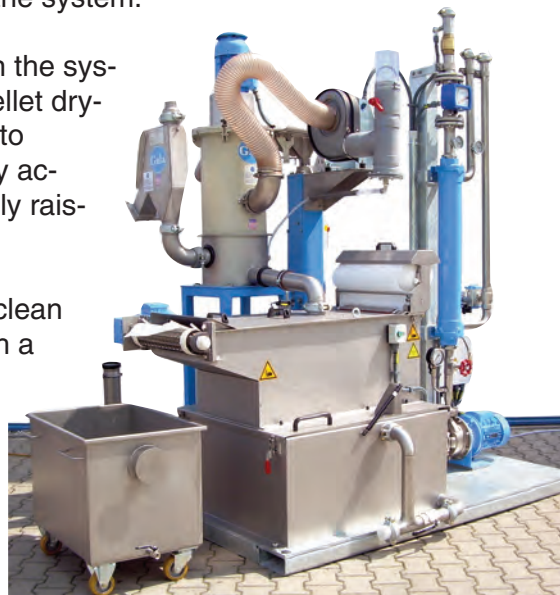
An agglomerate catcher is included to remove oversized clumps of polymer before they enter the dryer. Agglomerates fall into the fines removal waste tray from the slurry inlet.

BENEFITS:

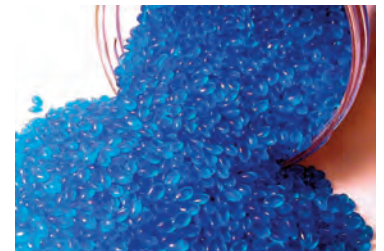
- Easy to clean
- Energy efficient
- Compact, less space required
- Low maintenance
- Low production costs



MB500 with fines removal sieve tray in process water tank



TWS 500-BF2 with band filter in tank



The dryer on the MB500 TWS is designed to be raised and rolled to the side for easy access and thorough cleaning.



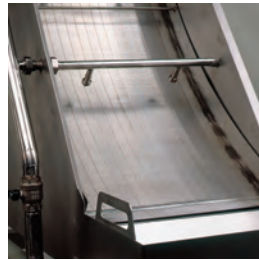
PROCESS WATER FILTRATION

DYNAMIC FINES REMOVAL SIEVE (DFRS)

Gala has developed dynamic fines filtration for continuous cleaning of the entire water flow, removing particles down to 0.14 mm from the process water. Clean process water prevents product contamination and blockage of important line components. The fines are automatically separated from the water flow and are collected in a container outside the water tank. Water dripping from the container is recycled into the process. By actuating a valve, the vibrating screen can be bypassed in the process. The process water is then directly conveyed into the tank in the traditional way. Safety, continuity and environmental (water) protection during production were key considerations driving the development of the DFRS. The system is suitable for a large variety of applications and can be fitted or retrofitted as a module for small but demanding pelletizing systems with low water volumes as well as for lines with the largest production rates and water volumes.



TWS 70 Water System with Dynamic Water Filtration, insulated version



FINES REMOVAL SIEVE (FRS) DESIGN

The Gala fines removal sieve removes fine particles 0.15 mm from the process water. Clean process water avoids contamination of the product and the settling of fines in key system components.

The curved screen, including the collection basin, is made of stainless steel. A self-priming pump and internal piping may be used to convey the process water from the dryer over the curved screen. If the gradient is appropriate, gravity feeding will be sufficient. The process water contaminated with particles is first conducted into a steadying chamber and then flows evenly over the curved screen. The fines 0.15 mm are separated and collected in a collection basin. The filtered water is recycled.

PELLET DIVERTER VALVE

The purpose of the pellet diverter valve is to divert product (pellets) from the product outlet of the centrifugal dryer during start-up, for product sampling or for filling containers.

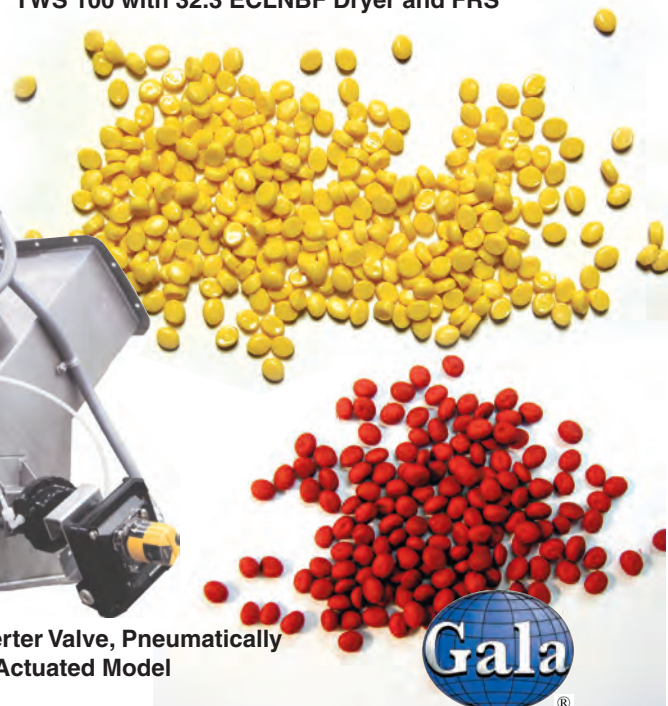
The pellet diverter valve bolts to the resin outlet of the dryer and is constructed of 304 stainless steel. It is either manually operated or pneumatically actuated, depending on the size of the dryer and the Customer's line specifications.



TWS 100 with 32.3 ECLNBF Dryer and FRS



Pellet Diverter Valve, Pneumatically Actuated Model



GALA TEMPERED WATER SYSTEMS



Gala Industries, Inc.

181 Pauley Street, Eagle Rock, VA 24085 USA

Tel: 540 884 2589 • Fax: 540 884 2310

www.gala-industries.com

Gala Kunststoff- und Kautschukmaschinen GmbH

Bruchweg 28-30, 46509 Xanten, Germany

Tel: +49 (0) 2801 9800 • Fax: +49 (0) 2801 98010

www.gala-europe.de

Gala Industries Asia Ltd.

Amata City Ind. Est., 9/34 Moo 4, T.Mabyangporn

A. Pluakdeang, Rayong 21140, Thailand

Tel: +66 38 956 245 • Fax: +66 38 956 246

www.gala-industries.com

Gala technology is protected, in whole or in part, by one or more issued U.S. and foreign patents, with other domestic and foreign patents pending. Patents include US Patent Nos. 5,265,347; 5,403,176; 5,624,688; 5,638,606; 6,138,375; 6,237,244; 6,332,765; 6,551,087; 6,739,457; 6,793,473; 6,807,748; 6,824,371; 6,925,741; 7,024,794; 7,033,152; 7,157,032; 7,171,762; 7,172,397; 7,267,540; 7,318,719; 7,393,484; 7,402,034; 7,421,802; 7,524,179; and related foreign patents; All logos, trademarks, and service marks (hereafter referred to as "Trademarks") displayed herein whether or not appearing in large print or with or without the trademark symbol are registered and unregistered Trademarks of Gala or of third parties. Gala Trademarks are protected by one or more registered U.S. and foreign trademarks, with other domestic and foreign trademarks pending. All original works of authorship displayed herein is protected under U.S. and other copyright laws. Gala technology may also be protected as trade secrets, mask works or other proprietary rights.