



Semitoool Platforms Capability

ABOUT US

Vision statement:

“ To be the Supplier of choice for upkeep and Capacity extensions for Semitool used Wet Clean and Plating tools.

”

Product Range

- Gold box controls
- Spin Motors
- Dynatronix Power Supplies
- Affinity chiller
- Computer repair/exchange
- Robots
- Linear tracks
- Sigma 2 Amplifiers and motors
- Lift rotates
- Rotors
- End effector assembly and blades
- Pumps
- Process bowls
- Used tool trading and turn key refurbishment

Semitoool Platforms

Raider Series – Plating / Etching / Cleaning



Other Platforms – SAT / SST / SRD / Quattro / Spectrum / Storm



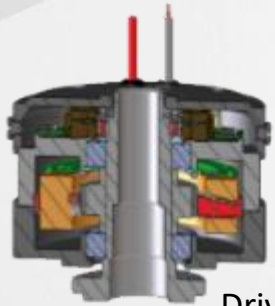
Semitool Platforms Turnkey Solutions

RAIDER

PTW Asia Pte. Ltd. • 6 Tagore Drive, #02-17 Tagore Building, Singapore 787623 • Phone +65 90261590 • torsten@ptwsingapore.com



Semitoool Raider Parts



Drive Head motor
Upgrade, better reliability at
the same price



Robot Track



DYNATRONIX
Power Supply



Robot (Delta Tau and Galil)
End Effector and paddle



900T0331-01
Tank box assy



900T0272-503
Chamber Control Block



429T2032
Chemical I/O



Lift Rotate Assembly



900T0234-501
Interconnect Assy



Gold boxes
(Module, Linear robot, WIP)

Raider Etch System Upgrades

LFC conversion to Metering pump System

Basic operation of closed loop flow controller – Infiniflow

- RS-232 comms used during setup
- Power supply 24vdc from host equipment
- Analog input set-point signal from host equipment



- Analog signal proportional to sensed flow rate sent to host equipment for flow indication
- Various status/alarm outputs
- 0-10vdc error signal (difference between reference and sensed flow signals)
- 24vdc ITV power supply



Air supply inlet For ITV

- Host equip delivers analog set-point signal
- LFU senses rate and controller generates error signal based on set-point and sensed rate difference
- Error signal sent to ITV which converts the error signal to pneumatic pressure to LVR
- LVR regulates flow in response to pneumatic error signal
- LFU senses chemical flow and provides this feedback directly to the controller. The unit will constantly compare sensed to set-point in order to maintain desired flow rate

Time of Flight Ultrasonics method constantly measuring the time delta between upstream and downstream signals = accurate flow rate measurement

LFU



Fluid supply

Sensed fluid flow

LVR

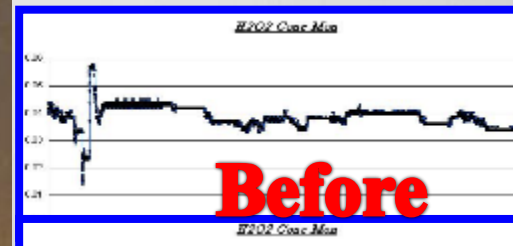
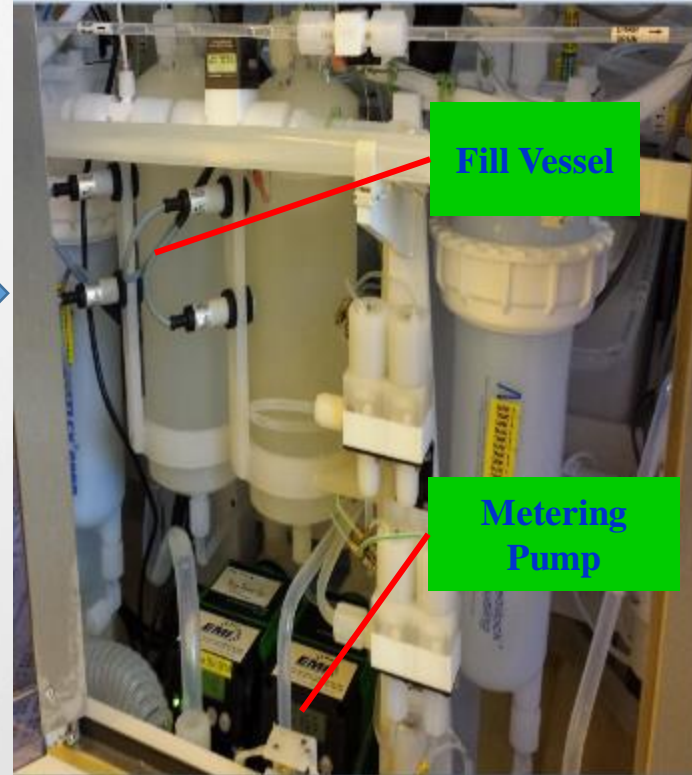


Actual controlled fluid flow outlet

Air supply for LVR pilot proportional to level of error signal

FLOW TRANSDUCER

DOMES VALVES

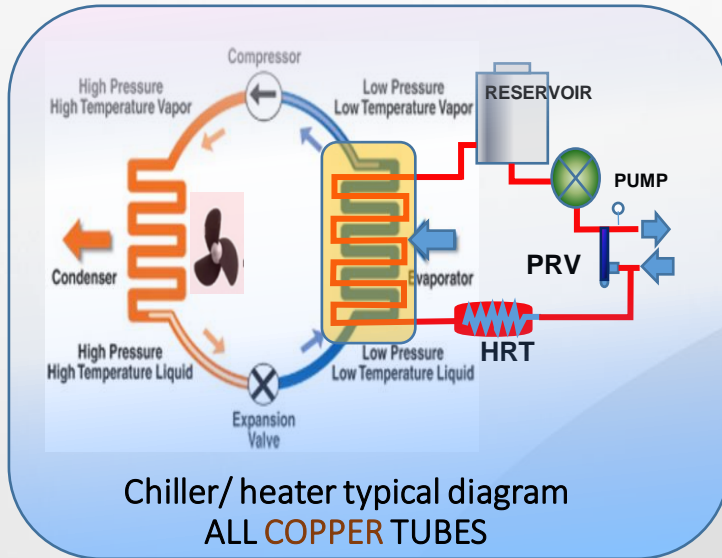


Reliable Chemical Mixing System



Raider Chiller Upgrades

AFFINITY CHILLER



OVERALL BENEFITS: ALL STAINLESS

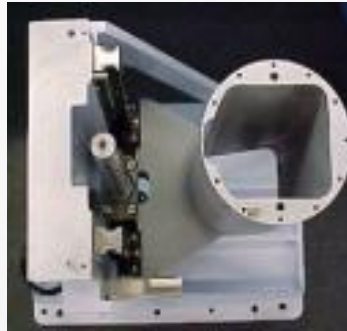
- FREE FROM CORROSION
- MAINTENANCE FREE
- POWER REDUCTION BY 60%
- UTILIZING EXISTING PLANT PROCESS COOLING
- NO COMPRESSOR AND REFRIGERANT
- ZERO WAFER SCRAP DUE TO MALFUNCTION

THERMAL INSULATION AND BUYOFF

Raider Repair and Refurb Capability

ROBOT ASSEMBLY COAXIAL XT

- ❖ PARTS REPLACEMENT
- ❖ STANDARD LEVEL TOLERANCES AND CLEARANCES
- ❖ HARMONIC DRIVES REPLACEMENT AND LUBRICATION
- ❖ ELECTRICAL HARNESSING
- ❖ CYCLE TEST



ROBOT ALIGNMENT JIG



Raider Repair and Refurb Capability

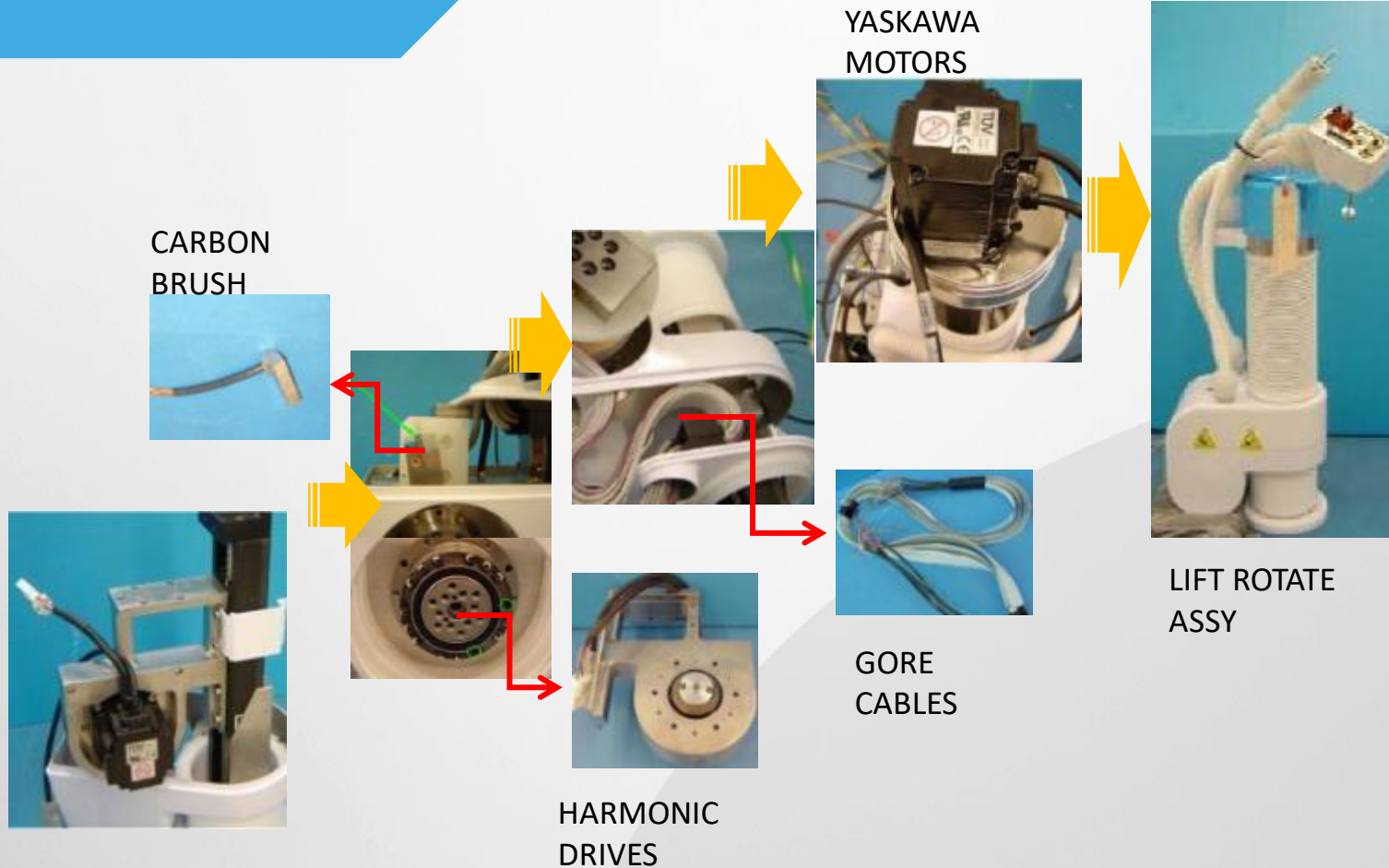
RAIDER CONTROLLERS AND GOLDBOXES

- PTW offers repairs of Controllers (aka „Gold Boxes“)
- OEM does not offer a repair for the controllers
- PTW is pioneer in repair service for Raider controller
- Controllers are repaired according to its standard specification and tested by running it on the tool
- Customer receives proof of function before Controller is returned
- PTW will take other board level repair and is capable of testing most parts on I/O level

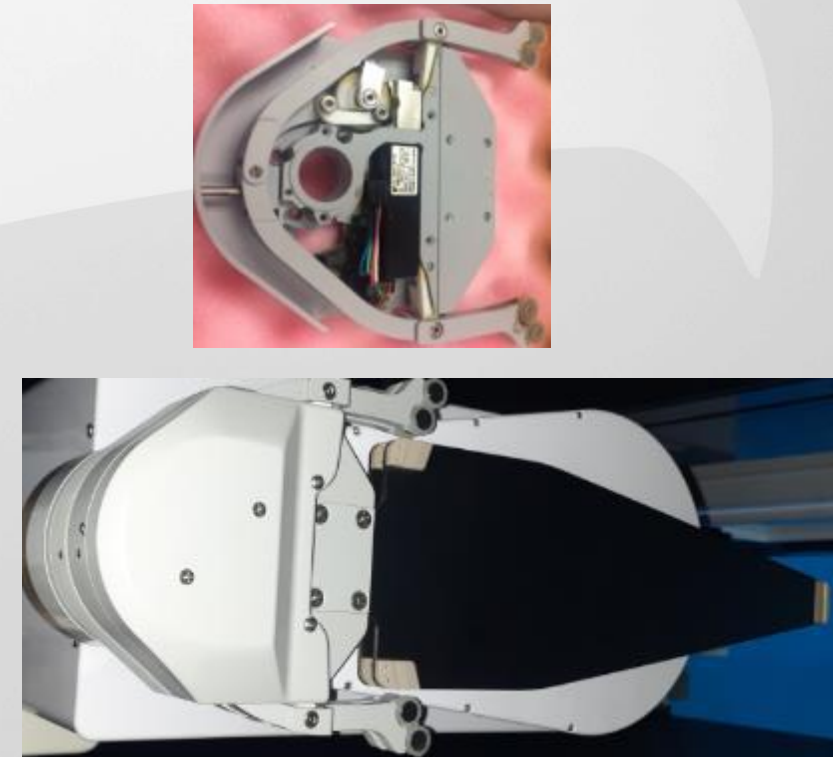


Raider Repair and Refurb Capability

LIFT ROTATE ASSEMBLY



END EFFECTORS and Paddles

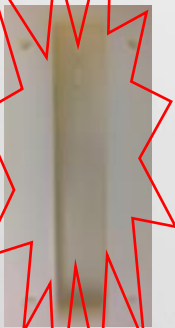


PTW Solutions

UPPER BOWL Leak Rectification



BALLUFF SENSOR LOCATION

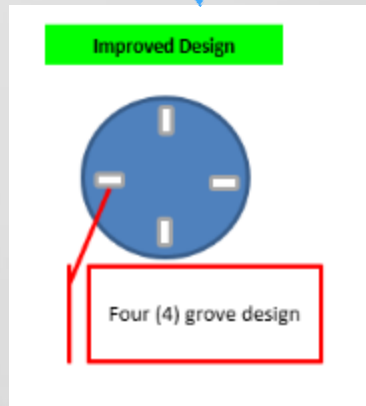


CRACK BOWL DUE TO HEAT EXPANSION

Re-design of SRD Finger



Better design at half the cost of brand-new by reusing metal parts from customer.



Motor Upgrade



220T0035-100



220T0047-100



220T0073-100

Variety of BRAND NEW motors available for Semitool

- Supplied as new
- Please check with us for availability!

DYNATRONIX Power Supply

DYNATRONIX
Approved
VENDOR

Sale, Repair, Calibrate and
Refurbishment and Exchange program

Parts to be checked/replaced during refurbishment:

- Qty 4 each 138-0352-25 and 138-0352- 26 Forward and Reverse transistor boards
- Qty 1 138-0377-01 motherboard. .
- Qty 1 138-0417-00 timing board (cam locks)
- Qty 4 each forward and reverse regulator
- Qty 1 range select board P/N 138-0354-09
- Replace fans. (2 per unit)
 - o Qty 1 072-0006-00
 - o Qty 1 072-0057-00
- Qty 1 138-0535-20
- Qty 1 138-0515-00
- Other Misc Parts

PTW has the **capability** to access
config files and validate
communication when installed on
our Raider tool.
(Dynatronix DO NOT have this
capability)

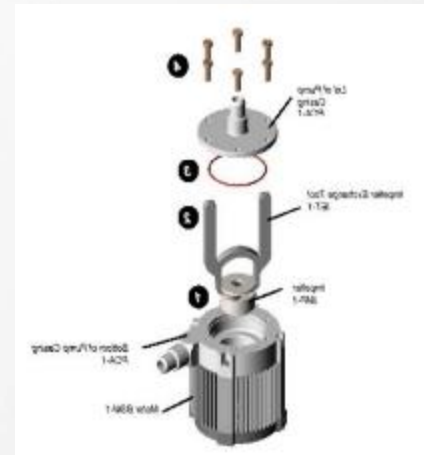
DYNATRONIX POWER SUPPLY MODEL					
PMC201/1-30-150	PMC1401(3-3-6&-1401-3-6)XR	PMC201/4-8-12XR	PMC301/4-15-40XR	PMC601/4-8-16XR	PMC601/4-8-16XR (Customer)

Available Unit for Exchange:	QTY
PMC201/4-8-12XR	8
PMC301/4-15-40XR	2
PMC601/4-8-16XR	3

PTW as supplier of Parts



All models of WhiteKnight Pumps including rebuild kits



Levitronix pump with controller and firmware



Grundfos dosing pump

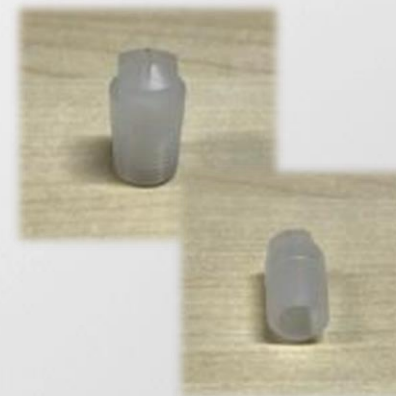
Consumable Parts



Mercury Contacts



Gold Contacts

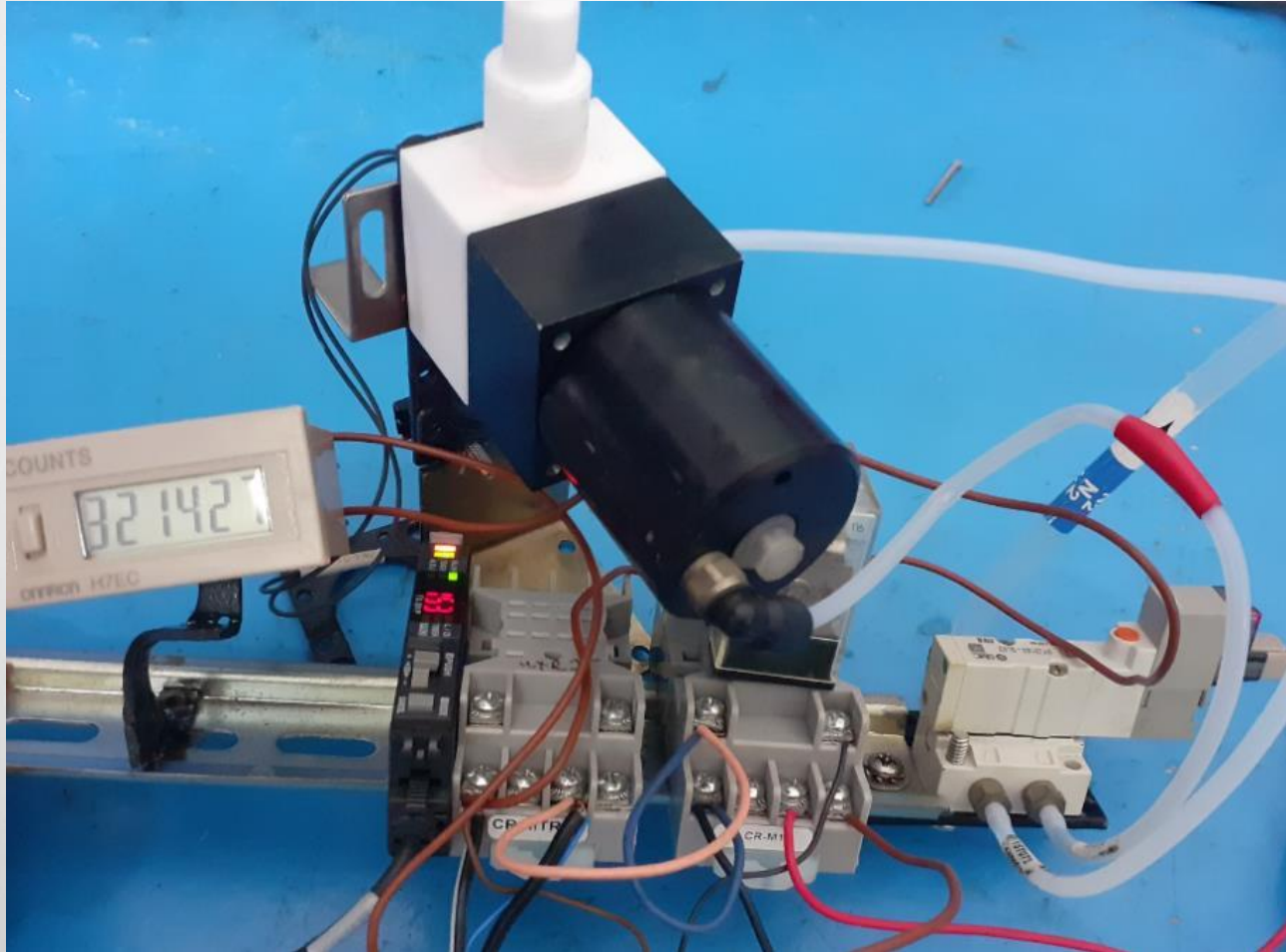


Spray Nozzles



Different types of ACTUATORS

Actuator Refurbishment- for reference



-refurbishment is 40-60% cheaper

-life of the actuator is better than original due to the improved design of internal components (on par if not better than the new AMAT Gyde Actuators)

-new Teflon poppet valve will be used on all refurbishment

-other components will be used to reduce carbon footprint (customer needs to send us their used actuator valves)

-all actuators will be guaranteed at 1M strokes or 6 months from date of first use

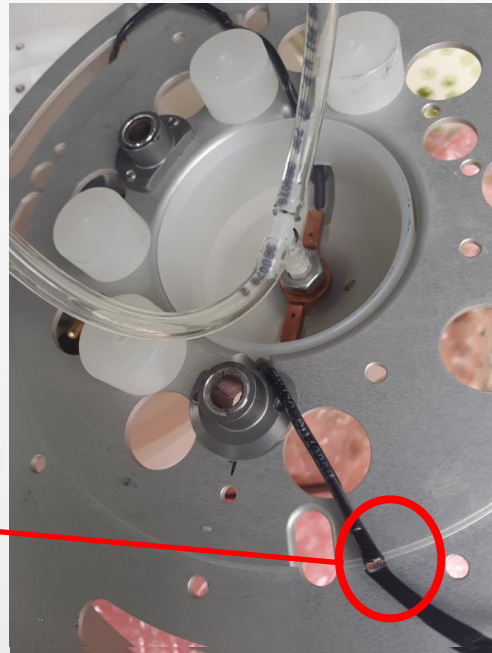


Remarks: Project was concluded after we exceeded 1,000,000 counts without leaks.

-TI will now install 2 refurbished actuators in their machine for qualification.

150mm Rotor Refurbishment- for reference

Wear and tear of ROTOR



Cut wire



EXTENDED -refurbishment can extend the life of the rotor before major parts will need replacement



-customer can reduce carbon footprint by re-using the rotor after meticulous refurbishment by PTW Raider experts



-precision engineering of parts that needs replacement

PRISTINE CONDITION



Remarks: Voltage-out-of-tolerance (VOOT Alarm) and Current-out-of-tolerance (COOT Alarm) on Raider plate can be caused by cut wire on the ROTOR.

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STORM

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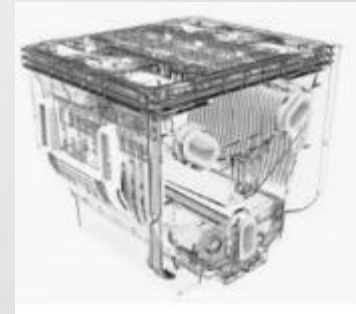
Semitoool STORM - Customized



Ladder – FOUP



Ladder – FOUP DOOR



Ladder – 8" cassette



Ladder – 6" cassette



PTW can customize ladder design depending on **CUSTOMER NEEDS**

Semitool Platforms Turnkey Solutions

SPECTRUM

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Semitoool SPECTRUM Capability

Repair and Exchange
of Tank, Facility,
CHEM I/O, gold boxes,
etc.

Reverse Engineering

- made and machined in Europe
- precision engineering
- virgin Teflon material
- superb rotor balancing
- same as OEM



912C0137-06
Tank Control I/O Block



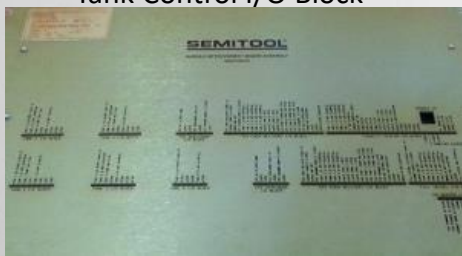
900C0181
Chemical Delivery I/O Block



BRUSHLESS SERVOMOTOR



PTW can now fabricate the Guardian Carrier of SPECTRUM and can be sold brand new to customers around the globe.



900C0183
Module Interconnect Assy



900C0177
Facility System I/O



23797-501
CP/DOOR GUARDIAN INTERFACE

Semitoool Raider Repair and Refurbishment

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Process Flow

Processes:



REPAIR



REFURBISHMENT

Semitool Refurbishment Program

■ We take in the Tool/Process specs and design a system spec for a tool to refurbish and meet the customers specs. We work together from:

- Spec setting
- Tool configuration
- Tool sourcing (if non existent)
- Complete refurb and overhaul
- Installation and Process approval
- Safety Buy-off
- Warranty on the system and function



WHAT WE CAN DO FOR PROACTIE SERVICES

Cost reduction program

- ❖ Reversed engineering process on applicable parts
- ❖ Prompt spare outsourcing at lower cost
- ❖ Competitive from any other supplier
- ❖ Supports "WIN-WIN" Situation to both party

LFC to Metering Pump Upgrade

- ❖ Reliable chemical mixture
- ❖ Stable chemical concentration

Chiller Upgrade

- ❖ Low power consumption(62%)
- ❖ Maintenance free

Sigma 2 series readiness

- ❖ Parts exchange program
- ❖ Sufficient inventory for Yaskawas brand new and refurb
- ❖ World wide network

Spare parts readiness

- ❖ Support most on Non consumable local and overseas inventory as defined
- ❖ Lower cost on consumable parts local and overseas inventory
- ❖ OEM gold boxes parts exchange/ repairs
- ❖ Parts refurbishment
- ❖ Parts flexibility - oem or PTW Asia

Training support

- ❖ On site training at lower cost
- ❖ Training at our facility is also available

OUR GAME PLAN

- ✓ Technical support : 24/7
- ✓ Includes Major Planned Maintenance and technical troubleshooting services
- ✓ Bring in Legacy tools in local warehouse for part exchange program
- ✓ Supports CIP to improve tool utilization performance





THANK YOU!

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