

## Thin steel plate etching

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Exposure

Developing

Etching

De-layering



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PAD PRINTING ACCESSORIES

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 **Teca-Print**  
 **Teca-Print**



## USE AND FEATURES OF THIN STEEL PLATES

In pad printing, thin steel plates are used for small to medium-sized production runs. Thin steel plates are very cost effective, easy to etch and provide good printing results.

Through development and tests, Teca-Print AG has proven out a range of products to optimize thin steel plate etching. For the best results – whether in terms of etching or print quality – it is critical that all products used in the etching process are carefully chosen and matched together. We are pleased that Teca-Print can now offer such a complete range of products and materials for the entire thin steel plate etching process.

Teca-Print thin steel plates are available in all commonly demanded plate sizes, whether un-punched or with punched holes for Sealed Ink Well printing systems.

Please note that on delivery and during the etching process, thin steel plates are very light-sensitive.

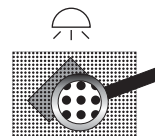
Teca-Print thin steel plates are double-side coated so that both sides can be etched.

### THIN STEEL PLATE ETCHING

#### 1. EXPOSURE

Peel off protective foil from the thin steel plate. The mat positive film, with the print image side down, is now placed on the plate which is then exposed to UV-light in the exposure units BG 25/30, BG 35/50 or BG 35/100. Exposure time for screen and line films is approximately 30 seconds.

For larger print images, we recommend that our screen film E 7812 with 120 lines/cm is used.

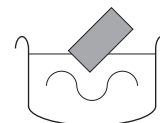


#### 2. DEVELOPING

Immediately after UV-light exposure, the thin steel plates are developed for 2 – 3 minutes in a chrome steel tank filled with Granosol GR under gentle stirring movements.

There are various sizes of chrome steel tanks and immersion tools available for this purpose (see table).

The plates are then rinsed with isopropanol from top to bottom and dried with compressed air.



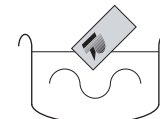
**Retouching:** Areas on the plate surface that have not been properly hardened during UV-light exposure can be protected from being etched off by covering them with red retouching varnish. For fine retouching, the etchproof masking pen can be used.

#### 3. ETCHING

Thin steel plates are etched in a salt solution of 5 parts of water and 1 part etching salt. The etching salt must be completely dissolved before the etching process can be begun. For optimum etching results, the salt solution temperature should be 38 °C.

The etching time should be between 2 and 2<sup>1/2</sup> minutes for unscreened plates with an etching depth of 25 µm and about 3 to 3<sup>1/2</sup> minutes for plates screened with screen film E 7812 (D 7580, F 6380).

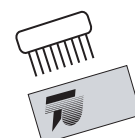
After the etching is complete, the plate must be rinsed with water.



The etching salt solution can be used for about 2 weeks, after that time its etching power begins to gradually diminish. An aging process also takes place while the solution is not in use. Unused etching salt should be stored in the original container in a cool, dry place and at a safe distance to any organic products. It is recommended to leave the salt solution resting for about 24 h before use.

#### 4. DE-LAYERING

Now the red retouching varnish that protected areas of the plate surface from the etching salt solution and the photolayer are removed. For this purpose, cleaner RB (cleaner RE or thinner VD) are applied, left on for a while to react with the residues on the plate surface, and are then removed mechanically using a brush.





# GENERAL INSTRUCTIONS

## STORAGE

Thin steel plates can be protected from rusting by coating them with a fine layer of oil after every use.

Unexposed plates should be stored in a cool, dry place and storage time should not exceed 6 months.



## OVERVIEW THIN STEEL PLATES (in packages of 5 pieces)

open ink well system			art. no *
D05	two sides coated	unlapped	D05 200 100
D16	two sides coated	lapped	D16 100 100
sealed ink well system			
N05	two sides coated, 2 holes punched	unlapped	N05 100 220
N06	two sides coated, 4 holes punched	unlapped	N06 150 220
N15	two sides coated, 2 holes punched	lapped	N15 080 220
N16	two sides coated, 4 holes punched	lapped	N16 150 300

\* The article numbers depend on the measures for width and length of the plate.  
The above list numbers are just examples.



D05: for open ink well system



N05: for sealed ink well system

## TECHNICAL DATA AND SAFETY DATA SHEETS

FOR FURTHER INFORMATION PLEASE CONSULT OUR TECHNICAL DATA SHEET ON THIN STEEL PLATE ETCHING. IT CONTAINS DETAILED INSTRUCTIONS AND GUIDELINES FOR THE ETCHING PROCESS.

Safety data sheets are available for all chemicals. It is essential that all **safety regulations** and **danger warnings** related to the respective chemicals are strictly observed.

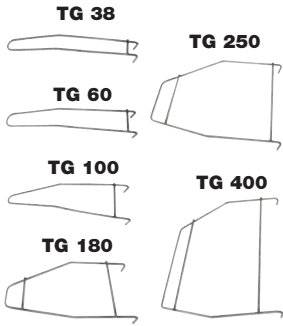
## LIST OF TECA-PRINT PRODUCTS FOR THIN STEEL PLATE ETCHING

Article No	Description	Type	Size / Contents / Remarks	Maximum plate size
89 02 03	Etching unit	AG 35/22		350 x 220 mm
89 02 04	Etching unit	AG 60/25		600 x 250 mm
90 00 53	Exposure unit	BG 25/30	520 x 200 x 460 mm	350 x 220 mm
90 00 07	Exposure unit	BG 35/50	760 x 200 x 460 mm	250 x 600 mm
90 00 55	Exposure unit	BG 35/100	1370 x 200 x 625 mm	320 x 1000 mm
90 00 21	Screen film	D 7580	130 x 180 mm	
90 00 22	Screen film	D 7580	166 x 600 mm	
90 00 23	Screen film	E 7812	130 x 180 mm	
90 00 24	Screen film	E 7812	166 x 600 mm	
90 00 27	Screen film	F 6380	130 x 180 mm	
90 00 28	Screen film	F 6380	166 x 600 mm	
89 02 11	Developer	Granosol GR	1 liter can	
55344 0003	Developer	Granosol GR	20 liter steel barrel	
58077 0031		Isopropanol	5 liter can	
89 74 01	Retouching varnish red		0.5 liter plastic bottle	
89 75 01	Etchproof masking pen		1 pen	
89 02 09	Etching salt		1 kg can	
89 02 10	Etching salt		5 kg bucket	
89 04 01	Chrome steel tank	B 160	180 x 100 x 250 mm	160 x 200 mm
89 04 02	Chrome steel tank	B 500	630 x 100 x 250 mm	600 x 200 mm
89 07 01	Immersion tool	TG 38	38 mm	
89 07 02	Immersion tool	TG 60	60 mm	
89 07 03	Immersion tool	TG 100	100 mm	
89 07 04	Immersion tool	TG 180	180 mm	
89 07 05	Immersion tool	TG 250	250 mm	
89 07 06	Immersion tool	TG 400	400 mm	
F91 00031 4	Cleaner	RE	1 liter can	
F91 00031 5	Cleaner	RE	5 liter canister	
F91 00031 8	Cleaner	RE	30 liter canister	
F98 00032 4	Cleaner	RB	1 liter can	
F98 00032 5	Cleaner	RB	5 liter canister	
F98 00032 8	Cleaner	RB	30 liter canister	
F91 00001 4	Thinner	VD	1 liter can	
F91 00001 5	Thinner	VD	5 liter canister	

All devices listed above have a **main voltage** of **230 V / 50 Hz**. If **115 V / 60 Hz** is required, the exposure units BG 25/30 (No. 90 01 53) or BG 35/50 (No. 90 01 07) may be used. For all other devices, use a **transformer** for 115 V.

# EVERYTHING FOR THE ETCHING PROCESS

## IMMERSION TOOLS TG



## DEVELOPER GR



## ETCHING SALT



## ETCHPROOF MASKING PEN



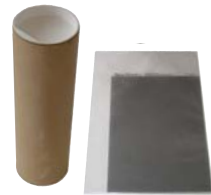
## CHROME STEEL TANKS



## THINNER VD



## SCREEN FILM



## EXPOSURE UNIT BG



## CLEANER RE, RB



## RETOUCHING VARNISH RED (0,5 L)



## ETCHING UNIT AG



## GLOVES



## HAND CLEANER



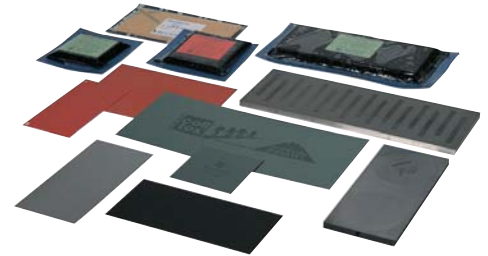
## OTHER PLATE TYPES

The Teca-Print plate range includes - in addition to the thin steel plates - **steel and plastic plates** in all commonly demanded sizes.

Four types of plastic plates are available:

- quality standard water-rinsable
- quality standard alcohol-rinsable
- quality long-life water-rinsable
- quality long-life alcohol-rinsable

Further information on plastic, steel and thin steel plates is available on request or can be downloaded from our webpage [www.teca-print.com](http://www.teca-print.com)



**Visit our website for further information about Teca-Print plates and other pad printing products**



**Teca-Print**

Teca-Print AG

Tel. +41 (0)52 645 2000

Postfach  
Bohlstrasse 17  
CH-8240 Thayngen

Fax +41 (0)52 645 2102  
info@teca-print.com  
teca-print.com