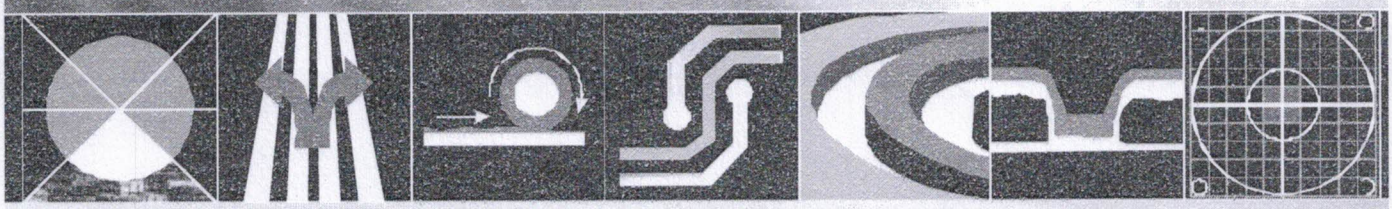
SCHMID

manual



1.2 Technical Data Sheet

Machine Type:		Alpha Prep
Delivery Date:		Dec 2005
Machine Length	[mm]:	5875
Machine Width	[mm]:	1450/1175/960
Machine Height	[mm]:	1090
Max. Working Width	[mm]:	650
Working Height	[mm]:	900+/- 15
Working Direction:		Left-Right
Operation Voltage	[V/Hz]:	400±10% / 50HZ
Special Voltage	[V]:	
Control Voltage	[V]:	24 DC
Tot. Connected Power	[kW]:	27
Tot. Connected Ampere	[A]:	64
Sound Level (measured in accordance with DIN 45635 at a free-standing machine)	[dB(A)]:	72
Conveyor Speed	[m/min]:	0,2 - 6,0

1. Introduction

1.3 General Description

The Bond process line (oxide replacement) or the black oxide line is a fully automatic system used to chemically oxide the copper surface of the PCB's image pattern. The Bond processes can be also used as a preclaening line. It is most often used in multilayer production. The PCBs pass through the machine horizontally during the process. The entering panel triggers the work process.

The modular construction of a black oxide line typically consists of:

- Input
- Degreasing
- Rinsing
- Micro Etching
- Rinse
- NaOH-Rinse
- Black-Oxide
- Rinse
- Dryer
- Runout
- Separate Control Cabinet

The modular construction of a Bond process line typically consists of:

- Input
- Cleaner
- Cascade-Rinse
- Pre-Dip
- Etch Bond
- Cascade-Rinse
- Acid Cleaner
- Cascade-Rinse
- Dryer
- Output

The control cabinet is located directly next to the line. Transport speed can be infinitely regulated by a potentiometer between 0.2 and 6.0 m/ min. and is monitored by a digital display included. The line accepts boards between 0.2 and 6.0 mm thick.

1. Introduction

The Bond process line or black oxide line of the ***combi-etch*** type can be completely integrated into any line manufactured by Gebr. SCHMID if the working width is the same. It can be loaded and unloaded by all handling systems produced by Gebr. SCHMID ***(Vacumat)***. Module lengths between 375 and 2725 mm allow for exact fittings according to customer's preference and capacity demands. Additional extensions, modifications and division of the line can be implemented at any time.

The only materials used are PVC with high impact resistance and titanium metal parts. There is no danger of the etching agent crystallizing during standstill periods because the transport system is open in the working area. There are no leaks in the line and it can be disassembled quickly without tools.

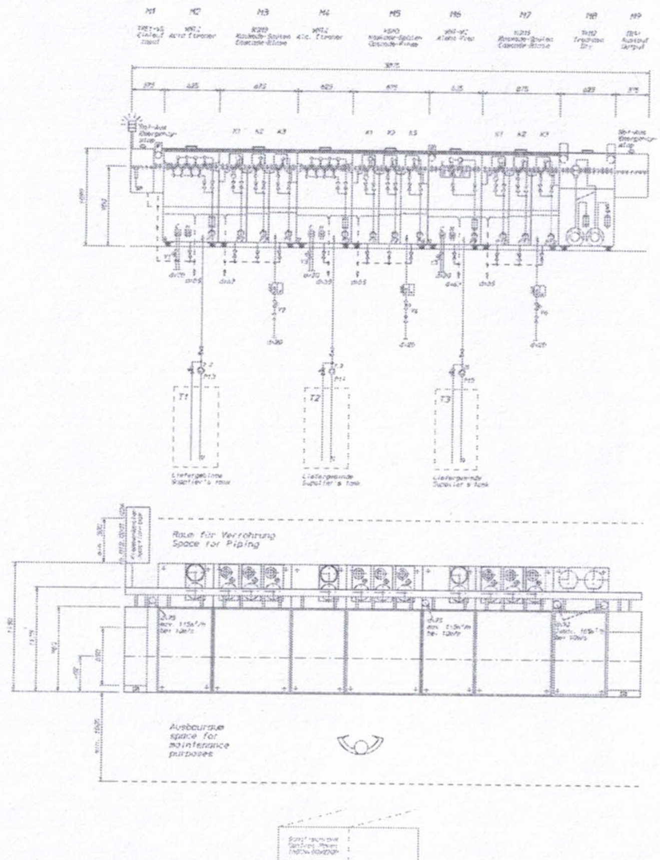
The submersible pumps used in the modules are leakproof with inlet from above and below and have an impeller wheel fed from both sides. The pumps thus contribute to the best mixing of the etching agent. The rinse and tank modules available allow the combination of fresh water, recirculated water, and cascade rinsing. Large volume tank modules use the same pumps as the etching module.

Dryers are equipped with slanted suction nozzles above and below the bore holes. There are also squeegee rollers above the conveyor level, vacuum pumps, and air knives. In addition, large dryers have one or more high-powered blowers. The hot air output is thermostatically regulated and therefore can be used for high feeding speeds.

All modules can be delivered in either direction of operation. The following working widths are available:

- **400 mm**
- **650 mm**
- **1320 mm**

Modell	Model									
Pumpe	Pump	PVC/SC	PVC/SS	PVC/SS	PVC/SS	PVC/SS	PVC/SS	PVC/SS	PP/SS	PVC/SC
Filter	Filter		1x TP 1.5kW	3x TP 0.37kW	1x TP 1.5kW	3x TP 0.37kW	1x TP 1.5kW	3x TP 0.37kW		
Filterkerze	Cartridge		1x 1x10"		1x 1x10"		1x 1x10"			
Durchflussmesser	Flowmeter		1x 60µm		1x 80µm		1x 60µm			
Badvolumen	Bath volume									
Temperatur	Temperature		V=165l	V=260l	V=165l	V=260l	V=165l	V=260l		
Prozesszeit	Process time									
Temperaturregler	Temperature control									
Sicherheitsthermostat	Safety thermostat		TH		TH		TH			
Niveaukontrolle "Stehende Welle"	level control "Immersion zone"		STH		STH		STH		STH	
Niveaukontrolle	level control									
					NIV					
			TC		TH		TC			



Pumpenliste / List of pumps

Conveyor speed approx. 0.5m/min

Arbeitsrichtung/Working Direction

Arbeitsbreite/Working Width

Platinenformat/Panel Size

Platinenstärke/Panel Thickness

26-18754-2-A1

Alpha Prep Line