

GRS SERIES III KOMPRESS®

Belt Filter Press

*Superior Mechanical Dewatering
Performance by Design*



Komline-Sanderson

The Komline-Sanderson GRS Series III KOMPRESS® Belt Filter Press

The Best Value and Performance in Mechanical Dewatering Systems Available

Here's Why:

A Larger Standard Filtration Area for Greater Process Throughput and Higher Cake Consistency

The GRS Series III starts with more standard filtration area than other comparable systems and combines **logically integrated gravity dewatering, adjustable wedge and high compression stages** for optimum performance. When combined with K-S's High Rate Drainage System, the GRS Series III significantly increases process throughput over a similarly-sized competitive system with better filtration results.

A choice of 2 or 3-belt dewatering systems with standard, extended and independent gravity zones—unique to the GRS Series III—offers consistently high cake solids performance for normal, poor draining, or extremely dilute sludges.

A Patented High Rate Drainage System that Dramatically Improves Filtration Rate

The unique design of the GRS Series III's patented High Rate Roto-Kone® Drainage System—another K-S technological advance—significantly increases throughput over competitively-sized belt filter press systems. The Roto-Kone's unique ability to hold solids in the gravity zone for longer periods of time and turn these solids repeatedly results in a dramatically improved filtration rate.

An Easily Adjustable, Variable Wedge Compression Zone that Maximizes Process Rate and Performance

The GRS Series III features a variable wedge compression zone that utilizes two tensioned filter belts to draw dewatering material into the wedge under gradually increasing pressure as the material approaches the first dewatering drum.

Unlike fixed or adjustable plate design wedge stages, the GRS Series III's unique ability to "set a gap" by moving the wedge stage's entrance roller provides the needed flexibility to accommodate inlet consistency changes and other process factors to maximize both throughput rate and performance.

A High Performance, Larger to Smaller Drum Pressure Profile for Higher Cake Solids Concentration

The GRS Series III's high performance pressure profile begins with a larger 30" diameter self-bailing, perforated dewatering drum as opposed to smaller drums typically found in other competitive belt filter presses. While more costly to build, a larger diameter first drum starts the dewatering process at a lower pressure to eliminate the possibility of an "upset" condition.

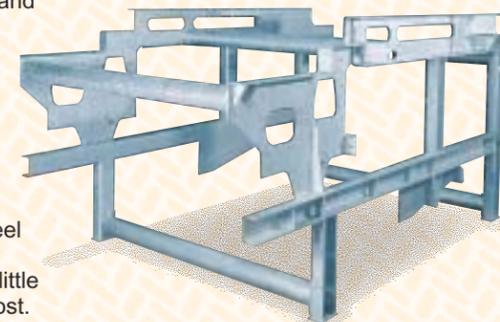
Use of this larger first drum and a succession of decreasing diameter drums gradually increases the pressure profile to a maximum dewatering force that produces the highest cake solids.

High Quality Structural Frame Materials and Components for Trouble-Free, Long Lasting Operation

The GRS Series III is built with the highest quality frame materials and components to ensure trouble-free, long lasting operation in hostile sludge dewatering environments.

Structural Frame

The heavy duty 3/8" structural steel frame is designed for ten times (10x) calculated loading, is hot dipped galvanized after all welding, and includes stainless steel fasteners with self-locking nuts. 304 and 316 stainless steel frames are available at little additional cost.



Roller and Journal Design

A specialized roller and journal design features nylon covered, 1/2" thick, heavy duty rollers with double end plate construction for long life and 17-4 PH stainless steel journals that are 2-11/16" diameter at the bearing for maximum strength.



Variable Orifice Mixing Valve

Rugged 316SS valve provides adjustable mixing capability to greatly reduce polymer usage.



Bearing Design

One size, heavy duty split pillow block, spherical roller bearings C-rated to 48,000 lbs. provide a minimum L-10 life of 800,000 hours and more. A highly effective inboard seal design incorporates a triple check seal to protect the bearings from external contaminants and water.



K-S Custom Designed and Built Instrumentation/Controls for Guaranteed System Integrity

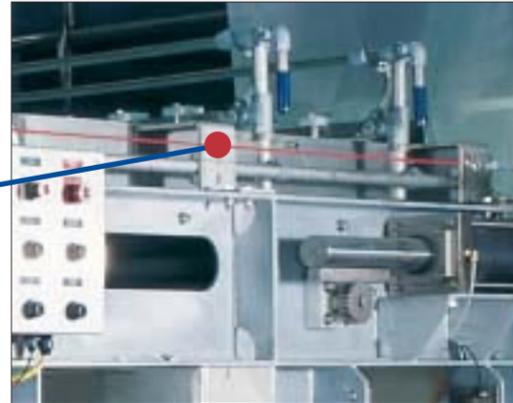
All instrumentation and controls for the GRS Series III are custom designed and built in-house to meet individualized customer needs and ensure complete operating system integrity.

K-S uses only the highest quality UL listed components, completely labels all wiring, and runs panel wiring in panduit. NEMA 4X stainless steel enclosures are standard and the panel can be UL 508 labeled.

K-S's extensive experience with PLC's also means the GRS Series III can be easily integrated into touch screen, DCS, MMC, or stand alone system architectures.



Outstanding Operating Features and Technology Advances for Higher Throughput Capacity, Lower Operating Cost, and Easier Maintenance



BUILT-IN SAFETY ROPE surrounds the entire system for emergency shutdown. Additional automatic shutdown controls stop the system for low pneumatic/hydraulic pressure, gross belt misalignment or broken belt, drive failure or low belt wash pressure.

GRAVITY AND WEDGE ZONE BELT SUPPORT BARS are made of abrasion-resistant polyethylene and enhance dewatering by breaking surface tension of liquid.

PATENTED LIFTING MECHANISM in the High Rate Drainage System facilitates raising and lowering of plows and elements into or out of service.

CONTINUOUS BELT WASHING is provided by fully enclosed wash stations with high pressure SS spray nozzles, internal cleaning brushes, special seals to eliminate noise and overspray, and access panels for convenient maintenance.

VARIABLE WEDGE COMPRESSION ZONE can be easily adjusted during operation to set a dewatering gap that maximizes material process rate and performance.

REPLACEABLE POLYPROPYLENE DISCHARGE BLADES extend over entire belt width, have a belt seam protector and are counterweighted. Dry cake discharge is standard with optional discharge for thickened, pumpable sludge.

HEAVY DUTY SPLIT PILLOW BLOCK SPHERICAL ROLLER BEARINGS are all one size. A highly effective sealing arrangement protects bearings from external contaminants and water.

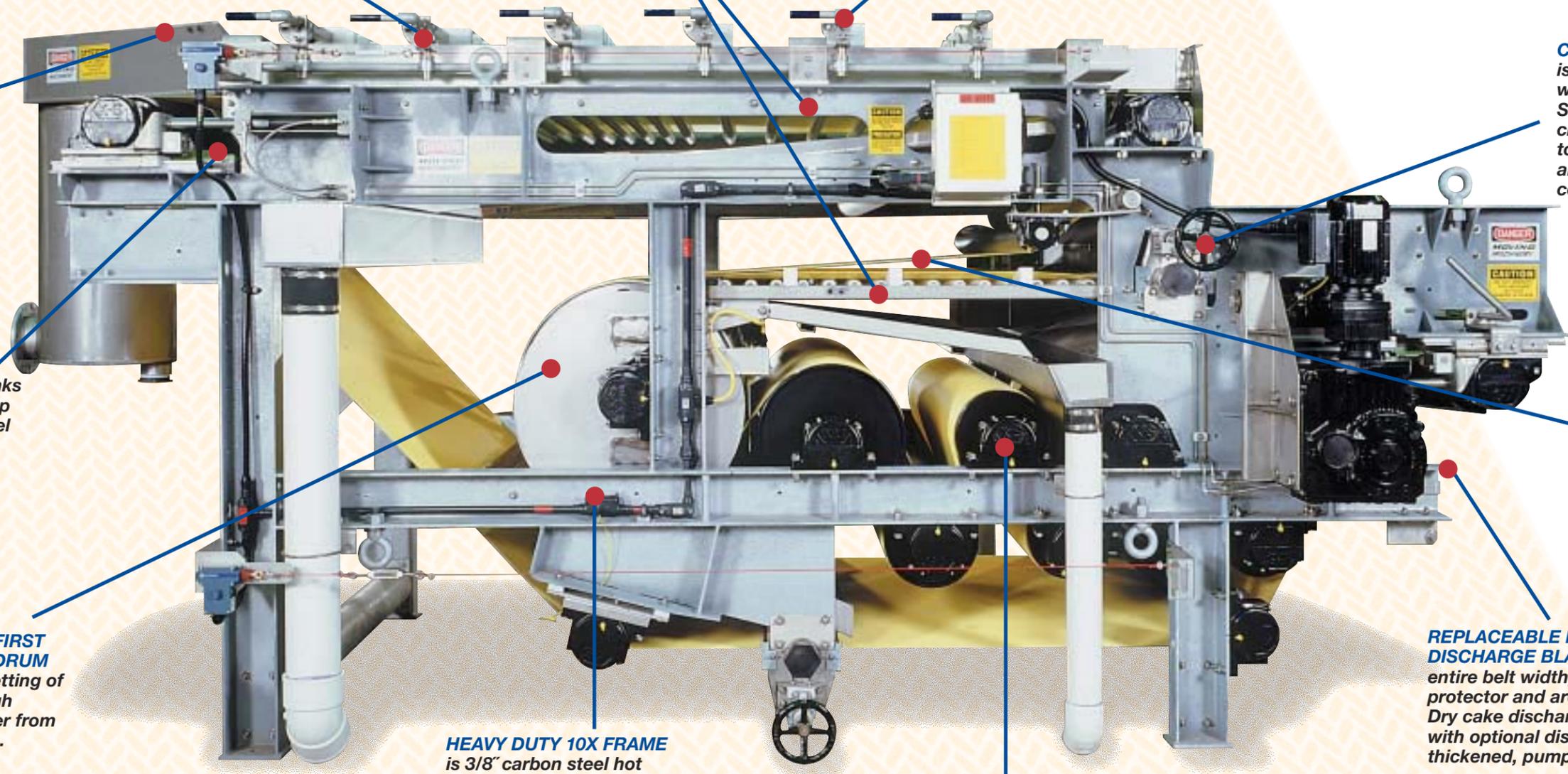
HEAVY DUTY 10X FRAME is 3/8" carbon steel hot dipped galvanized after welding. 304 and 316 stainless steel frames are available.

SELF-BAILING PERFORATED FIRST DEWATERING DRUM eliminates rewetting of the cake through removal of water from inside the drum.

RACK & PINION TENSION control links both ends of take-up roll to assure parallel belt movement and prevent uneven belt tension.

FEED SECTION features flocculation tank and feed box to uniformly distribute sludge across entire width of belt while eliminating high spots.

HIGHLY EFFICIENT GRAVITY ZONE with Roto-Kone® elements and Roto-Trak® plows works sludge to promote rapid drainage.



A Choice of 2 or 3-Belt Dewatering Systems with Standard, Extended, or Independent Gravity Zones for Consistently High Cake Solids in Varying Sludge Conditions

2-Belt System with Standard Gravity Zone (GRS)

The standard 2-belt gravity dewatering system (GRS) utilizes one of the pressure belts in the gravity zone. Belt selection represents a compromise between a more open belt required for optimum gravity drainage and a tighter belt required to retain solids in the pressure zone.

Use for sludges having feed solids concentrations of 1.5% and greater, or where there is no additional benefit to retaining thickened solids in the gravity section for longer periods of time.

2-Belt System with Extended Gravity Zone (GRSL)

The extended 2-belt gravity dewatering system (GRSL) provides a larger gravity filtration area for slow-draining sludges.

Use of an extended gravity zone allows additional drainage time to assure removal of all free water, and proper stabilization of solids prior to entering the wedge and high pressure zones.

Use for sludges with feed solids concentrations of 1.5 to 2.5% or other sludges that drain slowly and will benefit from extra dewatering time.

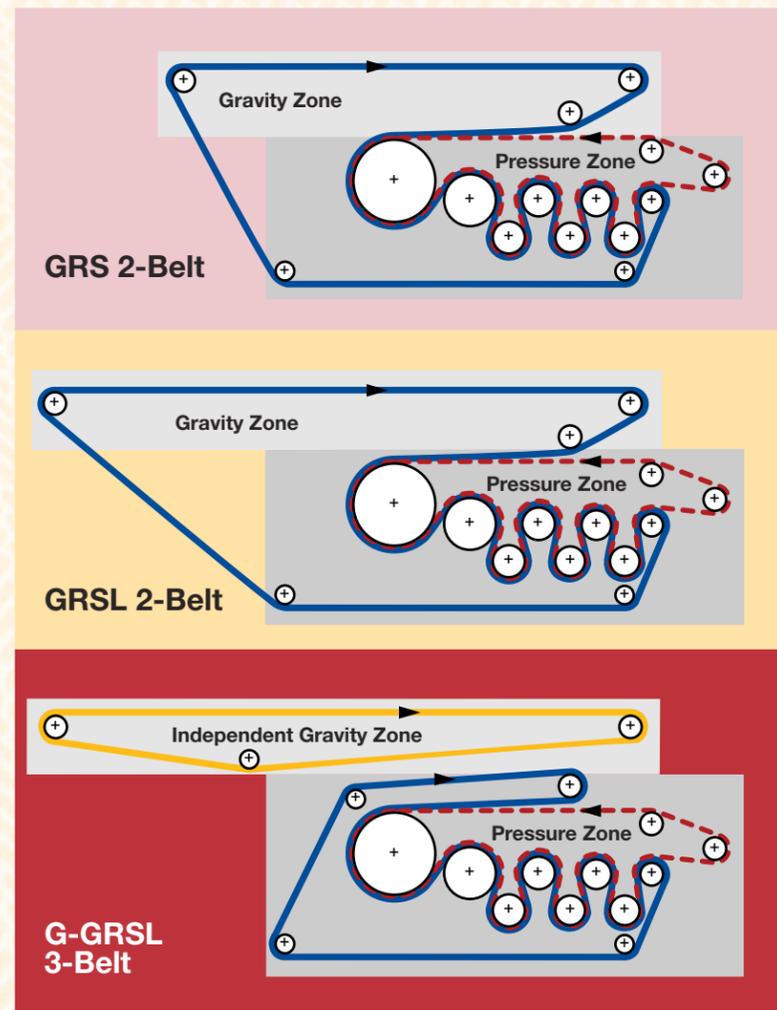
3-Belt System with Independent Gravity Zone (G-GRSL)

The 3-belt gravity dewatering system (G-GRSL) with independent gravity zone provides increased hydraulic filter capacity from the same gravity filtration area as the 2-belt GRSL.

The G-GRSL's specially designed independent gravity zone allows selection of open, more porous belts to accommodate the higher hydraulic loadings that occur when dewatering dilute sludges.

A separate belt drive provides independent speed control to:

- **Handle dilute sludges with feed solids concentrations of 1.5% solids and lower**
- **Produce higher cake solids**
- **Provide higher production rates without sacrificing cake solids**
- **Operate as a gravity belt thickener**



More Value-Added Reasons You Can Rely on Komline-Sanderson

The Industry's Highest Commitment to Quality

Since 1946, K-S's ongoing commitment to quality can be readily seen in the thousands of liquid/solid separation systems designed and built for continuous operation in a diverse range of hostile municipal wastewater treatment, industrial waste pretreatment, and process environments. K-S engineering and system design, specification of materials, manufacturing and assembly, system start-up, support and service all begin and end with one goal in mind—total customer satisfaction!

The Industry's Most Comprehensive Menu of Services

K-S offers a complete range of services—including feasibility testing, on-site pilot plant testing, preliminary engineering and budget proposals, system design and final manufacturing—to meet any customer requirement.

K-S also prides itself on carefully listening to you—the customer—to design and build equipment that addresses both short term processing, and longer term system flexibility, operating efficiency, and reliability needs.

The Industry's Most Responsive Service and Support Network

No matter what the need, K-S offers prompt, responsive service and support—when and where you want it.

Have an operating problem that could lead to costly process downtime? K-S factory technicians are on the job quickly to determine the source of the problem, fix it, and get your process back on line.

Trying to determine the right chemicals to use for sludge or slurry pretreatment? K-S can simulate process conditions in the laboratory or on-site to help you determine exactly the right product to do the job.

Considering a retrofit to improve process performance? K-S can evaluate and upgrade existing equipment with the latest generation components and subassemblies to improve throughput efficiency and reduce overall operating costs.

K-S even has a trailer mounted GRS Series III KOMPRESS® that can be easily driven to your location for a complete demonstration or on-site evaluation of current dewatering requirements.



The Industry's Best Maintenance and Extended Warranty Plans

K-S also offers the best maintenance and warranty plans available to keep your process up and running and reduce potential downtime.

K-S inspection/evaluation plans are renewable yearly and are designed to thoroughly evaluate the performance of your GRS Series III and spot potential problems before they occur. A written report detailing operating efficiency and any recommended parts/service is provided as part of each scheduled visit.

K-S maintenance agreements can be renewed annually and allow our service technicians to perform routine service—including cleaning, lubrication and adjustments—as a way to prevent unscheduled problems.

K-S extended warranty plans are also available yearly to protect critical operating components and subassemblies on your entire system. You choose the coverage that's exactly right for your needs.

GRS Series III KOMPRESS® Dimensions

MODEL	LOADED WEIGHT		LENGTH (L)		WIDTH (W)		HEIGHT (H)	
	lbs	kg	ft-in	cm	ft-in	cm	ft-in	cm
GRS-1	14,700	6,670	18-2	554	7-6	229	8-6	260
GRS-1.5	18,300	8,300	18-2	554	9-4	285	8-6	260
GRS-2	21,500	9,750	18-2	554	11-0	336	8-6	260
GRSL-1	15,700	7,120	22-7	689	7-6	229	8-6	260
GRSL-1.5	20,000	9,070	22-7	689	9-4	285	8-6	260
GRSL-2	23,400	10,620	22-7	689	11-0	336	8-6	260
G-GRSL-1	16,700	7,570	21-10	666	7-6	229	9-4	285
G-GRSL-1.5	21,300	9,660	21-10	666	9-4	285	9-4	285
G-GRSL-2	23,800	10,790	21-10	666	11-0	336	9-4	285

Typical Applications for KOMPRESS Belt Filter Presses Include:

- Municipal Wastewater Treatment
- Water Treatment Sludge
- Industrial Waste

For more information on other available equipment and technology for clarification, thickening, dewatering, drying, and pumping ask for the Komline-Sanderson Wastewater Treatment and Sludge Management Solutions Brochure.



For engineering and design information on available belt filter press models including sizing and selection of system components, facilities design, installation considerations, and writing of purchase specifications, ask for the Komline-Sanderson KOMPRESS Belt Filter Press Design Manual.



To Contact Komline-Sanderson:

Call: 1-800-CALL 4 K-S (225-5457)

Fax: 1-800-FAXS 4 K-S (329-7457)

e-mail: info@komline.com

www: <http://www.komline.com>



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