

KENT ROBOTIC
AUTOMATION



ROBOTIC AUTOMATION IN
PAD PRINTING

www.youtube.com/user/kentpadprinter

ROBOTIC



About KENT

For 40 years, KENT has been building precise automation systems specialized in pad printing. Many of the household brand names across various industries are KENT customer world-wide.

Over the year, KENT has been awarded for our technological innovation by varies industrial standards, certifications and prizes.



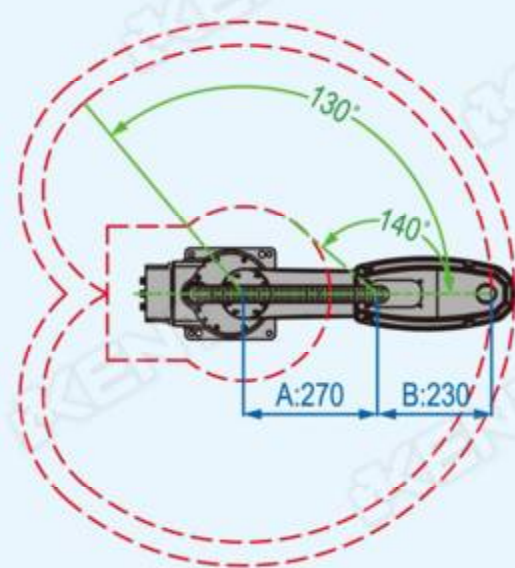
Product

- Robots
- Stacker
- AVC
- Precision Positioning Device
- CCD Camera Positioning
- Pad Printing Robot Automation

4 - AXIS SCARA ROBOT

KENT Scara Robot to replace worker for load / unload parts in pad printing automation complete solution

- Simple control, user-friendly operation
- Fast job change, no robotic expert needed
- Fast and accurate cycle time
- Rigid construction
- Touch panel control, simple sequence
- CCD camera positioning or quality inspection



SPECIFICATIONS

Model :	KSR-500
Type :	SCARA Robot
Axis :	4
Arm Length : Arm A + Arm B	270 mm + 230 mm
Operation Range : Arm A	+/- 130°
Arm B	+/- 140°
Z-Axis	150 mm
R-Axis	+/- 360°
Maximun speed : Arm A+B	5,000 mm/s
Z-Axis	1,300 mm/s
R-Axis	2,500 mm/s
Payload :	1 kg (Max. 3 kg)
Repeatability : (X,Y,Z)	+/- 0.02 mm
Machine weight :	16 kg

- Patent : HK1174481,
ZL 2012 2 0462193.9
ZL 2016 2 0096329.7
ZL 2017 2 0392009.0

KSR-500



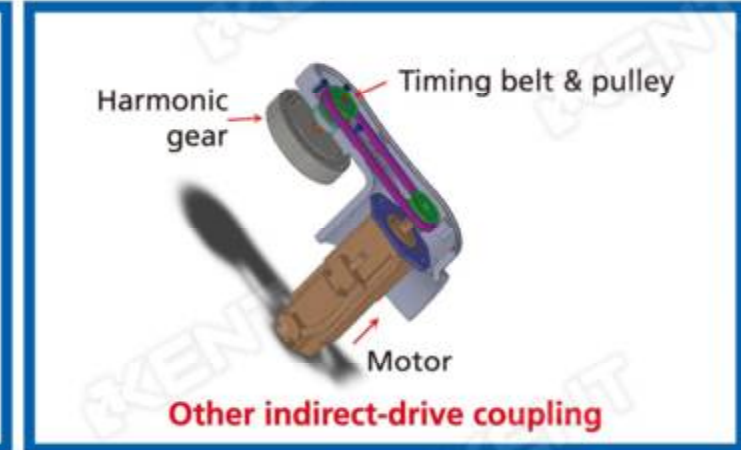
6 - AXIS ROBOT

KENT Robotic technology provide complete automation solution for pad printing and assembling



• Patent pending : 201520675705.3

Different between KENT 6 - axis Robot and others



1 KENT use **Direct-Drive**. Motor shaft direct link to harmonic gear. Other link by timing belt, pulley, bearing, extra shaft, angle gear etc.

2 KENT use 45% less parts, less wear and tear, less noise.

Other Robot use approx. 112 parts

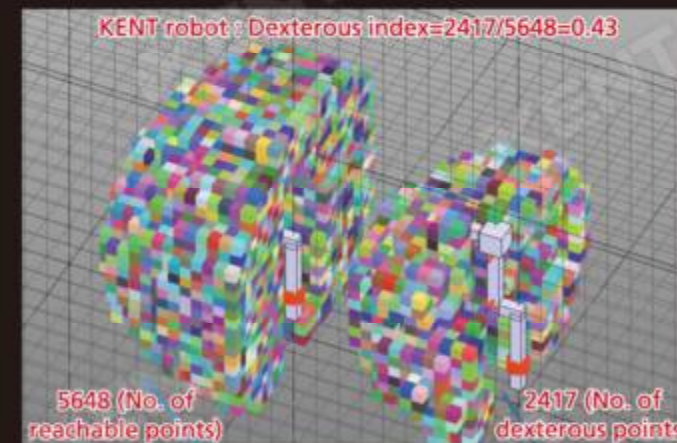
KENT : approx. 64 parts

More parts means :

- More friction
- More wear and tear
- More maintenance
- Higher cost
- Less quality assurance

3 KENT put all wire harness inside robot.

4 KENT has better dexterous index (0.43) (arm reaching space), Others (0.42) (space robot can reach)



Graphic shows robot reachable points. KENT robot is better than other robot in terms of dexterity

5 KENT is the quietest robot of same size. Less moving parts, less vibration.

6 KENT robot is 20% less in weight but gives same power output.

7 Less parts easy maintenance.

8 KENT is better both in Repeatability and Absolute accuracy measuring.

- **Repeatability Accuracy** : Accuracy of robot movement repeating at same positions.

- **Absolute Accuracy** : Accuracy of robot movement base on controller instruction.

KR6-600



SPECIFICATIONS

Model :	KR6-600	
Type :	6 Axis Robot	
Axis :	6	
Operation	J1	+/- 170°
Range :	J2	-145° ~ +70°
	J3	-50° ~ +125°
	J4	+/- 200°
	J5	+/- 105°
	J6	+/- 360°
Vertical length :	920 mm	
Horizontal move :	691 mm	
Rated load :	1 kg (Max. 3 kg)	
Repeatability :	+/- 0.02 mm	
Robot weight :	26 kg	

Parts Auto Feeding Stacker

Un-man operation, Robot feeding parts to printing machine,
no production interruption



Double Stacker



Pick & Place by Scara Robot

FEATURES

- User-friendly easy operation
- Non-stop printing when changing trays
- Accurate tray / part positioning
- DC motor drive couple with bicycle chain
- Rigid construction linear bearing slide
- Accurate robot alignment
- Adapt any KENT printer



Single Stacker



AUTOMATIC VISCOSITY CONTROL

Automatic device to add solvent to ink cup.
 Able to maintain stable ink viscosity throughout production.
 Essential feature for full and semi-automated pad printing.



- No need for operator to stop machine to add solvent
- No more machine down time
- Auto control of ink viscosity
- Ensures ink colour shade consistency

• Patent : ZL 2011 2 0313475.8,
 3173070, 20 2011 103 685.9,
 HK1162839

80% print rejects are caused by inconsistent ink viscosity :



Printing result comparison :

Time	No AVC	With AVC
	Printed sample	Printed sample
1 hour (1st print)		
	OK	OK
4 hours (3463 prints)		
	NG (Unstable opacity)	OK
8 hours (5896 prints)		
	NG (Miss print)	OK

Remark : Actual figure is guarantee with using KENT ink.



- KENT AVC reliably maintains accurate ink viscosity throughout an entire work shift in all production environments.

LINEAR SERVO SHUTTLE

Linear Servo Shuttle devices for parts or robot move



- Range from 600 mm to 3,000 mm shuttle length
- Payload 10 kg to 60 kg
- Speed 1.5 to 2.5 m/sec.
- Shuttle accuracy from +/- 0.02 mm to 0.005 mm
- Selection of Aluminum cast, granite stone or fabricated steel structure for varies application

Fast ; Quiet ; Precision Print Positioning



Aluminum Casting structure



Granite Stone structure



Fabricate Steel structure



KENT Green Pad Printing Robotic Automation

KENT is highly regarded as the best solution provider in pad printing industry.



CCD + feeding conveyor for electronic parts



Feeding shunt



CCD + feeding conveyor for toy car



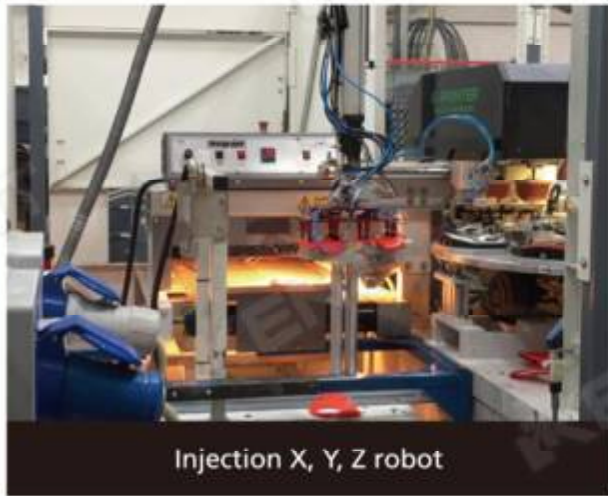
Plastic Industry



Toy Industry



Home Appliance Industry



Automobile Industry



Automation Industry



Shoe Industry



Medical Industry



Manufacturing Facilities

Helmet Industry



Electric Appliance Industry



KENT has associated manufacturing, assembling and custom built facilities to satisfy customer demand for quality, value and reliable delivery. Along with our superior manufacturing process goes our expert knowledge and professional staff. We have skilful workers always committed to bring new ideas and ensure customer satisfaction.



Laser cutting machine



Sand blast



3D measure



Horizontal CNC



15 state-of-art
CNC machines
Max. travel :
2.2 m x 4 m



Complex welding facility



KENT Robot Automation machines connect with customers through internet



KENT has a world-wide network of 30 established agents. They are all recognized as one of the best Pad Printing suppliers in their countries with superior technology, solution and service.

Sister companies and associate agents / dealers

- | | |
|----------------------|---|
| Austria | MAG-Motoren Ges.m.b.H. |
| Australia | Milford Astor (a division of Aldus-Tronics Pty Ltd.) |
| Brazil | KENT do Brasil (Trausi Indústria E Comércio Ltda.) |
| Canada | KENT Pad Printer Canada Inc. |
| Canada (dealer) | E3 Systems Ltd. |
| China | KENT Engineering (Gao Yao) Co., Ltd. |
| Croatia | Marsa d.o.o. |
| Czech Republic | Visma s.r.o. |
| France | Sup Gravure - Groupe Portelli |
| Germany | KENT Stuttgart GmbH |
| Hong Kong | KENT Engineering Co., Ltd. |
| Hungary | KENT Hungary Kft. |
| Israel | Multipack Ltd. |
| Italy | Marabu Italia s.a.s |
| Japan | Mino International Ltd. |
| Malaysia | Krisdara Technics Sdn. Bhd. |
| Mexico | Industrial Pad Printing Supplies S. de R.L. MI. |
| Pakistan | Printing Techniques |
| Philippines (dealer) | Eguchi Kohan Company Ltd. |
| Poland | KENT Polska Sp.z.o.o. |
| Portugal | Ideiaprint - Gustavo Rebelo |
| Romania | EDCG Electronic Design & Consulting Group |
| Russia | KENT -RUS-Slavprint |
| Scandinavia | Marabu Scandinavia AB |
| Serbia | Destefiko d.o.o. |
| Slovakia | KENT Slovakia S.R.O. |
| South Korea | Seokwang Spi Co., Ltd. |
| Spain | Seinse KENT , S.L. |
| Taiwan | Taiwan Mino Group Co. Ltd. |
| Thailand (dealer) | Chaiscreen Machinery Co., Ltd. |
| Thailand (dealer) | T.A.O. Bangkok Corporation Ltd. |
| Turkey | Serimak Serigrafi Malzemeleri San. A.S. |
| U. K. | Tampo Ltd. |
| U. S. A. | Diversified Printing Techniques Inc. |
| Vietnam (dealer) | T.A.O. Bangkok (Vietnam) Co. Ltd. |
| Vietnam (dealer) | P&S International Co., Ltd. |



- On time, on-line communication and service
- Maximum productivity
- Minimal consumption
- On time product delivery



KENT has supported our global customers in the past 40 years and will continue to provide our best service for decades to come.



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www.kentpp.com

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