

CIVIL ENGINEERING WORKS PLANT
ENVIRONMENT RELATED EQUIPMENTS DESIGN
PRODUCTION & DISTRIBUTION

Shield tunneling





Sagami Servo Co., Ltd has been involving in tail grouting, slurry materials grouting systems, foam injection system, surplus soil solidification facility, grouting pump & silo facility design, production & distribution mainly as civil engineering shield tunneling work facilities since its establishment on 1987. We not only propose the equipment facility, but also base on structuring its related general control system in regard to all kinds of requirements from our clients to propose the optimal solutions in various site environments. We are aiming toward building long-term trust relationship with our clients & expanding integrity business operations.

Company Name

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 Representative: Ishii Takao
 Establishment: 18th Nov, 1987
 Employees No: 10 persons (as on Jan 2012)

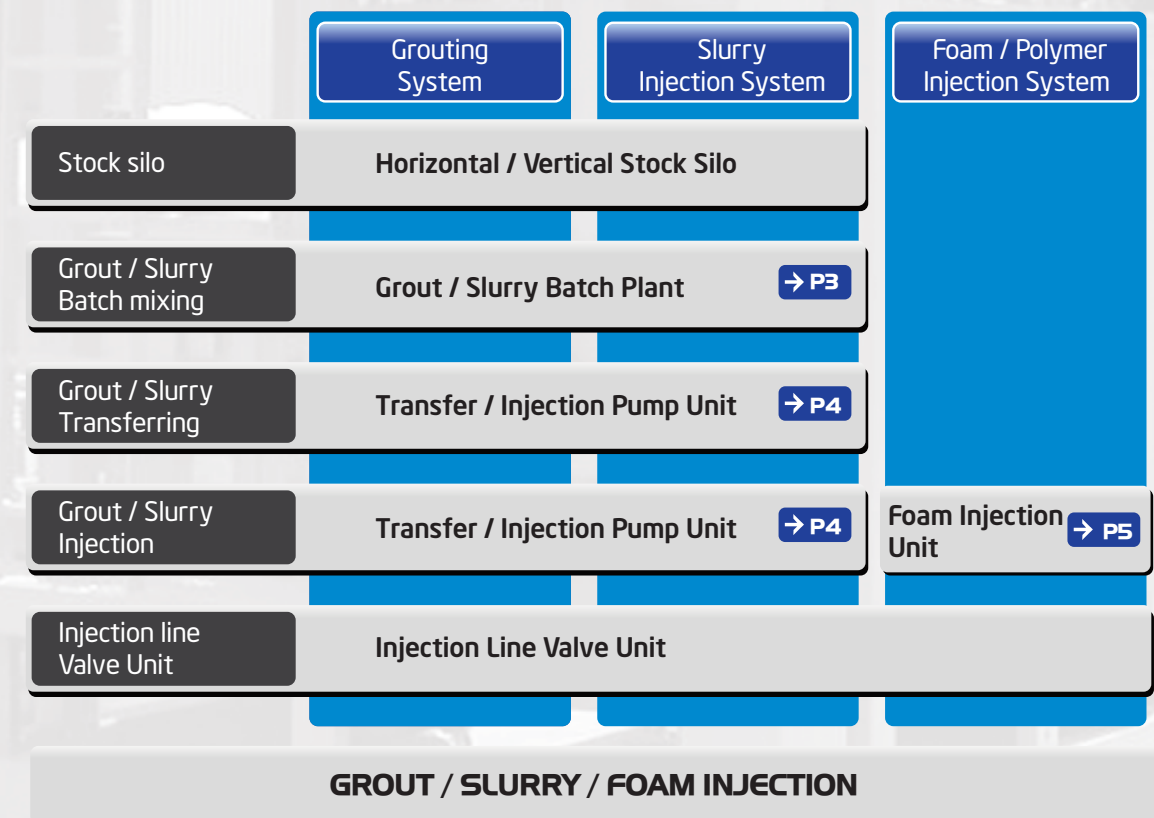
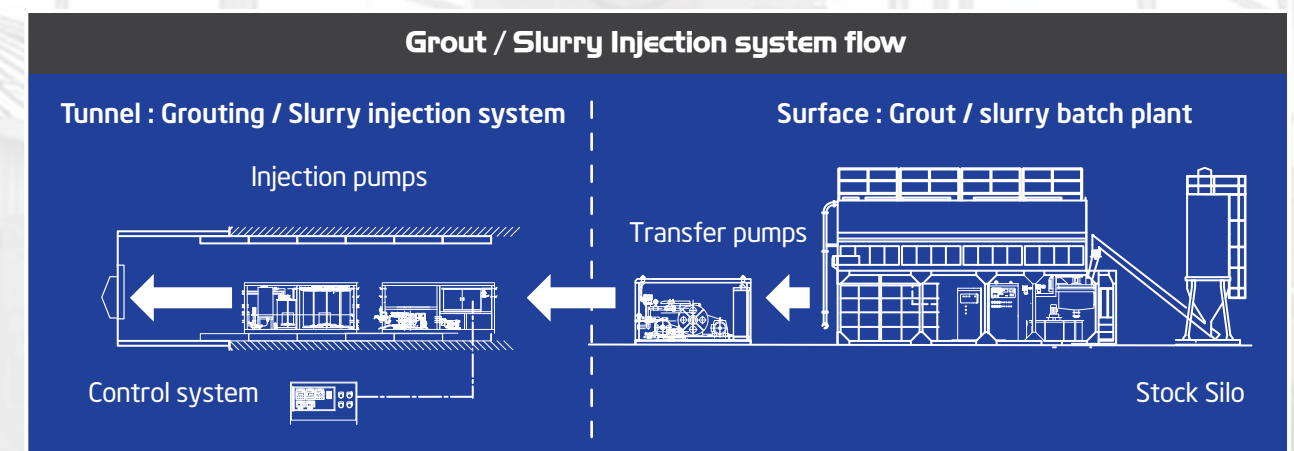
Business Contents

- Civil engineering works plant & environment related equipments design, production & distribution
- Shield tunneling work facility
- Grouting & Slurry injection systems
- Foam injection system
- Surplus soil solidification facility
- Grouting pump individual distribution
- Silo facility
- Environment related equipment facility
- Chimney decontaminant (cleaning)
- Other related equipments, parts distribution

Grouting, Mud slurry Grouting & Foam Injection Processes in Shield Work (Grouting / Injection Process)

The grouting, mud slurry grouting & foam injection systems in shield work mainly consist of the facilities below, by combining these facilities freely, we cleared various construction conditions in the sites of large diameter tunnel, multi-system injection & simultaneous injection etc.

Our company not only consistently supplying the facilities from materials stocking to each material injection management, but also proposing these facilities related general & flexible control system to optimize the injection related construction & management on site.



Optimal control system is proposed under various environment construction

Grout / Slurry Batch Plant

RS-50T



Its 3m³ grout / slurry batch per time is suitable for large capacity grouting, slurry batch mixing. As the water tank & chemical are built in, space can be saved & tank arrangement is unnecessary.

RS-20T



With a horizontal silo, it can be installed at a place where space & height are restricted. As all of the necessary material tanks for grouting, slurry materials are mounted, grout / slurry batch is available after installation.

RS-7B



As it is a space saving type, it can be installed at various locations.

RS Compact Batch Plant



With a horizontal silo, it can be installed at a place where space & height are restricted. As all of the necessary material tanks for grouting, slurry materials are mounted, grout / slurry batch is available after installation.

Batch Plant Type	Mixing Capacity	Tank Stock	Material Tank (Build in)
RS-50T	3m ³ / 792gal	Up to 20m ³ / 5283 gal	Water Tank, Chemical Tank
RS-20T with horizontal silo	1m ³ / 264gal	1.7 to 2m ³ 449 to 528 gal	Powder Silo x 2, Water Tank Chemical Tank, Accelerator Tank
RS-7B	1m ³ / 264gal	1.7 to 2m ³ 449 to 528 gal	—
RS Compact BatchPlant	0.3m ³ / 79gal	0.6m ³ / 158gal	Powder Hopper x 1 Water Tank, Chemical Tank

Pressure Feed & Injection Pump Facility (Pump Equipment)

Pressure feed & injection pump T series has a simple structure & easy maintenance. It suitable for the pressure feed of grouting & mud slurry material from ground to pit & injection from pit. On top of that, it is a multi-purpose pump which can be used for pit drainage etc & fluid long distance transferring etc.

Injection Pump



T-85



T-65



T-32



Pump Type	Pumping capacity per minute (At no pressure)	Motor Output kw	Discharge Pressure bar / psi	Suction Pressure bar / psi	Weight kg
T - 85	240L / 63gal	15	15 / 217	-1/-14.5	950
T - 65	140L / 36gal	11	15 / 217	-1/-14.5	650
T - 50	50L / 13gal	5.5	15 / 217	-1/-14.5	550
T - 32	20L / 5.2gal	2.2	15 / 217	-1/-14.5	240
T - 25	10L / 2.6gal	0.75	15 / 217	-1/-14.5	180

Foam Injection Facility

Due to the raising of environment awareness, foam injection in shield work has attracted much attention. By selecting between pump foam injection & compressor & air managing equipment combined flow control injection in respond to the condition, our foam injection system meets the requirements of deep digging & multi-system injection etc.

P (Foam Pumping) Type Injection System



- Injection pressure : Up to 15 bar
(Up to pumping capacity)
- Component :**
- Foam Injection Pump
 - Foam Liquid Injection Pump
 - Foam Agent Pump
 - Pump Starter Panel
 - Stock Tank
 - Stock Level Control
 - Foaming pipe
 - Injection Control Panel

F (Foam Control) Type Injection System

- Injection pressure : Up to 9 bar
(Up to compressor pressure capacity)
- Component :**
- Foam Liquid Injection Pump
 - Foam Agent Pump
 - Pump Starter Panel
 - Stock Tank
 - Stock Level Control
 - Foaming pipe
 - Injection Control Panel
 - Air Compressor (Option)



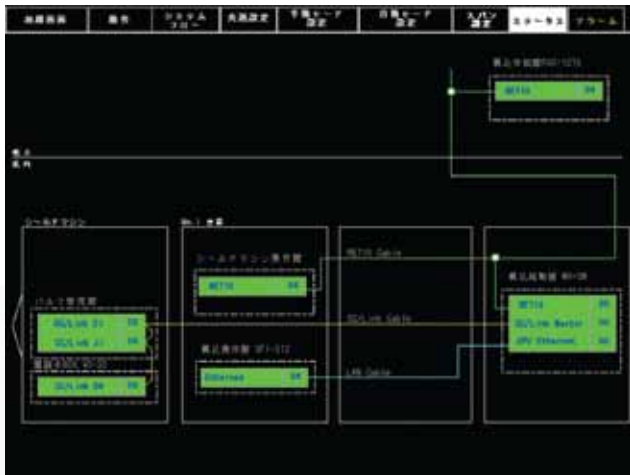
Control System

Our company proposes a grouting & mud slurry grouting management related general control system.

- Silo start-up panel
- Slurry batch plant managing panel
- Pressure feed pump start-up panel
- Injection pump start-up panel
- Injection line valve managing panel
- Injection control panel
- Monitoring system
- Signals communication with ground & pit other contractors' facilities



Grouting control



Communication monitoring

Projects

North America

- Northeast Interceptor Sewer - Los Angeles, CA
- Beacon Hill Tunnel and Station Light Rail - Seattle, WA
- North Shore Connector - Pittsburgh, PA
- Queens Bored Tunnels East Side Access - New York, NY
- University Link Light Rail - Seattle, WA
- Alaskan Way Viaduct SR99 - Seattle, WA

Oceania

- Gold Coast Desalination Alliance - Gold Coast, QLD, Australia
- Blue Water Desalination - Sydney, NSW, Australia
- Northern Sewerage - Melbourne, VIC, Australia
- Melbourne Main Sewer Replacement - Melbourne, VIC, Australia
- Melbourne Desalination Plant Wonthaggi - Melbourne, VIC, Australia
- Sydney Cable Tunnel - Sydney, NSW, Australia

Europe

- Dockland Light Railway - London, UK
- Channel Tunnel Rail Link - London, UK
- Dublin Port Tunnel - Dublin, Ireland
- Sofia Metro - Sofia, Bulgaria
- Bosphorus Marmaray - Istanbul, Turkey

Asia

- Shanghai Roal Tunnel - Shanghai, China
- Bangkok MRT Metro - Bangkok, Thailand
- Singapore MRT Metro - Singapore, Singapore
- Beijing Metro - Beijing, China
- Taiwan Rapid Transit - Taiwan
- Delhi Metro - Delhi, India
- Bangalore Metro - Bangalore, India



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