



**Greater efficiency through
on-demand paste production**

GSE *Dispensing*



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Our automatic dispensing systems enable you to significantly improve the efficiency of your textile printing processes by giving you colour on demand. Fast, accurate 'just-in-time' production of printing paste improves quality while reducing stock levels, allowing you to increase your margins and offer a better end product.

All GSE automatic dispensing systems are characterised by minimal machine downtime, better reuse of printing paste, lower maintenance costs and extremely high equipment reliability. They are also straightforward to install and easy to operate. What's more, their modular design allows a perfect match with your existing production equipment, as well as easy expansion.

Meeting all your production requirements

GSE offers a range of four fully automated and computerised gravimetric dispensing systems to meet even the most demanding production requirements. All systems take up relatively little floor space and incorporate a unique valve design and a self-learn-

ing software to ensure rapid, accurate and splash-free dispensing – even with fluctuations in viscosity.

Other standard features include automatic valve cleaning after every dispensing cycle to maintain colour integrity, circulation control to minimise dye-stuff setting, and air-operated valves and pumps that require very little maintenance.

A number of additional features boost performance still further. The Thickening Preparation System (TPS) ensures extremely smooth, consistent printing paste thickenings every time. And the advanced Textile Management Software (TMS) package optimises printing paste production.

Peace of mind

Being a leading dispensing solutions supplier involves much more than just providing high quality equipment. It also means continuing to care about your business long after installation has taken place. This is why we have put together a unique service package. This package is created in order to help you keep your equipment operating at the highest level of efficiency during its working life.

Direct access to the assistance you need

Your first point of contact will be our Customer Support Centre. We have sophisticated equipment to communicate with your dispensing system, register problems and provide helpdesk assistance. We can give you a fast and thorough analysis of the situation in order to solve your problem so you can resume production as quickly as possible.

Support and maintenance contracts

Preventive maintenance leads to reduction of sudden problems or breakdowns of your IPS. A sudden stop of your IPS system means a delay or stop of your printing production and that is the last thing you want. In order to help you in preventing this situation we have 2 types of service contracts:

RSC = Remote Support Contract (no visits of our service engineer included) and the SMC = Support and Maintenance Contract (visits of our service engineer included).



These contracts also include unlimited telephone support, priority service, a free TMS license update and a fixed discount on all our service products (spare parts and services).

In case you operate an IPS2000, IPS1200 or Saturn dispensing system, these contracts are extremely interesting: next to the fact that we help you keep your IPS running as smooth as possible, it also brings you a more than interesting discount in case of a software upgrade (TMS) or revision.

Should you be equipped with our later IPS systems (alpha, delta, lambda or epsilon), subscribing to a service contract means trouble-free running of your IPS during its lifetime with the highest possible efficiency.



Optimising paste production at your plant with TMS

One of the main elements in our range of dispensing solutions is the Textile Management Software (TMS). This powerful package allows the optimisation of the printing paste production at your plant.

TMS runs on the Windows XP platform (with a MSDE/SQL database) and has a simple, intuitive user interface. With the TMS you can carry out recipe preparation, where the system automatically calculates the required quantities for any order. The TMS also enables order management, detailed report generation and the setting of user access levels for security reasons.

Virtual elimination of paste wastage

The Return Paste Module, part of the TMS, reduces waste of printing paste to an absolute minimum by tracking buckets with return paste. When a new order is entered, the module automatically checks for stored return paste, calculates how much can be reused, then informs the operator.

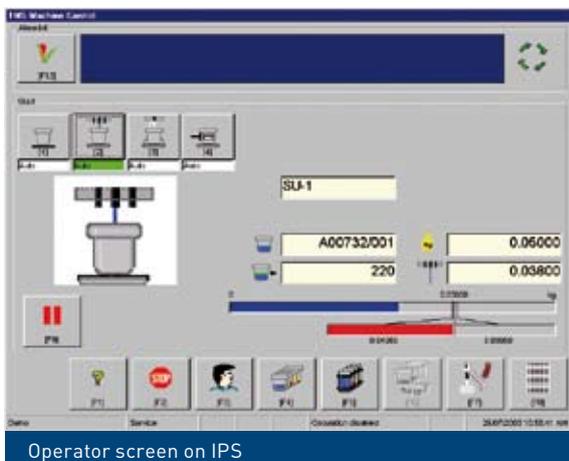
The Textile Management Software is supplied in two versions. TMS Lite contains all the required functionality for printing paste production on recipe level, while the TMS Full version offers the full range of features mentioned above for printing paste pro-



duction on order level. Both versions incorporate the Return Paste Module. Software upgrades and retrofits are available for customers with a Saturn, IPS1200 or IPS2000 (SBM control), to bring your equipment right up-to-date.

TMS omikron

Our TMS software package connected to a weighing scale can be the first step to automate your paste preparation. With TMS omikron you have a computer-guided manual dispensing system with all the advantages of the TMS software package and calculations based on real dispensed weights.





IPS epsilon

A versatile, high-capacity dispensing system ideal for use with small quantities or samples. Can operate standalone or in combination with a production system. Accommodates up to 64 valves, and is available with manual bucket handling or automatic bucket handling/mixing, with or without a separate cascade dispensing unit for thickening. The IPS epsilon is suitable for using typical 1 kg, 5 kg and 15 kg buckets that are specified by GSE for perfect bucket handling.

The IPS epsilon is available in three different versions: with manual bucket handling and mixing; automatic bucket handling and mixing; and a high-performance configuration. The entire system is specially designed for dispensing small quantities, with all valves, pumps and mixers, as well as the dispensing algorithm, geared towards producing accurate samples. Options such as bucket supply units and an automatic labelling unit increase the level of automation still further.



Fixed tanks



Mixer

- For pure dyes and/or mother colours (max 30 dPas)
- Suitable for 1 – 4 dyestuff groups
- High-performance version available





IPS delta

The IPS delta offers a modular, and refreshingly affordable approach to dispensing and managing your liquid dyestuff.

From a standard specification, which gives access to precise automatic dispensing ("execution B"), the IPS delta offers a host of extra functionalities, so you can upgrade the system as your business requires. The system accommodates any number of supplier barrels or 150 litre fixed tanks up to a maximum of 32. For recipes of four components, IPS delta systems have a typical performance of 15 buckets per hour with a 0.1 g absolute dispensing accuracy. With an extra (cascade) dispense head, you can double your dispense output to 30 buckets per hour). "Execution E" includes an automatic mixer, while your mixing capacity can be doubled with a second mixer.

High performance

Built on GSE's proven dispensing technology, IPS delta gives you ultimate reliability, speed and accuracy in a compact design. The system is powered by



Cleaning unit



Dispensing valves

TMS textile management software and is equipped with a 150 kg weighing scale (read out = 0.1 g) and a manual bucket transport system.

The valves are made of stainless steel with PTFE seals and are mounted on a fixed plate above the weighing scale. All valves are actuated by air and





Dispensing valve

cleaned automatically after each dispensing operation. Circulation of the dyestuff is through the valve. The circulation time and frequency can be adjusted in the software.

Standard features include ½" air operated double diaphragm pumps with an integrated pulsation damper. The pumps are mounted on a modular pump rack, which makes it easy to fit the system in the available space.

Easy to clean and maintain

The IPS delta is easy to clean, helping reduce downtimes and minimise the chance of disrupted dyestuff flow. Handy features include a new combined wet and dry cleaning unit and a stainless steel dispense area. With a minimum amount of moving parts and easy access to key components, maintaining the system could not be simpler.



Easy access to key components

- High performance
- Simple operation and handling
- Easy to clean and maintain
- Modular design, easy to extend



IPS lambda

The IPS lambda is extendable up to 64 dispensing valves and can handle up to 4 dyestuff groups. This allows the system to be used in even the largest applications.

The valves are made of stainless steel with PTFE seals and divided in 4 groups of 16 valves, automatically positioned by a XY positioning device above the weighing scale. All valves are separately actuated by air and cleaned automatically after each dispensing. Circulation of the dyestuff is through the valve and the circulation time and frequency can be adjusted in the software.

The system is equipped with a 150 kg weighing scale (read out = 0.1 g). It can dispense from supplier barrels or from a 150 litre fixed tanks using ½" air operated double diaphragm pumps with integrated pulsation dampers. The pumps are mounted on a modular pump rack.

The IPS lambda is operated by a touch screen. Orders are prepared in the office on the office-PC with TMS software that is connected to the IPS. The TMS software is included. The TMS can be extended with the Viscosity Control Module. We recommend the optional Return Paste Station when a lot of return paste buckets have to be handled.



Dispensing valves

The system can be delivered in 2 executions: automatic bucket transport and mixing and the high performance execution including cascade thickening dispensing unit and second automatic mixer.

- Suitable for 3 or 4 dyestuff group(s)
- Increases your printing paste quality
- Easily extendable and high performance version available
- High reliability and low maintenance





Options

Increase your capabilities

In addition to the bucket handling/mixing units and other accessories already mentioned, GSE offers many more options for increasing the capabilities of your dispensing system. From sample units, filters and barcode readers to automatic labelling units, you can put together exactly the system that best matches your needs.

Other options

- Filter units
- Barcode units
- Fixed storage tanks of 150 litre
- Swing arm sample unit
- Second and/or third supply conveyor for empty buckets
- Return Paste Station
- Automatic labelling unit

System specifications

IPS delta, lambda	
max viscosity colour	30 dPas
max viscosity thickening	150 dPas
max dispense quantity	120 kg
absolute accuracy production	0,1 g
absolute accuracy sampling	0,035 g
bucket diameter minimum	300 mm
bucket height	500 - 800 mm

IPS epsilon	
max viscosity colour	30 dPas
max viscosity thickening	150 dPas
max dispense quantity	15 kg
absolute accuracy	0,025 g
bucket capacity	1 & 5 & 15 ltr



Sample unit IPS delta



Automatic label unit



Pump filter fixed tank

TPS gives perfect batch-to-batch reproducibility

GSE Thickening Preparation System (TPS) gives you extremely smooth, consistent printing paste thickenings – time after time after time. These systems are sturdy and reliable, require virtually no maintenance and ensure optimum dissolving during mixing. They also interface easily with other production equipment. You can use them for thickening preparation and storage, as well as preparation of printing paste and/or mother colours.

Preparation unit

All types of thickening powders, such as alginates, guar and starches can be mixed in the TPS preparation tanks. The preparation units are known for their heavy duty construction and durability, and the use of high quality stainless steel leads to low maintenance and excellent reliability.

Each unit can be equipped with 1 – 4 preparation tanks, each with a capacity of 500 or 1000 litres. Efficient mixing is guaranteed by the powerful 2-speed emulsifier equipped with a specially shaped turbo type mixing head. This mixer unit ensures thorough dissolving of the thickening powders. The optional volumetric dispensing unit (VDU) dispenses all liquid components used in the thickening recipe, automatically into the preparation tank. Once mixing is completed, the thickening is pumped from the preparation tank through the distribution manifold into the storage tanks. An inline filter unit ensures that the thickening is clean and lump free.



Turbo type mixing head

Storage tanks

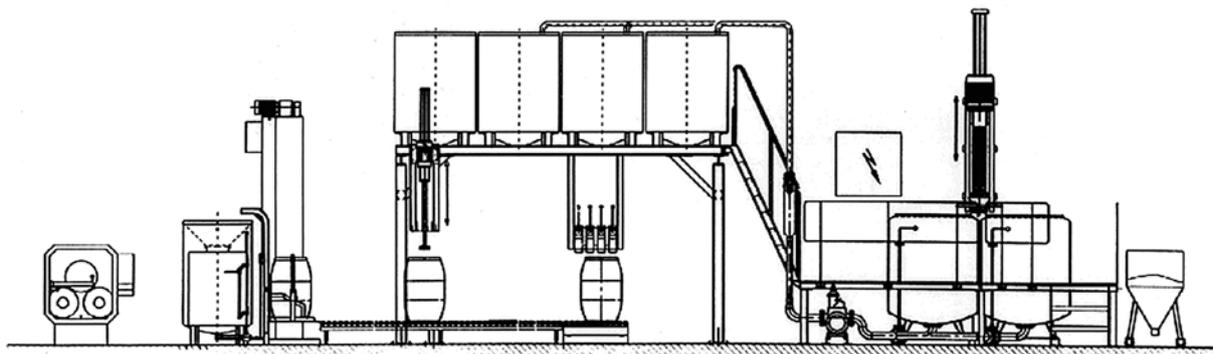
GSE can provide thickening storage tanks with capacities of 1000, 1500 or 2000 litres with or without scaffolding and staircase.



Optional level indicators storage tanks

Paste preparation

From the storage tanks the thickening can be pumped automatically to the IPS dispensing system, or it can be removed from the tank using a manual operated dispensing valve. This process, known as





paste preparation, is for manual printing paste production or preparation of mother colours used on the IPS.

The process is as follows: the drum is placed on the conveyor underneath the manual dispensing valves. Thickening is removed from the storage tank with the manual dispensing valve and the dyestuff is added. The drum is transported towards the manual mixer. After mixing the drum is transported to the drum-lifting device. This unit is used to tilt the drum, so the paste pours into the vacuum strainer. After filtering the paste it can be used for production.

GSE offers two configurations for paste preparation: for 120 litre drums or for 220 litre drums.

- Easy to operate
- Reliable and durable
- Increases your thickening quality

Wall mixer

The wall mixer is electrically driven (dual speed) and operated manually. A small frame is included that has to be attached to a wall or sturdy structure. The mixer is raised and lowered manually with help of a pneumatic cylinder. The shaft and mixing element are made of stainless steel. GSE can provide a range of wall mixers for quantities from 15 to 250 litres.

Bucket washer

The GSE bucket washer is ideal for cleaning the inside and outside of open top drums and buckets. It is equipped with 3 rotating brushes, 1 non-rotating brush for cleaning the bottom side of the drums and buckets, a stainless steel washing cabin and adjustable timers. An optional water saving system enables a reduction in water consumption of more than 50%.

For the best results we can deliver a brush set for two bucket ranges:

- Min diameter = 290 mm, max diameter 470 mm
- Min diameter = 390 mm, max diameter 650 mm

Max height of the buckets is 900 mm



Thickening storage and manual dispensing



Thickening storage and manual mixing



Single bucket washer

GSE Dispensing

GSE Dispensing is the world leader of gravimetric dispensing solutions for the graphics, textile and coating markets. With more than 35 years experience in the industry, the company has an installed base of 1400 systems worldwide.

The company is based in the Netherlands, with its subsidiary GSE Dispensing Inc. in Charlotte (NC), U.S.A.

GSE Dispensing has a team of highly trained technical staff, backed up by a global network of service representatives and distribution agencies on six continents.

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