

MOKON®



Circulating Water Systems ...

**FOR TEMPERATURE CONTROL OF PLASTIC
PROCESSING AND OTHER EQUIPMENT.**

MOKON®

TEMPERATURE CONTROL SYSTEMS

A complete line for all thermal process applications

The Mokon line of circulating water temperature control systems includes seven standard Series designed for use with plastic injection molding machines and other process equipment. With the wide variety of pumping and electrical heating capacities available, Mokon units can be furnished to meet virtually any use demand for water temperatures up to 250°F, or 300°F when sufficient supply pressure is available.

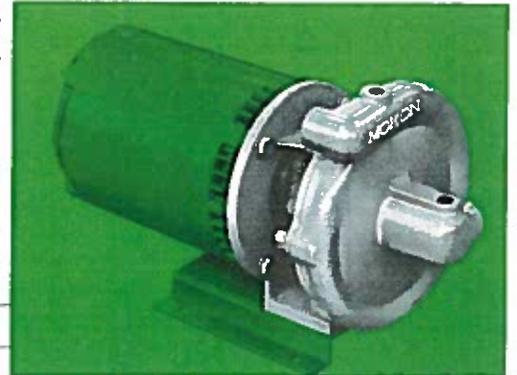
Leading the line is the economically priced GP (General Purpose) Series, ideally suited to handle the majority of molding applications. It features the first pump developed exclusively for liquid heat transfer systems, providing both high pressures up to 50 psi and high flow rates up to 17 gpm. Precisely engineered, the GP Series will deliver exceptional performance and long, trouble free service.

To cover other process demands outside the GP Series range, the Mokon line also includes the HV (High Volume) Series and the XV (Extra High Volume) Series. In addition, four SUPER MOKON Series (GS, SM, HS and XS) for extended pressure (up to 60 psi) and volume (up to 80 gpm) requirements are available.

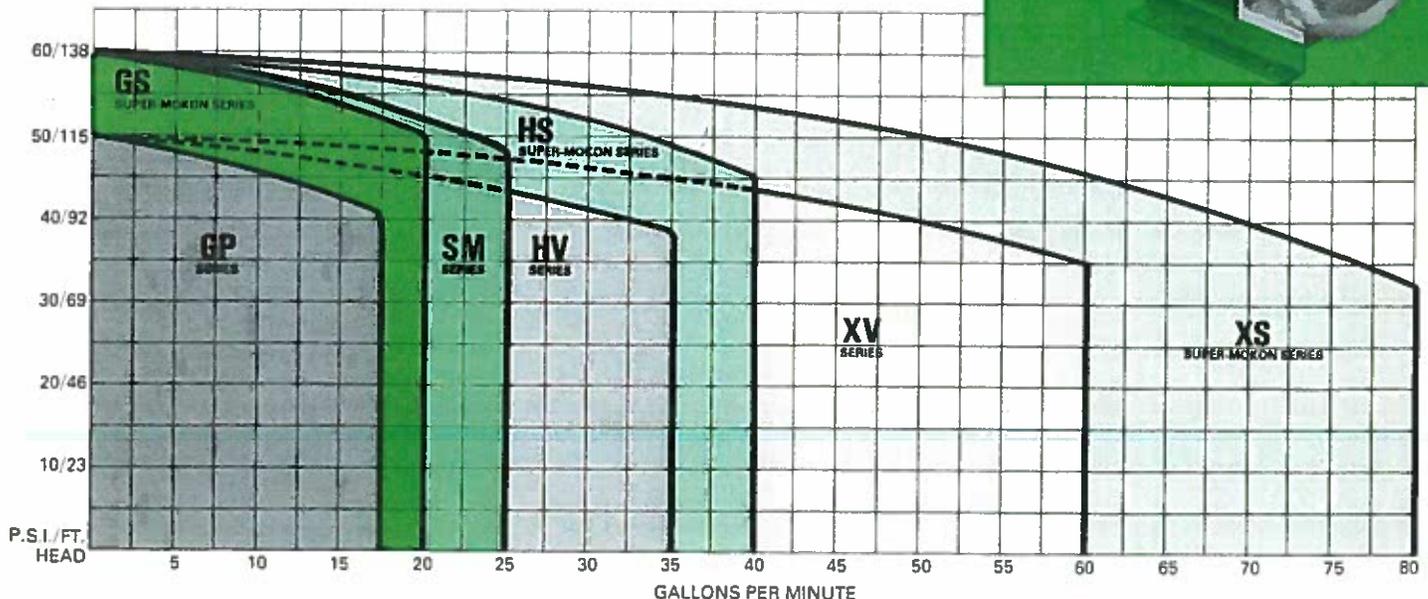
The SM Series is the workhorse of the extended SUPER MOKON line, providing outstanding performance in the majority of process control applications. They feature a bronze manifold engineered for compatibility with the Super Mokon Pump and larger plumbing, providing the high pressures necessary to give greater flow rates and overcome severe process flow restrictions.

All Mokon units offer improved heat transfer efficiency because the specially designed pumps create turbulent rather than laminar water flow through mold passages.

Mokon pump engineered specifically for circulating water temperature control systems provides wide range of pressure and volume capabilities.



Capacities of Standard Mokon Water Units*



*Charted data may vary according to unit size and/or installation.

important Mokon features

Two No-Cost Control Options

- **MECHANICAL:** Mokon units are equipped with a specially designed mechanical modulating valve operated by a controlled system with a single dial on which the desired process temperature is set. This simple, proven system is wholly adequate for many applications, automatically actuating the heaters or adding coolant as fluctuations from the set temperature occur.
- **ELECTRONIC:** Mokon's most recent development in control is its exclusive Compumate solid state electronic option, offering unmatched precision in maintaining set temperature and state-of-the-art reliability. Compumate employs anticipatory sensing for instant response and eliminates "hunting" for the set temperature. The time proportioning technique for cooling and heating (when required) also effect significant power savings. See bulletin COM. 979 for details.

Small Size Manifold

The Mokon principle permits use of an extremely small manifold. Only about one pint of fluid per KW capacity will be in the system (exclusive of the mold) at any time. With less liquid to control, power requirements are reduced, faster reaction to dial setting changes achieved, startup and mold changeover times appreciably cut.

Highly Efficient Heater Arrangement

Water is heated only as it is delivered to the mold, so there is no need for a long preheat of large volumes of fluid.

Heaters are completely immersed in a turbulent flow of water. And with their full surface area utilized for fluid heating, efficiency is increased immeasurably.

This arrangement also eliminates hot spots and premature burnouts. Modular design permits replacement of a single heater instead of a set, if one should eventually fail. Units with larger KW capacity have additional heater elements, thereby maintaining a constant watt density. This important feature prolongs the life of individual heaters.

Operation Quickly Checked

Mokon units include a number of convenient features to assist the operator in monitoring the process. On all units a pilot light indicates when the unit is running, and on Compumate-equipped units there are two additional lights to indicate whether the unit is heating or cooling. "Process In" and "Process Out" dial thermometers indicate operating conditions and standard pressure gauges on pump supply and discharge give additional valuable information.

Safety Devices

Mokon systems offer various devices to protect the unit and operating personnel. Among them is an optional low pressure safety cut-off incorporating an interlock which prevents operation should a mold hose break, or if the water source fails or is inadvertently turned off. Heater burnout and pump seal damage are thereby avoided. With the addition of the optional Fluid High Temperature Safety Control the power to the unit is automatically turned off if the temperature exceeds the unit's maximum capability.

Non-corrosive Construction

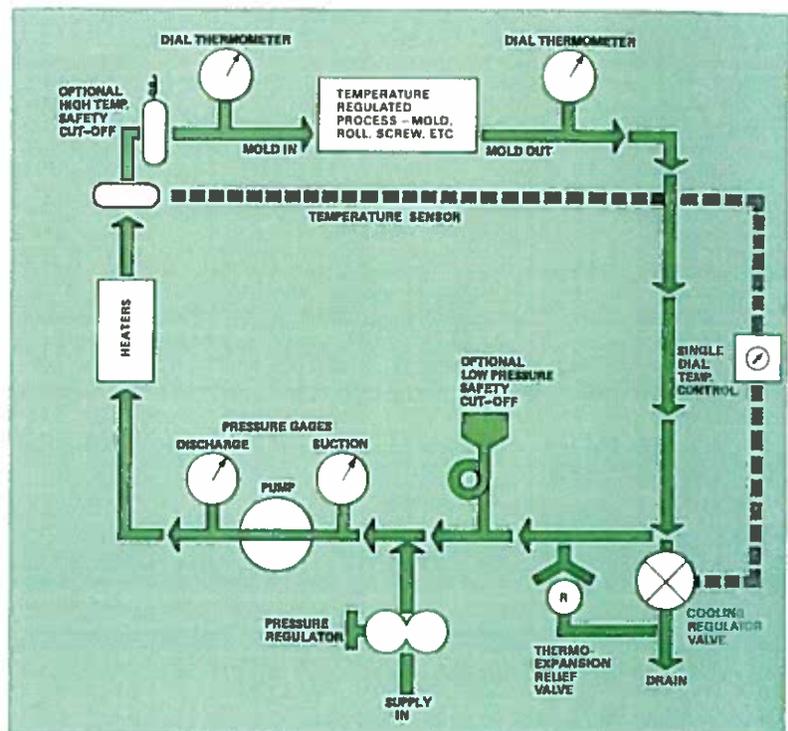
Heaters, pump impeller, heater manifold and piping are made of non-corrosive materials. This assures long life and sustained heat transfer efficiency. The standard pump seal has a stationary metal Niresist face with carbon rotating member for longer life.

Compact, Light in Weight

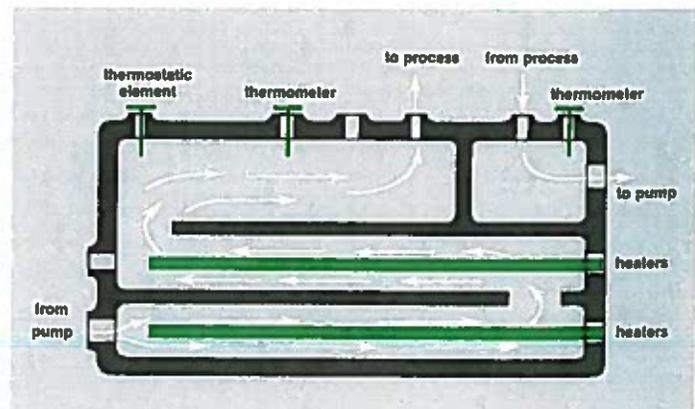
The Mokon principle reduces space requirements and weight, making these units highly portable and easy to move from machine to machine. They may also be stacked to further conserve floor space or mounted directly on the frame of a molding machine.

Extremely Simple Installation

The Mokon system is completely self-contained, including a pressure regulator to increase seal and gasket life. Simply make water, drain, and electrical connections and it's ready for use.



Typical open circuit flow schematic shown above. (Closed circuit is also available)



Cross-section of the extremely small Series GP, SM and GS manifold which permits faster reaction and lower power requirements.

Mokon Specifications

NOTE: All units are equipped with COMPU•MATE® Controller as standard.

SERIES	MODEL NUMBER	HEATER KW	VOLTAGE 3PH 60HZ	DESCRIPTION		CONSTRUCTION			
				DIMENSIONS LxWxH (in.)	MOTOR O.D.P.	PUMP* CAPACITY	PLUMBING	HEATER MANIFOLD	
GP	GP-2A04	4	230V	24x13x13	1 H.P.	TO 17 GPM AND TO 50 PSI	1/2" Copper Tubing, Brass Fittings	Standard Cast Bronze w/1/2 F.N.P.T. Ports	
	GP-2A08	8							
	GP-4A04	4	460V	30x13x13					
	GP-4A08	8							
GS	GS-2A04	4	230V	24x13x13	1 1/2 H.P.	TO 20 GPM AND TO 60 PSI	1/2" Copper Tubing, Brass Fittings	Standard Cast Bronze w/1/2 F.N.P.T. Ports	
	GS-2A08	8							
	GS-4A04	4	460V	30x13x13					
	GS-4A08	8							
SM	SM-2A04	4	230V	24x13x13	1 1/2 H.P.	TO 25 GPM AND TO 60 PSI	3/4" Copper Tubing, Brass Fittings	Super Cast Bronze w/3/4 F.N.P.T. Ports	
	SM-2A08	8		24x17x13					
	SM-2A12	12	460V	30x13x13					
	SM-4A04	4							
	SM-4A08	8		30x17x13					
	SM-4A12	12							
HV	HV-2A04	4	230V	28x15x19	1 1/2 H.P.	TO 35 GPM AND TO 50 PSI	1 1/4" Brass Pipe, Brass Fittings	Brass Pipe w/1 1/4 F.N.P.T. Ports	
	HV-2A08	8							
	HV-2A12	12	230V	25x18x42†					
	HV-2A18	18							
	HV-2A24	24		460V					28x15x19
	HV-4A04	4							
	HV-4A08	8	460V	25x18x42†					
	HV-4A12	12							
	HV-4A18	18		25x18x42†					
	HV-4A24	24							
HS	HS-2A04	4	230V	28x15x19	2 H.P.	TO 40 GPM AND TO 60 PSI	1 1/4" Brass Pipe, Brass Fittings	Brass Pipe w/1 1/4 F.N.P.T. Ports	
	HS-2A08	8							
	HS-2A12	12	230V	25x18x42†					
	HS-2A18	18							
	HS-2A24	24		460V					28x15x19
	HS-4A04	4							
	HS-4A08	8	460V	25x18x42†					
	HS-4A12	12							
	HS-4A18	18		25x18x42†					
	HS-4A24	24							
XV	XV-2A04	4	230V	25x18x42†	2 H.P.	TO 60 GPM AND TO 50 PSI	1 1/2" Brass Pipe, Brass Fittings	Brass Pipe w/1 1/2 F.N.P.T. Ports	
	XV-2A08	8							
	XV-2A12	12	460V	25x18x42†					
	XV-2A18	18							
	XV-2A24	24		25x18x42†					
	XV-4A04	4							
	XV-4A08	8	460V	25x18x42†					
	XV-4A12	12							
	XV-4A18	18		25x18x42†					
	XV-4A24	24							
XS	XS-2A04	4	230V	25x18x42†	3 H.P.	TO 80 GPM AND TO 60 PSI	1 1/2" Brass Pipe, Brass Fittings	Brass Pipe w/1 1/2 F.N.P.T. Ports	
	XS-2A08	8							
	XS-2A12	12	460V	25x18x42†					
	XS-2A18	18							
	XS-2A24	24		25x18x42†					
	XS-4A04	4							
	XS-4A08	8	460V	25x18x42†					
	XS-4A12	12							
	XS-4A18	18		25x18x42†					
	XS-4A24	24							

NOTE: All units have operating temperature ranges from supply water temperature up to 250°F. Temperature range up to 300°F. available upon request at no additional charge.

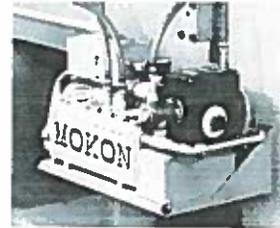
*See Pump Performance Curves on Pg. 2

†Dimensions include caster mountings.

Mokon reserves the right to discontinue or change specifications, designs or materials, without notice, consistent with sound engineering principles and modern practices.

Mokon options

FOLLOWING OPTIONS AVAILABLE AT ADDITIONAL COST:



Angle Mounting Bracket (Series GP, GS and SM) — a special fabricated steel bracket which permits mounting of unit directly on the frame of press.



Dolly Mounting — all units are available with dolly mounts to provide portability. All Series XV and XS, as well as Series HV and HS larger than 12KW, come with caster mounting as standard. In addition, **Double Deck and Triple Deck Heavy Duty Dollys** may be ordered for Series GP, GS and SM.



Power Centers — multiple unit plug-in receptacles for single-source power supply connection.



Cabinets — closed cabinet construction is available as an option on Series GP, GS and SM.



Closed Water Circuitry — (GP, GS and SM). Mold water is constantly recirculated and temperature controlled by a built-in heat exchanger. Recommended for areas where the contaminant content of supply water can pose maintenance problems or when drain back pressure creates pumping obstruction.

J. I. C. Construction — available in Series GP, GS and SM.

OTHER OPTIONS (illustrated on Pg. 5):

- Control Options
 - Compumate — solid state electronic
 - Mechanical Controller

Dolly Mounting — Single unit

Flow Director — heavy-duty, bronze water manifold (2 sizes)

Low Pressure Safety Cut-Off — Prevents the Mokon unit from running dry if water source fails or mold hose breaks.

High Temperature Safety Cut-Off — A thermostatic device that turns off the Mokon unit when unsafe high temperatures are reached.

OTHER OPTIONS (not illustrated). Consult factory for details.

Unit Overload Protection — Circuit breaker type

Water Filter — Cartridge type with 1/2" N.P.T. pipe thread connections

T.E.F.C. Motors — Totally enclosed fan cooled motors

Other Voltages, Phase and Frequencies

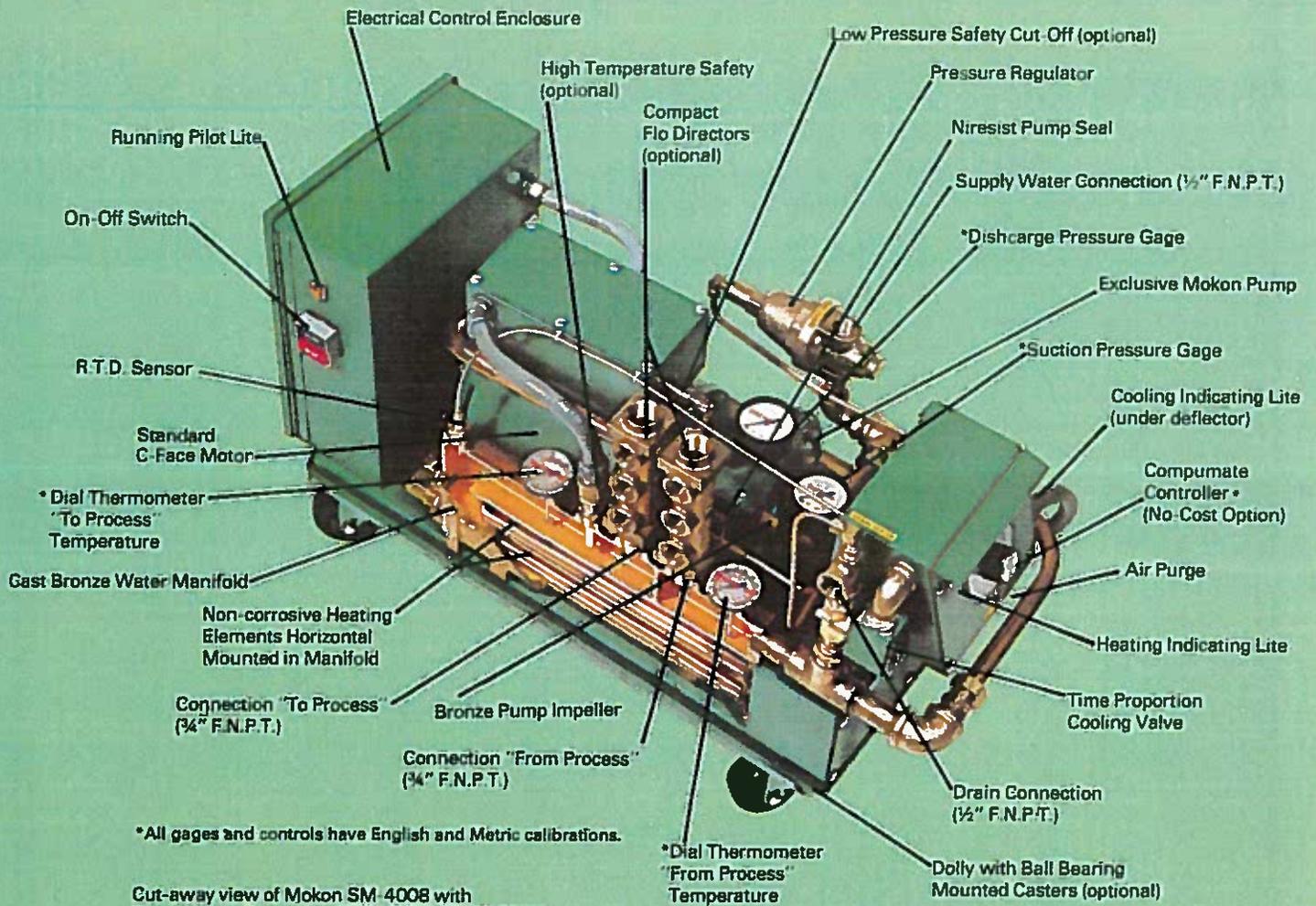
Power Cord — Flexible P.V.C. Covered cord with 3-wire and ground

Teflon Steel Braided Hose — Recommended for Process in/out connection

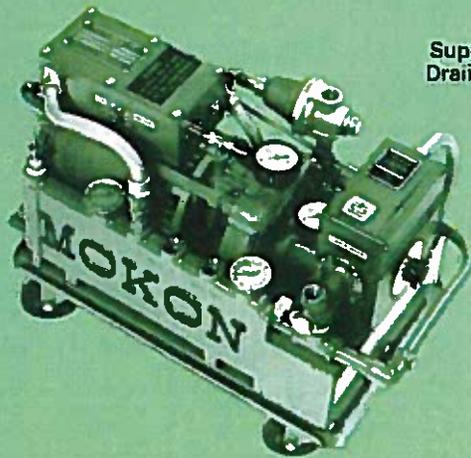
Heater Selector Switch — 2-position Hi Lo.

Spare Parts Kits — Available in different combinations. Consult factory.

Special Options and Design Available Upon Request.



SM Series (Super Mokon) — This Series, with its specially designed Mokon pump, offers a combination of high pressure / high volume pumping capability to meet the flow demands of most molding processes.



1/2" F.N.P.T. Supply Water and Drain Connections

Dolly and Casters (standard on XV and XS Series, as well as on HV and HS larger than 12KW; optional on all other units)

Process Connections, 1 1/4" F.N.P.T. (HV / HS Models), 1 1/2" F.N.P.T. (XV / XS Models)

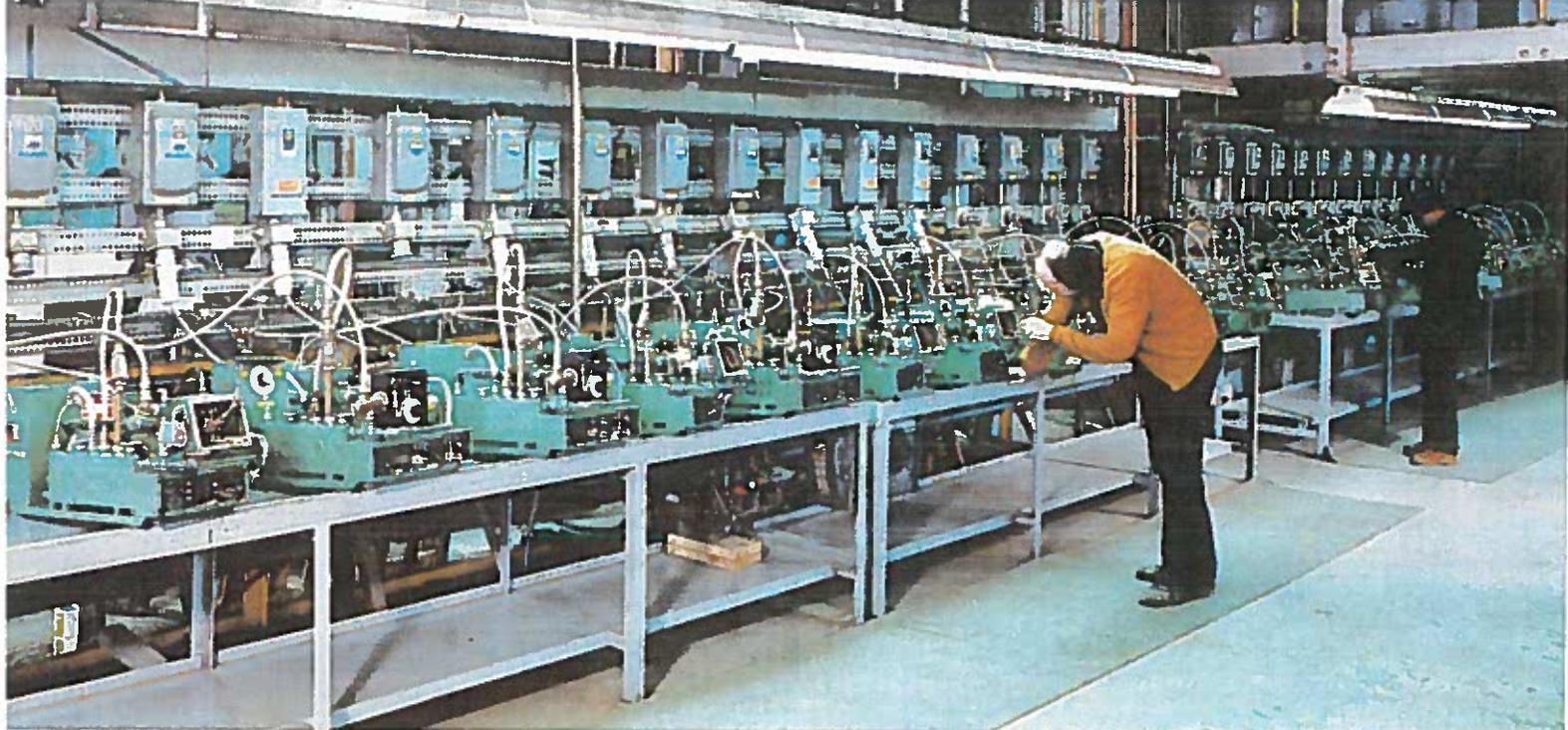
GP Series — 230V. style. Shown with Mechanical Controller. Also available with Compumate.

GS and SM Series — The Super Mokon series resembles the GP in appearance but offers greater performance.

HV Series (High Volume) — Designed for the big jobs requiring very high volume flows, this Series incorporates a Mokon-designed pump that has a capacity up to 50 psi and 35 gpm.

XV Series (Extra High Volume) — The pump used in this Series, a version of the Mokon-design, generates flow rates up to 60 gpm.

HS and XS Series — The Super Mokon High Volume and Extra High Volume models have the same exterior cabinetry as the HV and XV but give even greater pressure and volume output. (See specification chart on page 4.)



thorough testing

All Mokon temperature control systems are qualified for service by rigid, simulated field tests at the factory before they are released for shipping. During these tests, units operate at a maximum temperature 80% of the time.

full year warranty

Mokon offers this generous warranty without hesitation. Our systems are designed for long trouble-free service and carefully constructed with reliable parts and durable materials. Each unit is thoroughly tested before it leaves the factory. Add to this simplicity of operation and dependable accuracy and you have a system we are confident can readily sell itself. So confident, in fact, we even have a 30-day free trial plan. Ask about it.

factory service

Complete rebuilding, repairing, and reconditioning services are available at the factory. Consult factory for full information. In addition, Mokon will provide field service for any of its equipment upon request.

MOKON®

FULL YEAR WARRANTY

All new temperature control systems, manufactured by the MOKON DIVISION OF PROTECTIVE CLOSURES CO., INC are guaranteed to be free from defective material or workmanship for a period of (1) year from the date of shipment and this warranty shall be limited to the repair and replacement of parts and the necessary labor and services required to repair the goods. Any unit or part proving to be defective in our judgement within this time will be replaced or repaired at our option without charge at the Mokon Factory. It is the customer's responsibility to pay all transportation costs to and from Buffalo, New York. The customer has the option to have a Mokon serviceman come to his facilities if they pay all transportation, food and lodging costs. Prior to arrival the customer must issue a Purchase Order agreeing to pay for all material and labor costs if the problem is determined not to be covered by warranty.

No allowance, credits or reimbursements will be made for any replacement or repair made or provided for by customer unless authorized by the Mokon Division.

THERE ARE NO WARRANTIES EITHER EXPRESSED OR IMPLIED WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE OF THIS AGREEMENT, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY.

MODEL SERIAL NO. DATE PURCHASED

PURCHASED THROUGH

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