Introduction
For colour matching in offset inks with several colours are mixed. With the help of an IGT printability tester a solid print is made under standard conditions and the print is compared to an original print or design visually or with a spectrophotometer. When the original print is printed in half tone it is difficult to compare a solid print of the printability tester to this half tone original. For that reason there is a series of printing discs with halftone photopolymer strips with different screen rulings from 24 l/cm up to 70 l/cm and printed area from 0 % up to 100 %. This method is used for paste inks.

Principle
The half tone printing disc is inked on an IGT inking unit with the ink to be tested. A print is made on a substrate. The colour of the half tone print is compared to the original print or design.

Method of operation
- It is recommended to execute the test in the standard atmosphere; to most standards it is 23,0 ± 1,0 °C and 50 ± 2% rh.
- For the operation of the AIC2-5T2000, Global Standard Tester, Inking Unit and ink pipette follow the instructions of the manuals, IGT information leaflet W100 and the displays accurately.
- Handle the samples carefully.

Preparation
1. Condition the papers, the ink and equipment during > 6 hours in the standard atmosphere.
2. Cut the paper strips and mark them with top and/or bottom side, machine and/or cross direction and a code for the type of material.
3. For AIC2-5T2000 only:
   3.1. Mount the packing on the sector. See W100 and note 1.
   3.2. Adjust the printing speed to 0,2 m/s in the constant speed mode (▭).
   3.3. Adjust the printing force of the top printing disc shaft to 625 N or another value and pay attention for the right backlash. See W100 and note2.
4. For GST 2/3H only:
   4.1. Mount the packing on the sector. See W100 and note 1.
   4.2. Select the menu "Screen print" in the display. See note 2.
5. Fill the ink pipette with the ink to be tested.
6. For High Speed Inking Unit only:
   Adjust the unit with the following settings:
   - Water bath: 23,0 °C (73,4 °F)
   - Top roller: 4-segmented, rubber for conventional inks
   - Mode: 2
   - Startup time: 10 s
   - Distribution time: 20 s
   - Distribution speed: 0,5 m/s
   - Inking time printing discs: 15 s
7. For Inking Unit AE FOUR only: see manual or W100.

Materials / Testing conditions		
1	IGT AIC2-5T2000	710.000.000
	or IGT Global Standard Tester 2	412.000.000
	or IGT Global Standard Tester 3H	467.000.000
2	IGT High Speed Inking Unit 4	466.000.710
	or IGT inking unit AE FOUR	465.000.710
3	Top roller with 4 segments for conventional inks	466.003.003
4	IGT ink pipette	408.000.200
5	Printing disc with half tone photopolymer strip	See note 4
6	Packing, rubber, 55 mm	404.001.006
7	If desired, reference paper C2846, black strip	404.009.031
Strips of paper to be tested, preferable 55*340 mm², 2 strips per sample		
Ink to be tested		
Lint free rags and cleaning naphtha		
Printing force	625 N or 100-500N	
Printing speed	Constant, 0,2 m/s	
Ink film thickness (volume)	2,4 µm (0,10 cm³)	
► The numbers 1 thru 7 are available at IGT Testing Systems.		

Execution
1. Apply 0,10 cm³ of the ink to be tested to a segment of the top roller of the inking unit and distribute the ink during the preset or desired time.
   NOTE: For rough papers this volume can be more.
2. Place the printing disc on the printing disc shaft of the inking unit and ink the disc during the preset or desired time.
3. Attach a test strip into the front clamp of the sector.
4. Remove the disc from the inking unit and place it on the top printing disc shaft of the printability tester.
5. Turn the disc so that the seam of the disc is just below the contact area between the disc and the sector.
6. Make a print. See W100.
7. Take off the printed strip from the sector.
8. Check the test result as pointed out in the chapter "Assessment".
9. Remove the printing disc from the tester and clean it with the rags and naphtha and let it dry.
10. Clean the rollers of the inking unit or use the next segment for the following test.
11. Repeat the points 1 thru 10 for the next test. It is recommended to perform the test at least two times.
12. After finishing the tests clean and store all parts as described in the manuals.
13. Make an accurate record of the conditions and the results of the test and refer to W45.

Assessment
Examine the printed strip visually and compare it to the original print.

Notes:
1. Tests learned that the best printing results are obtained by using a rubber packing on the sector.
2. Sometimes it is difficult to have all half tone parts printed in the best quality with only one printing force. In this case it is advised to use a printing force, dependent to the printed area of the photopolymer: 625 N for 100%, 500 N for 85%, 400 N for 65%, 200 N for 35% and 100 N for 15%.
3. Available printing discs with half tone photopolymer strips are presented on page 2 of this leaflet.

►►

W45 for IGT AIC2-5T2000, GST 2/3H

Overview of available printing discs with half tone photopolymer strips:

Printing discs with half tone photopolymer		
Article number	Screen ruling l/cm	Design
402.123	40	4 fields: 15, 35, 65, 85%
402.510	24	4 fields: 0, 40, 80, 100%
402.511	28	
402.512	40	
402.513	54	
404.514	60	
402.515	70	
402.520	24	4 fields: 25, 50, 75, 100%
402.521	28	
402.522	40	
402.523	54	
404.524	60	
402.525	70	
402.500	24	20 fields: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 96, 97, 100%
402.501	28	
402.502	40	
402.503	54	
404.504	60	
402.505	70	
402.530	24	Half tone 1 wedge 5% → 100%
402.531	28	
402.532	40	
402.533	54	
404.534	60	
404.535	70	
402.543	54	Half tone 2 x 11 fields CXF 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100%
402.544	60	
402.545	70	

► *2006: In comparison to older IGT leaflets, this leaflet is valid for the AIC2-5T2000 and Global Standard Testers as mentioned.*
► *2012: This leaflet is valid for the AMSTERDAM and AE FOUR as well and contains some small text corrections; a new series of printing discs has been introduced.*
► *2017: This leaflet is valid for the AIC2-5T2000 and GST 2/3H only and contains some small text corrections. Some new discs are introduced.*

IGT Testing Systems, P.O.Box 22022, 1302 CA ALMERE, The Netherlands / Randstad 22-02, 1316 BX ALMERE, The Netherlands
T: +31 (0)20 409 9300 F: +31 (0)20 409 9339 info@igt.nl http://www.igt.nl