



# 2017 - 2018 PRODUCT CATALOG

WASHER-EXTRACTORS | TUMBLER DRYERS | OZONE SYSTEMS

860-828-0311

[www.edrocorp.com](http://www.edrocorp.com)



*Better Manufacturing Through Technology*



## THE EDRO CORPORATION



EDRO Corporation is more than a machinery manufacturing company. While we design and produce some of the world's most advanced high-capacity washer-extractors, tumbler dryers and laundry ozone systems, it is the quality and technology we build into them that sets EDRO apart. Our in-house production capabilities include extensive metal working and mechanical and electronic assembly.

Our commitment to continual product improvements through field research has resulted in washing and drying technologies that improve laundry operation efficiencies. Some of these innovations include our new state-of-the-art DynaTrol Human Machine Interface controller and revolutionary DynOzone - DynaWash® Ozone System.

We have enjoyed a successful business model since 1946, but are perhaps best known for our shipboard and marine installations which include the main laundries of U.S. Navy submarines and surface combatants. Our machines are sold through and serviced by independent laundry equipment dealers located throughout North America and the world.

We invite you review our product catalog and see how the technology in our machines can make your laundry operations more efficient and productive.

## CONTENTS

### Washer-Extractors

■ Side Loader	4
■ End Loader	6
■ Barrier Type <i>PassThru</i> for Clean Rooms	8
■ Open Pocket Soft Mount	10
■ Open Pocket Tilting Soft Mount	14
■ Open Pocket Rigid Mount	16

### Tumbler Dryers

■ C-SERIES	17
------------	----

### Exclusive Features

■ DynaTrol HMi Touch Screen Control	18
■ DynOzone - DynaWash® Ozone System	20
■ HMi / PLC Machine Control	21
■ Inverter with Single Motor Drive	21
Controlling Factors of the Washing Process	22



## WASHER-EXTRACTOR PRODUCT DETAILS

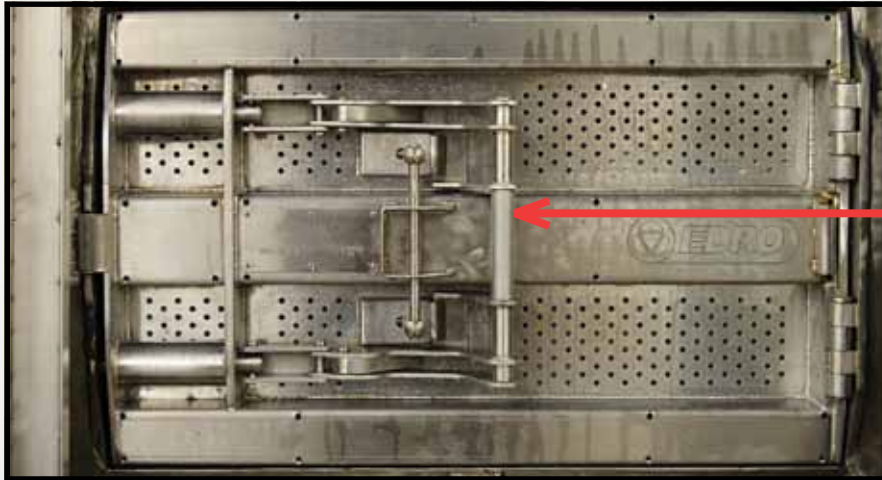
The new EDRO side loader washer-extractor range is available in a split two-pocket configuration with model loading capacities of up to 230 (105 kg) and 450-pounds (205 kg). Taking advantage of the large main door opening, the cylinder can be positioned at a variety of angles for gravity-assisted loading and unloading. Drawing on years of experience from our end loading models, the side loader machine design incorporates our proven DynaMount suspension system for reduced vibration transmission, DynaTrol HMI touch screen control for easy programming and operational accuracy, and inverter with single motor drive for energy efficiency and featuring our exclusive variable step extract and high slip braking.

### STANDARD FEATURES

- DynaTrol HMI touch screen control
- Inverter with single motor drive
  - Field programmable speeds
  - High slip braking
- DynaMount suspension system
- 10-port supply injection with manual hopper
- Stainless steel basket, shaft and tub
- Positioning brake system
- Autoswing main door

### MACHINE OPTIONS

- DynOzone - DynaWash® Ozone System
- Water Reuse ready
- Direct steam injection
- Flushing dry compartment supply injection
- DynaCop machine networking



### KEY FEATURES & BENEFITS

- The split two-pocket cylinder configuration has a full width door opening for easy loading and unloading and offers a 180 degree drop for good mechanical wash action.
- Inner cylinder door features effortless operating hardware, securely fastened to the cylinder with machined pistons and bushings.
- The compact machine design includes a side mounted motor plate and enclosed cabinet guarding, which significantly lowers the machine profile.
- Dual, independent water piping speeds fill step times for faster cycle times.



*Gravity Assist  
Load / Unload*



Side Loader

**Let Gravity  
Work For You**



## WASHER-EXTRACTOR PRODUCT DETAILS

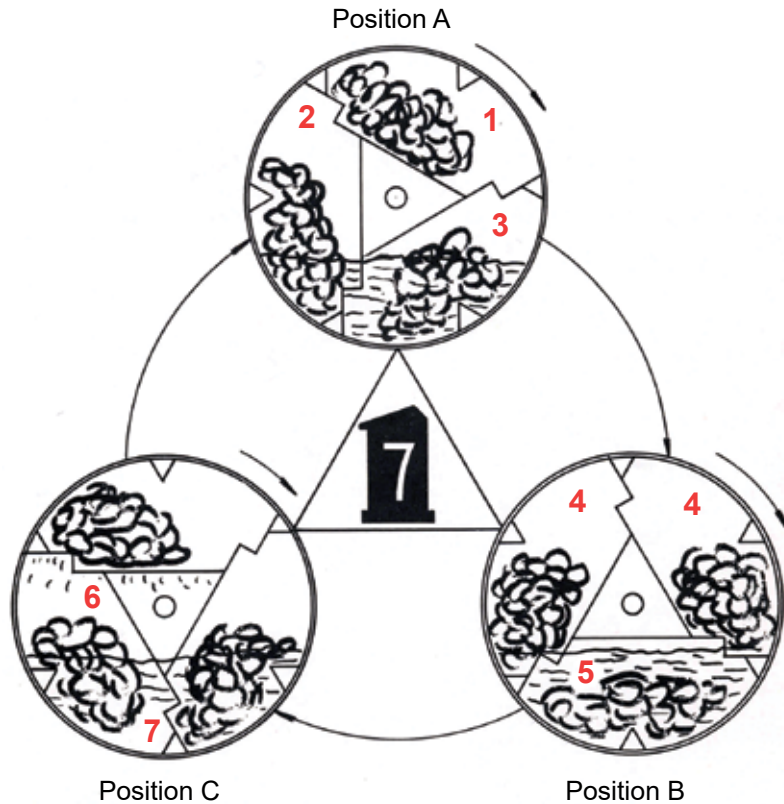
The initial investment and remarkably low operating costs of the EDRO DynaWash® three pocket end loader washer-extractor range drive down the cost of ownership. Machines are available in 100 (45 kg), 150 (68 kg), 200 (91 kg), 300 (136 kg) and 400 (182 kg) pound models in both rigid mount (DW) and soft mount (DW\_SM) configuration. The robust design and solid construction have made the DynaWash® machine series a hallmark in the industry. These three pocket end loader washer-extractors continue to represent exceptional value in the laundry market.

### STANDARD FEATURES

- DynaTrol HMi touch screen control
- Inverter with single motor drive
  - Field programmable speeds
  - High slip braking
- Positioning brake system
- 10-port supply injection with hopper
- Stainless steel basket, shaft and tub
- DynaMount suspension system - DW\_SM Models

### MACHINE OPTIONS

- DynOzone - DynaWash® Ozone System
- Water reuse ready - Extra drain; water inlet; controls
- Direct steam injection
- Electric heating booster - DW100, DW150, DW200 only
- Redirect drain to rear
- Flushing dry compartment supply
- Vacuum breakers
- DynaCop machine networking



### DYNAWASH® KEY FEATURES & BENEFITS

- DynaWash® cylinder design not only provides excellent load balance, but gives superior mechanical action for exceptional wash results.
- The configuration of the three compartments, and their pattern of perforation, is specifically designed to produce the seven mechanical actions that make for a good, clean wash:

#### Position A

1. Big Drop - load rotation begins by dropping from 11 o'clock to 3 o'clock
2. Secondary Drop - load rolls and continues to drop from 3 o'clock to 5 o'clock
3. Tumble - load tumbles as it is dropped into wash water

#### Position B

4. Double Squeeze - load squeezed between top / bottom angled baffles
5. Float - load floats free to saturate in wash water

#### Position C

6. Force Push - load is forced through wash water
7. Draining - load gravity drains through basket at top of rotation

These mechanical actions, combined with unrestricted circulation of the wash solution throughout the wash and rinse steps, afford the agitation, penetration and distribution required for quality results.



*Built Like  
A Battleship*



The inner design of EDRO's patented "3-D" stainless steel basket.

**End Loader**



## WASHER-EXTRACTOR PRODUCT DETAILS

EDRO's Barrier Type *PassThru* for Clean Rooms washer-extractor is a specialized machine used for the prevention of cross contamination. In hospitals, nursing homes and clean rooms, wherever soiled and possibly contaminated linen must be isolated from clean linen, Barrier Type *PassThru* for Clean Rooms washer-extractors provide the necessary safe separation. The washer-extractors feature the patented "3-D" basket design. This assures the ideal mechanical wash action for outstanding laundering results, while the stainless steel basket, shaft and shell wrap ensure long life. The washer is loaded from a soiled side and unloaded from the clean room side, physically separated by a barrier wall. The machine is attached to the barrier wall by the "Clean Seal" sealing system. This exclusive system provides a physical barrier and positive air flow between the clean and soiled operating sides. Built flush against the sides of the Clean Seal, the design provides total separation of loading and unloading operations with better and easier installation. An uninterrupted flow of positive make-up air from the clean room side to the soiled room side is continually flowed through the machine while in operation - thus preventing airborne cross-contamination of the load. The range is available in 100 (45 kg), 150 (68 kg), 200 (91 kg), 300 (136 kg) and 400 (182 kg) pound models.

### STANDARD FEATURES

- DynaTrol HMi touch screen control
- Interlocking safety controls
- Clean & soiled side control dashboards
- Inverter with single motor drive
  - Field programmable speeds
  - Hig slip braking
- Positioning brake system
- 10-port supply injection with hopper
- Stainless steel basket, shaft and tub
- Clean Seal with positive air flow
- DynOzone - DynaWash® Ozone System

### MACHINE OPTIONS

- Direct steam injection
- Electric heating booster - DWPT100, DWPT150, DWPT200
- Flushing dry compartment supply
- Vacuum breakers
- DynaMount suspension system
- DynaCop machine networking



### BARRIER TYPE PASSTHRU KEY FEATURES & BENEFITS

An interlocking door system prevents both doors from being opened at the same time so when an operative loads dirty laundry on the soiled side, the door cannot be opened on the clean side allowing germs to contaminate the clean room.

A smart control system prevents simultaneous soiled room and clean room operation of the machine. The washer's main operating control is located on the washroom (loading) side. Door, forward and reverse jog controls, as well as signal and emergency stop switches are located on the clean (unloading) side.

A further aid to the sanitization of washing process is the use of an integrated ozone system. EDRO's DynOzone - DynaWash® Ozone System is a standard feature on all *PassThru* machines. The integrated, onboard ozone generator produces a safe, disinfected and sanitized air stream which is injected into the wash wheel for markedly improved washroom efficiency.





*"Clean Seal"  
Sealing System*



The inner design of EDRO's patented "3-D" stainless steel basket.

**Barrier Type PassThru**



## WASHER-EXTRACTOR PRODUCT DETAILS

CSL open pocket soft mount washer-extractors feature super high-speed extraction speeds with over 300 G-force through a highly efficient inverter with single motor drive setup.

The machines feature state-of-the-art DynaTrol HMi touch screen control with isolated electronic enclosure and DynaMount shock-and-spring suspension mounting. Installations include the on-premise laundries of hospitality / healthcare establishments, prisons / correctional facilities, dry cleaning & wet cleaning, and pony machines in industrial and uniform rental laundries.

The washer-extractors can be installed in laundries where the foundation structure is able to support a fully loaded machine.

The range is available in 60 (27 kg), 110 (50 kg), 175 (80 kg), and 225 (100 kg) pound models.



*Centro Federal de Readaptacion Social, Durango, Mexico*

### STANDARD FEATURES

- DynaTrol HMi touch screen control
- Inverter with single motor drive
  - Field programmable speeds
- DynaMount suspension system
- 4-cup supply injection with 5-liquid ports
- Stainless steel basket and tub
- Direct steam injection

### MACHINE OPTIONS

- DynOzone - DynaWash® Ozone System
- Water reuse ready
  - Extra drain and water inlet
- Electric heating booster



*High-Speed  
Extraction*



Open Pocket Soft Mount





Proud supplier of Laundry Equipment to the  
United States Navy for more than 50 years



First DynaWash® Installation:  
USS Yorktown, circa 1965.



## WASHER-EXTRACTOR PRODUCT DETAILS

The CSL open pocket soft mount tilting washer-extractor range is available in 225 (100 kg), 350 (165 kg) and 450 (205 kg) pound models.

These industrial machines feature our state-of-the-art DynaTrol HMI touch screen control, DynaMount shock-and-spring suspension mounting with isolated electronic enclosure, and inverter with single motor drive setup with direct V-belt drive.

CSL soft mount tilting models feature a dual pivot point, air-bag tilting mechanism with Autoswing door to facilitate the loading and unloading process. Installations include resort and hotel on-site laundries, and commercial, industrial and uniform rental laundries.



Sunshine Laundry & Linens, Newington, CT

### STANDARD FEATURES

- DynaTrol HMI touch screen control
- Inverter with single motor drive
  - Field programmable speeds
  - High slip braking
- DynaMount suspension system
- Autoswing door
- Dual pivot point tilting\*  
\*CSL225 forward/unload tilt only
- 5-cup supply injection with 5-liquid ports
- Stainless steel basket and tub
- Direct steam injection

### MACHINE OPTIONS

- DynOzone - DynaWash® Ozone System
- Water reuse ready
  - Extra drain and water inlet



*Automated  
Load / Unload*



Open Pocket Tilting Soft Mount



## WASHER-EXTRACTOR PRODUCT DETAILS

The NX open pocket rigid mount washer-extractor series is ideal for small and medium-size on premise laundry facilities, as well as pony machines for commercial and industrial plants.

The range is available in 60 (27 kg), 100 (45 kg) and 140 (64 kg) pound models.

All NX models feature a sturdy frame and base with pillow block bearings. The computer-designed frame and base features a tough structural-steel construction that has been continuously welded for years of durability and reliability.

The pillow block bearings are readily accessible for servicing and have easy access for grease maintenance. All serviceable components can be maintained from the front and rear, with access panels allowing machines to be mounted close together saving valuable floor space. Industrial-quality parts and components have been chosen for long-lasting performance.



### STANDARD FEATURES

- DynaTrol HMi touch screen control
- Inverter with single motor drive
  - Field programmable speeds
- 5-port supply injection with hopper
- Stainless steel basket and tub
- Vacuum breakers

### MACHINE OPTIONS

- DynOzone - DynaWash® Ozone System
- Water reuse ready
  - Extra drain and water inlet
- Direct steam injection
- Electric heating booster
- Flushing dry compartment supply





## C-SERIES TUMBLER DRYER PRODUCT DETAILS

For years, EDRO has been a leader in the design and manufacture of products for the laundry industry. In 2007, we began production of the M-SERIES tumbler dryers for U.S. Navy surface ships and submarines. In 2015, we introduced the C-SERIES of commercial tumbler dryers. With the new line of machines, we have combined our manufacturing experience with years of field proven results to create the perfect balance of quality and affordability. The series of gas, steam and electric tumbler dryers are available in various capacities designed to meet the needs of on-premise and commercial laundry facilities.



### STANDARD FEATURES

- Large door opening for easy loading
- Mounting holes provided for easy installation
- Fewer moving parts, simple design
- Easy to clean with self-cleaning Lint Screen
- Fully insulated front, side and rear panels

### DMP MICROPROCESSOR CONTROL

Control features 5 preset programs with time and temperature display, On/Off reversing, anti-wrinkle tumble, end of cycle buzzer and extra contacts.



### SPIDER & BASKET

EDRO's robust constructed spider and basket assembly consists of tough tubular steel supports with a machined shaft and extruded basket perforations for a smoother surface and stronger basket. This smooth surface is comparable to a washer basket more than a typical dryer basket.



### DRIVE & GEARBOX

Industrial strength compact drive offers the following features:

- Efficient transmission of power
- No large pulleys or multiple belts
- Bronze gear box transmission
- Oversized taper roller bearings
- Large capacity oil reservoir
- Robust cast iron housing
- Requires less maintenance



*Programmable  
Control*

Take command of your washer-extractors with the power and functionality of this remarkable operating control device. DynaTrol is simple enough to teach even the most basic skill sets, while offering security and sophistication for detailed programming and supervisory monitoring.

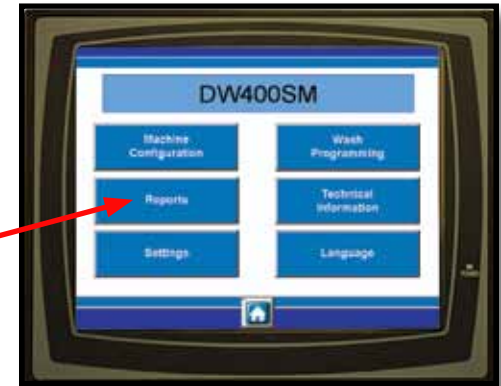
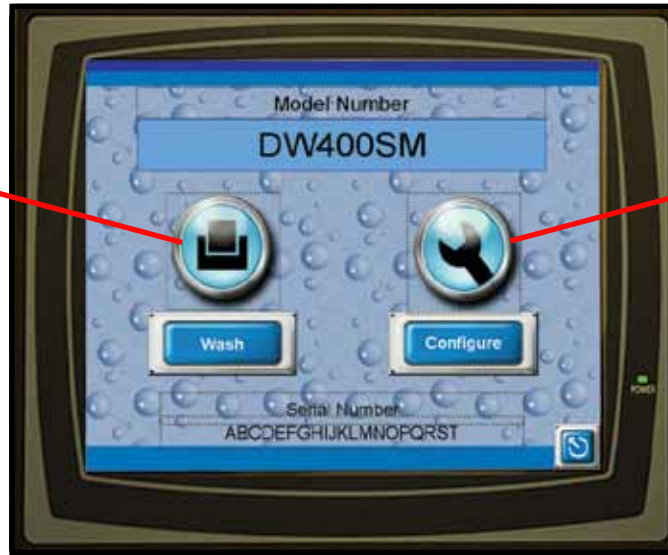
Multiple ports are built into the HMI allowing wash formula upload/download and software update capabilities. Comprehensive interfaces for communication are also incorporated to provide to machine components and outside networks without additional hardware.

The software design can incorporate all EDRO's washer-extractor models back to the early 1990s allowing retrofitting possibilities of previous control technologies. The onboard real time clock is linked to the productivity reports, providing start/stop and error data operations. This historical and alarm data can be viewed on the display, across networks or saved to for viewing offsite.

#### ADDITIONAL FEATURES

- 50, 25-step field programmable wash formula capacity
- Variable water levels, temperatures, and extract speed settings
- Individual chemical injection points allowing two or more chemicals to be injected on the same wash step at different times
- Algorithm timing extract step improving extract balancing
- Manual overrides with password security
- Onboard technical manual with Debug Input/Output troubleshooting
- Seamless integration with EDRO's DynOzone technology
- Multi-language display
- DynaCop machine sequence networking





# DynaTrol



*Simple To Operate  
Sophisticated When Needed*





*Most Efficient  
Washing Process*



### What Is DynOzone?

The gas produced by the Power Cell generators comprises many oxygen species including atomic oxygen and ozone. Although a component is ozone, it is much more than that.

The specific wavelengths of light from the UV lamps generate a free oxygen molecule that form hydroxyl radicals, hydrogen peroxide and other oxidants when added to humid air. These species are more powerful than bleach and heat for germicidal and bacteria-kill strength, and are effective agents for oxidizing, brightening and deodorizing.

### How Does DynOzone Work?

DynOzone, an air stream of charged gas molecules, is generated on site, right at the machine. It is produced by EDRO's exclusive Power Cell technology.

The Power Cell exposes atmospheric air to special crystal lamps emitting both ultraviolet and infrared radiation. As air passes through the Power Cell, a safe, disinfected, and sanitized air stream is created. This is then injected into the wash wheel. DynOzone is not created with high-voltage electricity (corona discharge), and does not require incoming air to be dry.

### Why Choose DynOzone?

Anything that can be processed in a regular washer-extractor can be washed in the DynOzone - DynaWash® Ozone System. Because it cleans the natural way, DynOzone is better for the environment as it requires less resources to attain high-quality results.

DynOzone - DynaWash® Ozone System is a complete system. All components are built into, and fully integrated with, the machine. There are no separate controls, wiring or connections required and components are specifically sized for each machine. DynOzone requires no extra wall or floor space or extra external machine hookups.



EDRO's state-of-the-art DynaTrol Touch Screen Control features HMI (Human Machine Interface) control technology. The unit is based on a Programmable Logic Controller (PLC) using ladder logic code with distributed I/O's and digital and analog modules to precisely control all machine functions. The high speed processing (as fast as 0.24 microseconds) of these controllers excel where only the largest PLCs could go only a few years ago. The compact size saves panel space and module design allows for easier troubleshooting.



A unique feature of EDRO's operating software is the algorithm timing extract step. Unlike conventional rebalancing technology, the new software allows the PLC code and variable frequency drive to pre-distribute the load more evenly for consistent and uniform extract results. This feature is accomplished through field-programmable timing settings of the algorithm extract logic in the PLC code via the HMI configuration. The result is fewer unbalances in extract steps, which means improved production efficiency through faster cycles and less wear and tear on the machine from potentially damaging out-of-balance vibration.

Inverter with single motor drive technology is a tremendous advance in machine speed control. This motor design has significantly fewer parts than a conventional multiple motor setup with single-speed motors, clutches and gearboxes, while delivering more speed selections and greater energy efficiency. Coupled with the programmability of the HMI/PLC, EDRO's washer-extractors are able to deliver exacting cylinder RPMs for the best wash results from wash speeds through high extract.

Multiple parameter settings allow high torque wash speeds with steep slope starts and stops and elongated slopes for even load distribution and acceleration to high extract.

The High Slip Braking feature allows for braking torque in excess of 100% of full load motor torque by controlling the deceleration from high speed to make the motor operate as a very efficient

induction generator. The advantage of this method is that no additional parts are required to stop the machine.

Drives do more than reduce energy cost:

- Drives reduce amps during motor starting, lowering demand charges; another significant part of the electric bill
- Drives are less expensive to maintain than mechanical controls
- Drives inherent soft-starting reduces wear and tear on motors, sheaves, belts, couplings and other system components



To achieve the best possible laundering results, four controlling factors play an essential role in processing:

- ▶ **Mechanical Action**
- ▶ **Chemistry**
- ▶ **Temperature**
- ▶ **Time**

Variance in any of the above factors impacts the effectiveness of the laundering process.

### **Mechanical Action**

Mechanical action is the movement of textiles within the washing cylinder and the flow of washing solution through them. Without mechanical action, detergency - the removal of foreign substances (soil) from textiles - is not effective. The rules that dictate mechanical action are based on cylinder and rib design and speed of the wash step.

Three types of pocket design are utilized in washer-extractor design. They are open pocket, split pocket and three pocket.

Soil cannot be removed from textiles until mechanical action and washing solution are applied, regardless of time, temperature and the composition and concentration of chemistry utilized. Therefore, cycle time length, proper load size, wash speed and water levels principally control variations in mechanical action.

### **Chemistry**

Another factor is the composition and concentration of chemicals employed in the laundry process. The concentration of chemistry plays an essential role in soil-and-water interface penetration, thus allowing mechanical action to free the loosened particles. The imprecise application of chemicals can lead to damaged fabrics or result in the discoloration of textiles such as graying, yellowing, etc.

### **Types of Chemicals**

#### *Detergents*

In chemical terms, detergents are a subclass of chemical compound known as surface-active agents or surfactants. Detergent is often used, incorrectly, to describe a manufactured product that contains a surfactant and perhaps other additives to assist the cleaning process.

While some soils can be removed from fiber surfaces with mechanical action and water alone, most cannot. This is where surfactants play a role. The soil removal process involves loosening and lifting soils from the surface of a fiber and holding them in suspension until the soils can be removed by dilution. The main function of a surfactant or surface-active agent is to suspend soil, although it also plays a key role in loosening soil.

#### *Bleach*

The primary function of bleaching agents is bleaching the natural substances in cotton and cellulose fibers that make the fabric “yellow” and to bleach spots missed during the laundering process. Bleaching agents also bleach textile colors and should be avoided when laundering colored textiles. Bleaching also impacts the fiber structure and can reduce a textile’s lifetime.

#### *Sours*

The fundamental purpose of the souring operation is to neutralize residual alkalinity with a mild acid or acid salt. In textiles, residual alkalinity is caused by:

- The alkalinity levels of tap water
- Carryover from alkalis and detergents
- Hydrolysis of soap



Residual alkalinity in textiles can cause yellowing of white fabrics, fading or dulling of colored fabrics, skin irritation and/or odors.

Another function of the souring operation is to lessen the aggregation of iron in textiles laundered in water that has been contaminated by rust. The souring operation may also assist in:

- The removal of some metallic stains
- The destruction of some species of bacteria
- The setting of some classes of dyes
- The maintenance of white color

### **Softeners**

Fabric softeners are usually cationic surfactants that operate as fiber lubricants that yield a wide range of properties to treated textiles. These include improved feel or “hand”, suppleness, reduced harshness and a reduction in levels of static electricity. Fabric softeners also lessen extraction and tumbling times, improve shake-out prior to ironing and promote ease of finishing.

Softeners are applied in the sour bath or in a separate operation after souring. The softener is easily absorbed by cotton from water and remains in the fabric until subsequent laundering.

Fabric softeners are available as paste, liquid and dry concentrates. They are also available as ready-to-use liquids (diluted with water or alcohol), or dry products (diluted with urea or salt).

### **Ozone**

There are numerous benefits to be gained from using ozone in laundry operations. With the proper wash programs, ozone can save substantial money on operating efficiencies. Total cycle time, hot water usage, and overall water usage can be reduced and still produce quality results.

Ozone systems allow laundry to be sterilized, disinfected, bleached and deodorized using reduced water, chemicals and heat during the washing process. When ozone is injected into the wash water, it provides complete disinfection of the laundered garments, even at ambient water temperatures. Ozone aids in the breakdown and dissolving of oils in laundered textiles. Garment life is also extended thanks to the decrease in wear by the reduction of chlorine, hot water and wash cycles.

### **Temperature**

The next factor to consider is temperature.

- Higher temperatures promote washing compound and soil particle action by reducing surface/interfacial tension and water viscosity
- Higher temperatures enhance the movement of chemicals involved in the laundering process, making the chemicals faster-acting and more efficient

Most chemical reactions in laundering double in reaction speed every 18°F (10°C) increase. However, some chemicals and chemical systems also have maximum operating temperatures. Operating outside a chemical product’s recommended range can produce quality problems, textile damage and/or operator health concerns.

### **Time**

Time can be regulated by adjusting the number of minutes that each wash step runs.

Mechanical action, chemicals, temperature and time all work together. Their roles can be inter-related. If any one of the factors is reduced; one or more of the other factors must be increased in order to maintain the whole and produce desired results.

# EDRO Corporation

P.O. Box 308  
East Berlin, CT 06023  
U.S.A.

Visit EDRO on the web at:  
[www.edrocorp.com](http://www.edrocorp.com)

Contact EDRO at:  
+ 860-828-0311 - International  
860-828-5984 - Fax

E-mail EDRO at:  
[sales@edrocorp.com](mailto:sales@edrocorp.com) - machinery sales  
[parts@edrocorp.com](mailto:parts@edrocorp.com) - spare parts sales  
[service@edrocorp.com](mailto:service@edrocorp.com) - tech support & service



Our quality culture:  
doing it right every time, all the time,  
even when nobody's looking.



Technical specifications and product information are based on the latest information available at the time of printing and subject to change without notice. The DynaWash® brand and logo are registered trademarks of The EDRO Corporation.

DynaWash® brand washer-extractors are manufactured in accordance with Canadian Standards Association general requirements in production facilities utilizing quality assurance systems that meet best commercial business practices ensuring our ongoing commitment of product excellence.

April, 2017  
DBPRDCTG:1718