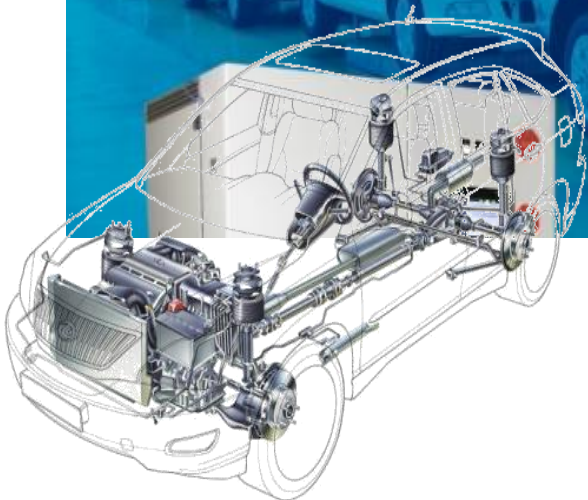


Fluid Filling Machines for Automotive

专注于汽车总装线加注设备



Sail Automation



About Us

Sai I Offers specialist technology in Automotive final assembly line, focusing on Fluid Filling Machine. We are trying to be a market leader in Automotive industry.

Full range of Fluid Filling solution 流体加注全域解决方案

Brake	AC/HFO	Coolant	P Steering
制动液	冷媒	防冻液	助力液
Washer	Urea	Transmission oli	Air leak
洗窗液	尿素	变速箱油	泄露

Solutions to achieve your cycle-time goals 节拍目标解决方案

Sail research and development and engineering team will be based on the specific needs of customers for OEM or system integration, professional research and development and customized to meet customer requirements for beat and speed. The team's engineers are able to configure the customer's requirements in real time to meet the customer's requirements for production, quality, and goals.

Filling Process 加注工艺

@	<i>Vacuum filling</i>	真空加注
@	<i>Volume filling</i>	定量加注
@	<i>Level filliing</i>	液位加注
@	<i>Pressure filling</i>	压力加注
@	<i>Leak test</i>	泄露监测
@	<i>Fluid mixing</i>	液体混合
@	<i>Degassing</i>	脱气工艺

Full-featured and Stable;

Fully consider a variety of operating conditions, improve the corresponding functions, enhance the stability of equipment.

@ Equipment hydraulic, pneumatic, electrical and other components, are well-known brands, from the source to ensure product quality

@ Pre-design, fully combined with foreign experience and past projects, increase and improve a variety of detection functions, strengthen the stability of equipment

Distribution and modular design

Simple, modular and distributed design makes the device need less space.

@ Equipment hydraulic, pneumatic, electrical and other modular layout, so that the construction of equipment principles simple and clear

@ The device function is distributed and designed to make the device space compact.

Easy to maintain

Engineering and technical personnel in the part selection, space design, parts connection and other content to do an in-depth summary and exploration, so that make maintenance more convenient for personnel to operate.

@ Containers, reservoirs, lines and other key components used in the equipment are hygienic grade stainless steel materials, ensuring that the equipment is easy to clean and clean while having long durability.

@ The mechanical parts and devices of the equipment are connected by fittings, equipped with special seals, which make the components easy to remove and improve the operation of maintenance.

Fill Adaptor design based on ergonomics

The filling adaptor design is based on ergonomics and has light weight and easy to operate.

@ Nice appearance, oxidation treatment

@ Carefully selected materials, aviation aluminum alloy, ultra-hard stainless steel

@ Stable movement, long service life

@ Easy to service

Brake Evacuate and Fill



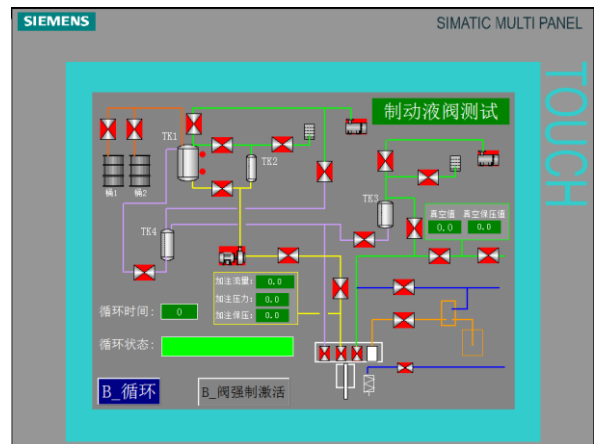
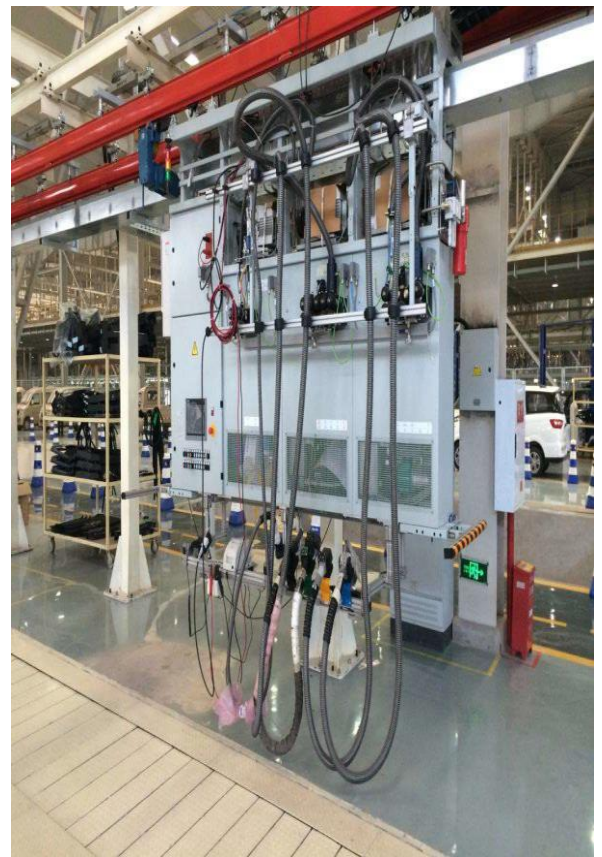
Sail provides the tailor-made brake filling equipment designed to store and dehydrate brake fluid, evacuate brake system together with leak test, modulate ABS valves, pressure fill the lines and tank, level adjust the reservoir, and scavenge excess fluid to eliminate tool drip. The filling machine are available with or without Data Acquisition soft package based on PC control system.

The Brake Fill System is a full featured, PLC controlled system capable of performing high speed, ABS test and filling on automobile assembly lines. The systems can perform a nitrogen pressure test, evacuation, vacuum test, pressure fill and level adjust, delivering a high quality, dependable brake fill. ABS systems are modulated and fill volumes are flow meter verified to ensure correct processing.

Product Detail

STANDARD FEATURES:

- Simens PLC or Allen Bradley PLC control
- PanelView Touchscreen Operator Interface
- Automated process set-up, initiation, cycle completion, and return to standby
- Stainless steel piping with Burkert or ASCO process control valve
- Dedicated fluid dehydration vacuum pump (Leybold D16B-DOT or SV40-DOT)
- Pressure fill with volume verification (Gear volume flow meter)
- ABS modulation during evacuation and fill
- Dedicated brake system evacuation pump (Leybold D16B)
- Dripless, external and internal sealing, auto clamp filling adaptor
- Evacuation, vacuum test, pressure fill, and level adjust fill sequence
- Dedicated scavenge pumps with traps (Ventri pump)
- Friendly interface of System diagnose, process manual control, meter or sensor calibration, live process flow chart.
- Installation, Operation, Maintenance, and Troubleshooting Manual

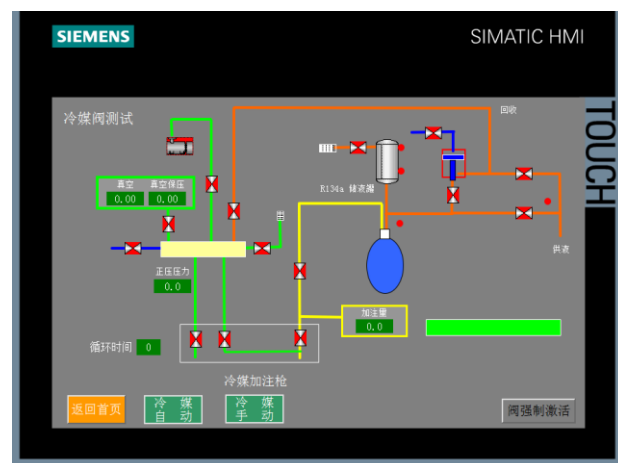


A/C Fill Systems feature a proven design that delivers an accurate, repeatable, and dependable fill process. This fill process can include a nitrogen pressure test, a quality vacuum test, and a high speed refrigerant fill. This modular fill process can be easily configured as overhead track mounted with VFD motors, or even mobile systems. Our standard A/C Fill System is equipped with the Simens PLC and a PanelView operator interface that displays process cycle, operating status, configuration, calibration, process control chart under manual model and troubleshooting. Other PLC manufacturers and touchscreens are also available.

Product Detail

STANDARD FEATURES:

- Simens PLC or Allen Bradley PLC control
- PanelView Touchscreen Operator Interface
- Automated process set-up, initiation, cycle completion, and return to standby
- Stainless steel piping with Burkert or ASCO process control valve
- Pressure fill with volume verification (Mass flow meter)
- Fill accurate +/-2g
- Dedicated system evacuation pump (Leybold D16B or 25B , 30C)
- Auto clamp filling adaptor, or Staubli quick coupling for high and low side
- Evacuation, vacuum test, pressure fill sequence
- Friendly interface of System diagnose, process manual control, meter or sensor calibration, live process flow chart.
- Installation, Operation, Maintenance, and Troubleshooting Manual



Coolant Evacuate and Fill



The Coolant Fill System is a full featured, PLC controlled system capable of;

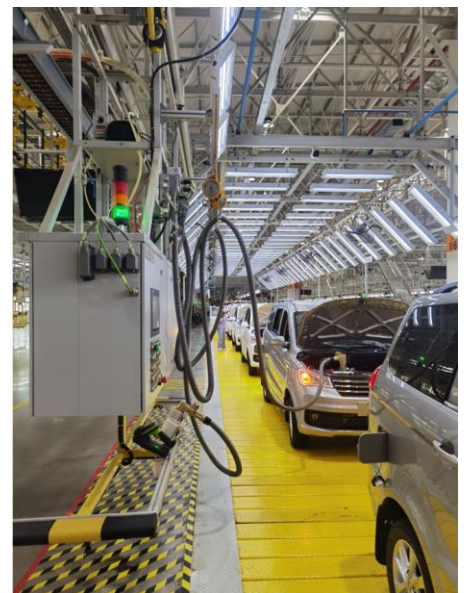
- Mixing and storing multiple coolant supplies
- Leak testing , evacuation, and filling a coolant system
- Filling an overfill bottle
- Level adjusting to the proper final level

The evacuation and fill process ensures a consistent quality check with evacuation, an accurate and complete system fill. These systems are available with mix or premix supply, pressure or volume fill, radiator and overfill bottle fill, and equipped with high capacity vacuum pumps, individual scavenge lines, and custom, dripless tooling. System control and process configuration are handled by a PLC linked to a Touchscreen Operator Interface.

Product Detail

STANDARD FEATURES:

- Simens PLC or Allen Bradley PLC control
- Panelview Touchscreen Operator Interface
- Automated process set-up, initiation, cycle completion, and return to standby
- Stainless steel piping with Burkert or ASCO process control valve
- Dedicated vacuum pump, used for coolant (Leybold SV40B)
- Pressure fill with volume verification (IFM Electromagnetic flow meter)
- Dedicated scavenge pumps with traps (Ventri pump)
- Dripless, external and internal sealing, auto clamp filling adaptor
- Evacuation, vacuum test, pressure fill, and level adjust fill sequence
- Friendly interface of System diagnose, process manual control, meter or sensor calibration, live process flow chart.
- Installation, Operation, Maintenance, and Troubleshooting Manual



Clutch Evacuate and Fill

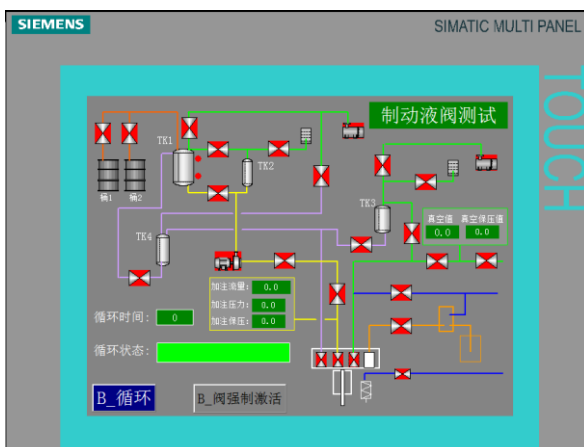


Sai He provides the Clutch filling equipment designed to store and dehydrate brake fluid, evacuate clutch system together with leak test, pressure fill the lines and tank, level adjust the reservoir, and scavenge excess fluid to eliminate tool drip. The filling machine are available with or without Data Acquisition soft package based on PC control system. The Fill System is a full featured, PLC controlled system capable of performing high speed filling on automobile assembly lines. The systems can perform evacuation, vacuum test, pressure fill and level adjust, delivering a high quality, dependable brake fill.

Product Detail

STANDARD FEATURES:

- Simens PLC or Allen Bradley PLC control
- Panelview Touchscreen Operator Interface
- Automated process set-up, initiation, cycle completion, and return to standby
- Stainless steel piping with Burkert or ASCO process control valve
- Dedicated fluid dehydration vacuum pump (Leybold D16B-DOT or SV40-DOT)
- Pressure fill with volume verification (Gear volume flow meter)
- ABS modulation during evacuation and fill
- Dedicated brake system evacuation pump (Leybold D16B)
- Dripless, external and internal sealing, auto clamp filling adaptor
- Evacuation, vacuum test, pressure fill, and level adjust fill sequence
- Dedicated scavenge pumps with traps (Vetri pump)
- Friendly interface of System diagnose, process manual control, meter or sensor calibration, live process flow chart.
- Installation, Operation, Maintenance, and Troubleshooting Manual



The Power Steering System performs a quality check and fill process on closed loop oil filled systems. This process usually includes:

- System Evacuation and Vacuum Testing
- Pressure Fill or Volume Fill
- Adjust to Required Level in Tank

These systems are available with fluid prep and supply, pressure or volume fill, and equipped with high capacity vacuum pumps and auto purging traps, individual scavenge lines, and custom, dripless tooling. System control and process configuration are handled by a PLC linked to a Touchscreen Operator Interface.

Product Detail

STANDARD FEATURES:

- Simens PLC or Allen Bradley PLC control
- Panelview Touchscreen Operator Interface
- Automated process set-up, initiation, cycle completion, and return to standby
- Stainless steel piping with Burkert or ASCO process control valve
- Dedicated vacuum pump (Leybold SV40B)
- Pressure fill with volume verification (Gear volume flow meter)
- Dripless, external and internal sealing, auto clamp filling adaptor
- Evacuation, vacuum test, pressure fill, and level adjust fill sequence
- Friendly interface of System diagnose, process manual control, meter or sensor calibration, live process flow chart.
- Installation, Operation, Maintenance, and Troubleshooting Manual



Fixed Amount Filling

- Engine , Axle, Gear Box Oil Filling
- Wind Washer Filling Machine
- Urea Filling Machine

The Transmission and Oil Fill system combines the filling processes of similar fluids that also share proximate fill locations in the engine compartment. This fill process includes:

- Fluid filtering and heating
- Volume fill
- Level sense or scavenge to level
- Purge to eliminate drips



These systems can address mixed assembly lines that fill manual, automatic and CVT transmissions and require individual fluid supply, prep, and fill through individual fill tools. These systems can also accommodate filling engines and /or transmissions that are partially filled due to shipping requirements or testing residuals.

System control and process configuration are handled by a PLC linked to a Touchscreen Operator Interface.

Wind washer filling and urea filling are simple just based certain fixed amount volume.

Product Detail

- Automatic process set-up, initiation, cycle completion, and return to standby
- Simens PLC or Allen Bradley PLC control
- PanelView Touchscreen Operator Interface
- Custom designed dripless tooling
- Start/Stop/Reset pushbutton pendant at tool
- Level sense control for pre-filled engines or transmissions
- Volume fill
- Gear flow meter verifies fill amount
- Heated storage tanks
- Individual scavenge pumps vent fluid pressure, adjusts level, and eliminate tool dripping
- Single stage vacuum pumps with auto purging traps

CONFIGURATION OPTIONS:

- Stop station/ single station
- Mobile station / single station
- Base station with track mounted, vehicle towed tool console
- Base station with motorized, VFD, line synchronized, track mounted tool console
- Data acquisition with PC work station
- Test rig



• Stop station



• Mobile station



• Motorized station



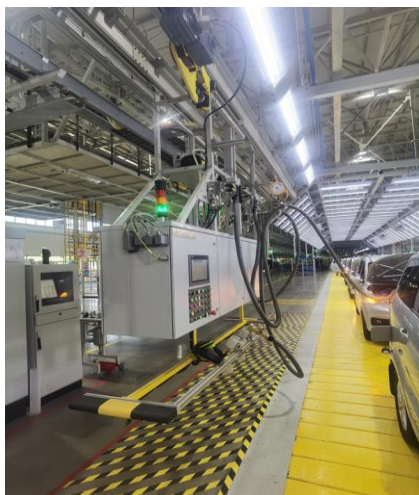
• Data acquisition



• Test rig

Multi Filling OPTIONS:

- Brake combined with A/C (1, 2,3,4 unit for high JPH)
- Brake combined with A/C and Coolant (1, 2,3,4 unit for high JPH)
- Brake combined with A/C , Coolant and Wind washer (1, 2,3,4 unit for high JPH)
- Coolant combined with Wind washer (1, 2,3 unit for high JPH)
- Coolant combined with Coolant (1, 2,3,unit for high JPH)



- Coolant combined with Wind washer (1, 2,3 unit for high JPH)



- Brake combined with A/C , Coolant and Wind washer (1, 2,3,4 unit for high JPH)



- Brake combined with A/C (1, 2,3,4 unit for high JPH)

Brake Evacuate and Fill:

Hydraulic and Pneumatic

Descriptions	Manuf.	Country
VACUUM PUMP	LEYBOLD	Germany
Degass Pump	LEYBOLD	Germany
FLUID PUMP-Gear pump	Ouruike	China
2/2 BALL VALVE 1/2" BSPP	FESTO	Germany
FILTER 1/2" BSPP	ASCO HYDRO	China
AIR UNIT	FESTO	Germany
GAGE 760-0mmHg / 1000-0mbar	WIKA	Germany
IFM SENSOR	IFM	Germany
TANK 1 (#1)		China
TANK3 (Degas Tank)		China
ADAPTOR		Import after fabrication
2/2 BALL VALVE 3/4 BSPP	FESTO	Germany
2 WAY VALVE – G1/2	BURKERT	Germany
HOLSTER SWITCH	IFM	Germany
GAGE 0-1000mbar 0-10bar	WIKA	Germany
VACUUM TRANSDUCER 0-250mbar	DRUCK/WIKA	USA/Germany
FLOWMETER	FLOWMEC/KATU	Germany
PRESSURE TRANSDUCER 0-25bar	WIKA	Germany
PRESSURE TRANSDUCER	MECON/MACROSENSOR	China
MUFFLER 3/4" NPT	SMC	JAPAN
3/2 SOLENOID VALVE 3/8"BSPT	SMC	JAPAN
2/2 SOLENOID VALVE G1/4" w/ COIL	SMC	JAPAN
AIR PRESSURE SWITCH Rc1/8	SMC	JAPAN
FITTINGS	EATON/PARKER/YONGHUA	USA/China
HOSE	PARKER/YONGHUA	USA/China

A/C Evacuate and Fill:

Hydraulic and Pneumatic

Descriptions	Manuf.	Country
VACUUM PUMP	LEYBOLD	Germany
2/2 BALL VALVE 1/2" BSPP	FESTO	Germany
FILTER	Denfoss	USA
AIR UNIT	FESTO/SMC	Germany/Japan
GAGE 760-0mmHg / 1000-0mbar	WIKA	Germany
IFM SENSOR	IFM	Germany
ADAPTOR		Import after fabrication
2/2 BALL VALVE 3/4 BSPP	FESTO	Germany
2 WAY VALVE – G1/2	BURKERT/ASCO	Germany/USA
HOLSTER SWITCH	IFM	Germany
GAGE 0-1000mbar 0-10bar	WIKA	Germany
VACUUM TRANSDUCER 0-250mbar	DRUCK/WIKA	USA/Germany
PRESSURE TRANSDUCER 0-25bar	WIKA	Germany
PRESSURE TRANSDUCER	MECON/MACROSENSOR	China
MUFFLER 3/4" NPT	SMC	JAPAN
3/2 SOLENOID VALVE 3/8"BSPT	SMC	JAPAN
2/2 SOLENOID VALVE G1/4" w/ COIL	SMC	JAPAN
AIR PRESSURE SWITCH Rc1/8	SMC	JAPAN
FITTINGS	EATON/PARKER/YONGHUA	USA/China
HOSE	PARKER/YONGHUA	USA/China
Stainless steel pipe	Hydraunic	China
Piping	SMC	JAPAN
Accumulator	Olear/Bcuuma	France/China
Filling pump	Haskel	USA
Flow meter	E+H	Germany

CFS Evacuate and Fill:

Hydraulic and Pneumatic

Descriptions	Manuf.	Country
VACUUM PUMP	LEYBOLD	Germany
2/2 BALL VALVE 1/2" BSPP	FESTO	Germany
FILTER 1/2" BSPP	ASCO HYDRO	China
AIR UNIT	FESTO/SMC	Germany/Japan
GAGE 760-0mmHg / 1000-0mbar	WIKA	Germany
IFM SENSOR	IFM	Germany
ADAPTOR		Import after fabrication
2/2 BALL VALVE 3/4 BSPP	FESTO	Germany
2 WAY VALVE – G1/2	BURKERT/ASCO	Germany/USA
HOLSTER SWITCH	IFM	Germany
GAGE 0-1000mbar 0-10bar	WIKA	Germany
VACUUM TRANSDUCER 0-250mbar	DRUCK/WIKA	USA/Germany
PRESSURE TRANSDUCER 0-25bar	WIKA	Germany
PRESSURE TRANSDUCER	MECON/MACROSENSOR	China
MUFFLER 3/4" NPT	SMC	JAPAN
3/2 SOLENOID VALVE 3/8"BSPT	SMC	JAPAN
2/2 SOLENOID VALVE G1/4" w/ COIL	SMC	JAPAN
AIR PRESSURE SWITCH Rc1/8	SMC	JAPAN
FITTINGS	EATON/PARKER/YONGHUA	USA/China
HOSE	PARKER/YONGHUA	USA/China
Stainless steel pipe	Hydraunic	China
Piping	SMC	JAPAN
Flow meter	IFM	Germany
Filling pump	Wilo	Germany

PAS Evacuate and Fill:

Hydraulic and Pneumatic

Descriptions	Manuf.	Country
VACUUM PUMP SV25	LEYBOLD	Germany
FLUID PUMP	KRACHT/NIPPON	Germany
2/2 BALL VALVE 1/2" NPT	FESTO	Germany
FILTER 1/2" SAE 过滤器	ASCO HYDRO	China
AIR UNIT 气源组件	FESTO	Germany
GAGE 760-0mmHg / 1000-0mbar	WIKA	Germany
IFM SENSOR	IFM	Germany
TANK 1 (#1)		China
TANK 3 (#3)		China
TANK 4 (#1)		China
ADAPTOR 加注枪		China
2/2 BALL VALVE 3/4" NPT	FESTO	Germany
2 WAY VALVE – G1/2"	BURKERT	USA/ Germany
HOLSTER SWITCH	IFM	Germany
GAGE 0-200psi	WIKA	Germany
VACUUM TRANSDUCER 0-250mbar 真空传感器	DRUCK/WIKA	USA/ Germany
FLOWMETER 流量计	KATU/FLOWMEC	Germany
PRESSURE TRANSDUCER 0-25bar	DRUCK/WIKA	USA/ Germany
GAGE 0-200psi	WIKA	Germany
MUFFLER 3/4" NPT	SMC	JAPAN
3/2 SOLENOID VALVE 3/8" NPT w/COIL	SMC	JAPAN
2/2 SOLENOID VALVE G1/4" w/ COIL	SMC	JAPAN
AIR PRESSURE SWITCH Rc1/8	SMC	JAPAN
FITTINGS	EATON/PARKER	USA

Evacuate and Fill Machine:

Electrical side

Descriptions	Manuf.	Country
ENCLOSURE	RITTAL/DongAN	Germany
AIR CONDITIONER	RITTAL/LEIBO	Germany
PLC CPU	SIEMENS/AB	Germany
PLC POWER SUPPLY	SIEMENS/AB	Germany
RELAY OUTPUT	SIEMENS/AB	Germany
POWER SUPPLY 24V DC	SIEMENS/AB	Germany
MMC CARD	SIEMENS/AB	Germany
COMMUNICATION CABLE	SIEMENS	Germany
HMI	SIEMENS/AB	Germany
HMI CABLE	SIEMENS/AB	Germany
PROGRAM CABLE	SIEMENS/AB	Germany
CONNECTOR 20PIN	SIEMENS/SCHNEIDER	Germany
CONNECTOR 40PIN	SIEMENS/SCHNEIDER	Germany
PARALLELS RAIL	SIEMENS/SCHNEIDER	Germany
MOTOR CIRCUIT BREAKER	SIEMENS/SCHNEIDER	Germany
CIRCUIT BREAKER	SIEMENS/SCHNEIDER	Germany
AUXILLARY FOR CIRCUIT BREAKER	SIEMENS/SCHNEIDER	Germany
CIRCUIT BREAKER	SIEMENS/SCHNEIDER	Germany
RELAY	SIEMENS/SCHNEIDER	Germany
CONTACTOR	SIEMENS/SCHNEIDER	Germany
CABLE	LAPP	Germany
E-STOP MUSHROOM PB	SIEMENS/SCHNEIDER	Germany
GREEN PUSHBUTTON WITH LIGHT	SIEMENS/SCHNEIDER	Germany
RED LIGHT	SIEMENS/SCHNEIDER	Germany
PUSHBUTTON	SIEMENS/SCHNEIDER	Germany