

# akei<sup>®</sup>

**AKEI  
HOLDINGS  
COMPANY  
LIMITED**



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## **LINEAR SERIES**

## Akei offers 4 machine models in the LINEAR Series



### **LIN-70-TS:**

This model proves to be the most efficient yet in regards of size, production and consumption. With a dry cycle speed of 2.8 seconds it can achieve 900 pieces per hour of a 1L oil container with view stripe on a double head configuration. Even though it is standardized with a 70mm extruder it can also be upgraded to an 80mm extruder to accommodate for the production of up to 5L containers in single head configuration.

### **LIN-90-TS:**

Standardized with a 90mm extruder it can produce 1L Polypropylene containers with a configuration of three cavities per side at a rate of 1200 pieces per hour under factory conditions. This model is also ideal to accommodate 4L containers in a double cavity configuration.

### **LIN-100-TS:**

The main features that differentiate this model are the increased transfer stroke at 700mm, when compared to the previous model, as well as the 100mm extruder. These features allow for higher output while at the same time adding flexibility to increase the number of cavities when product allows for it.

### **LIN-90II-TS:**

Equipped with two 90mm extruders and a transfer stroke of 900mm this model definitely packs the most powerful punch of the series. With an impressive dry cycle time of 4 seconds and a platen size capable of accommodating three 4L containers per side with an output of 850 containers per hour under factory conditions.

This series was specially designed to target customers in need of producing low and high volume containers in large quantities. With the latest technological developments each model reaches high speed dry cycle times that enable to meet stringent production requirements.

Equipped with world wide recognized electrical, hydraulic and pneumatic components, energy consumption levels are certainly minimized to achieve strict efficiency targets thus contributing to reduce the negative impact on the environment.

This series has been proven to perform at the same level, at times higher, when compared to the top name brands of European manufacturers. At less than two thirds the cost it proves to be a very sound investment for customers looking to increase their production while maintaining the integrity and consistency of reliable equipment.

# LINEAR SERIES COMPONENTS:

## Control System

**BECKHOFF**



- Windows CE operation system
- 12" TFT display with swing-out swivel arm
- Closed-loop application for all machine movement
- Touch screen plus soft key panel
- Integrated controls of all machine movement, cycle time, delays, and positioning
- Integrated controls of heating zones, set points, screw speed, proportional settings, pre-heat settings, etc.
- Provision alarms, alarm diagnostic, alarm logs, and alarm history
- Display status of all I/O's including optional auxiliary equipment and connection via "real time" EtherCAT
- Protected parameter
- Intel Atom 1.6GHz processor, 64MB compact flash card for data storage and update



## Extrusion Unit

**akei®**

**MOOG**

**SEW  
EURODRIVE**

- 3-point adjustable dies for ease of centering
- Can accommodate multi layer production with up to ten parisons
- Heating Zones evenly distributed to ensure proper flow of material
- Air Cooling System operated by individual fans keeps extruder bi-metallic screw barrel from reaching high temperatures while minimizing energy consumption
- Extruder screws fabricated from 42CrMo electro plated steel treated in ammonia atmosphere at 525°C for 120 hours
- 100-point parison programmer using a Moog® cylinder and LVDT



## Clamps & Carriages

**VICKERS**

**Rexroth**  
Bosch Group

- Clamping force is applied to center of platens for proper force distribution
- All clamp and carriage movements are on Rexroth® T-rail and slide bearings
- Touchless transducers minimizing wear and friction, prolonging reliability and stability



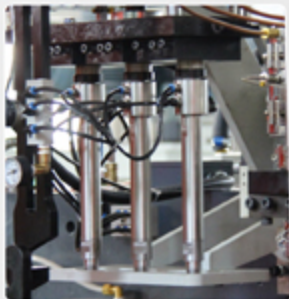


## LINEAR SERIES COMPONENTS:

### Blowpin Stations

VICKERS  
FESTO

- Blowpin station movements are actuated by Vickers® proportional hydraulics
- Blowpin stations equipped with interchangeable "T" plates, with 3-point adjustable holder for ease of centering.
- Blowpin stations are adjustable for angled neck production
- Festo® three-stage pneumatics with quick-exhaust valves
- Circulating Air and Water blow pin shafts contribute to increased production output



### Deflashing

VICKERS  
FESTO  
SMC

- Deflash movement actuated by Vickers® proportional hydraulics
- Post cooling of bottles, necks, and scrap prior to deflash movement
- Automatic inline de-flashing of necks, handles & bottoms using hydraulic cylinders



### Oriented Discharge

FESTO  
SMC

- Oriented discharge device on each side of machine, delivering parts upright onto conveyors
- Robot-arm movements actuated by Festo® & SMC® pneumatic components



### Conveyor System

akei®

- Wrap-around conveyor to deliver bottles in a single lane to one side of machine
- Horizontal scrap conveyor, complete with wrap around incline conveyor for delivery to grinder



# LINEAR SERIES COMPONENTS:

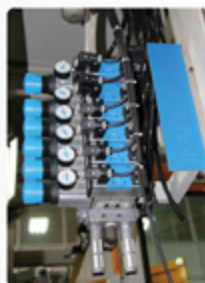
## Pneumatics

FESTO

SMC



- Independent Dwyer® gauges for flow adjustment of parison support air, parison decompression, blow air, scrap-cooling air, and post-cooling air
- FESTO® pneumatic controls
- SMC® pneumatic cylinders
- Three-stage proportional blowing and exhaust



## Electricals

Schneider  
Electric



Allen-Bradley

- Schneider®
- Carlo Gavazzi®
- Allen-Bradley®



## Hydraulics

VICKERS

- Vickers® variable hydraulic pump, valves and accumulators
- All hydraulic movements are actuated with closed-loop proportional system
- Proportional valves' parameters are adjustable as per requirements



## Lubrication

- Automatic lubrication system controlled through main controller
- Capable of feeding most critical moving points in order to minimize maintenance down-time



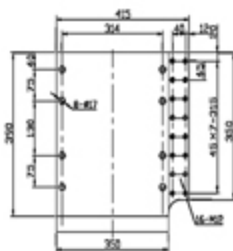
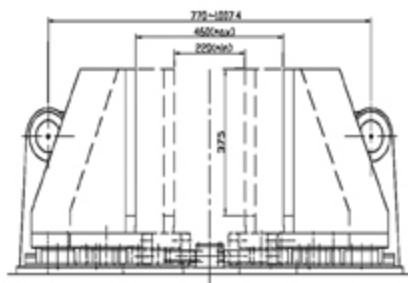
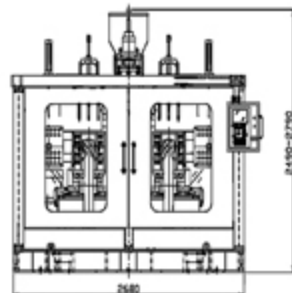
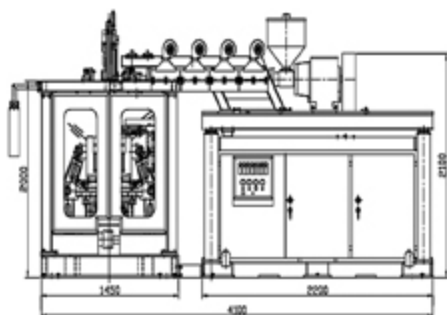
## LIN-70-TS:

### TECHNICAL DATA

Screw Diameter: 70 mm  
Screw L/D: 24:1  
Screw Speed: 9-58 rpm  
Extruding Volume: 85 kg/h  
Extruder Heating: 4 zones  
Transfer Stroke: 480mm  
Clamp Stroke: 120x2  
Clamp Force: 12.5 Tons  
Dry Cycle: 2.8 seconds  
Parison Programming: 100 Points  
Water Consumption: 1.5-2.5 m<sup>3</sup>/h  
Air Consumption: 1.5-2 m<sup>3</sup>/min  
Net Weight (Approx.): 15 Tons

### POWER CONSUMPTION

Inverter Drive Motor: 30 kW  
Extruder Heater (PE): 14 kW  
Hydraulic Pump Motor: 22 kW  
Die Heater: 7.65-11.4 kW  
Max. Consumption: 73.7-77.4 kW



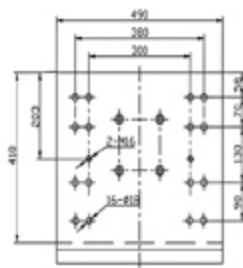
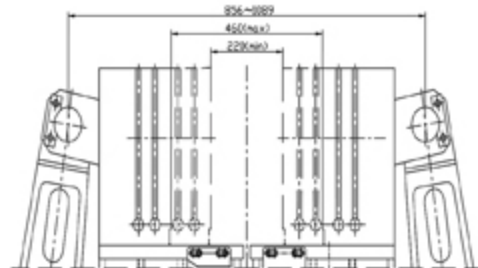
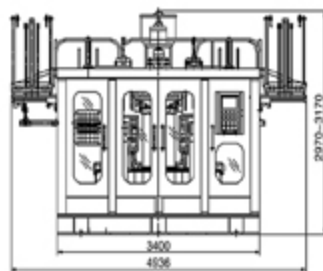
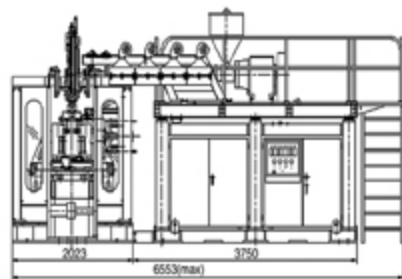
## LIN-90-TS:

### TECHNICAL DATA

Screw Diameter: 90 mm  
Screw L/D: 24:1  
Screw Speed: 11-85 rpm  
Extruding Volume: 25-225 kg/h  
Extruder Heating: 4 zones  
Transfer Stroke: 590 mm  
Clamp Stroke: 120x2  
Clamp Force: 19.6 Tons  
Dry Cycle: 3.2 seconds  
Parison Programming: 100 Points  
Water Consumption: 3-5 m<sup>3</sup>/h  
Air Consumption: 2-3 m<sup>3</sup>/min  
Net Weight (Approx.): 21 Tons

### POWER CONSUMPTION

Inverter Drive Motor: 55 kW  
Extruder Heater (PE): 16 kW  
Hydraulic Pump Motor: 55 kW  
Cooling Motor: 4 kW  
Die Heater: 17.8-19 kW  
Max. Consumption: 167.8-169 kW



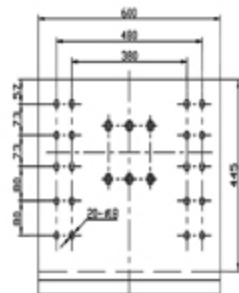
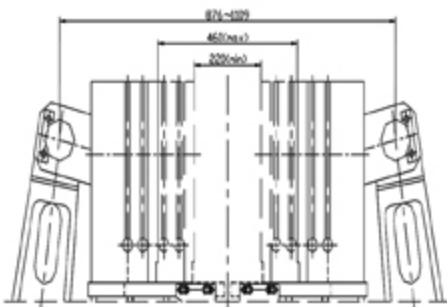
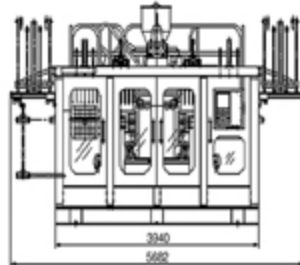
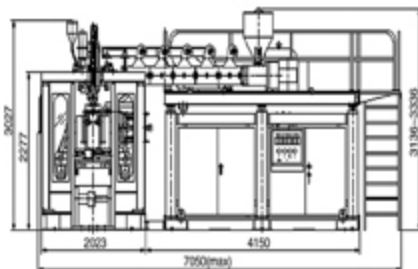
## LIN-100-TS:

### TECHNICAL DATA

Screw Diameter: 100 mm  
 Screw L/D: 26:1  
 Screw Speed: 11-55 rpm  
 Extruding Volume: 40-270 kg/h  
 Extruder Heating: 5 zones  
 Transfer Stroke: 700 mm  
 Clamp Stroke: 120x2  
 Clamp Force: 19.6 Tons  
 Dry Cycle: 3.6 seconds  
 Parison Programming: 100 points  
 Water Consumption: 3-5 m<sup>3</sup>/h  
 Air Consumption: 2-3 m<sup>3</sup>/min  
 Net Weight (Approx.): 22 Tons

### POWER CONSUMPTION

Inverter Drive Motor: 75 kW  
 Extruder Heater (PE): 25 kW  
 Hydraulic Pump Motor: 55 kW  
 Cooling Motor: 4 kW  
 Die Heater: 18.5-20 kW  
 Max. Consumption: 177.5-179 kW



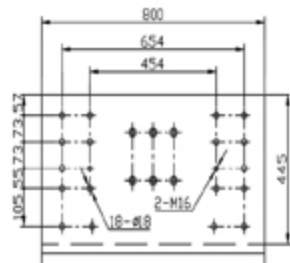
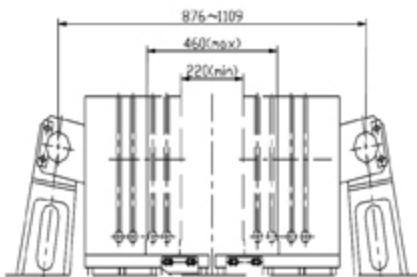
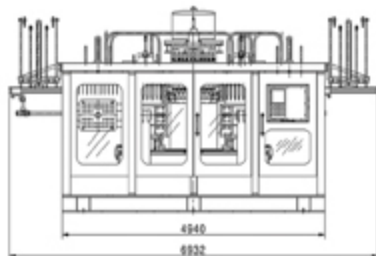
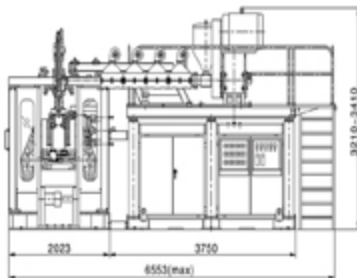
## LIN-90II-TS:

### TECHNICAL DATA

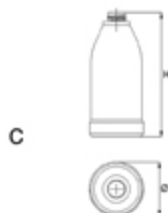
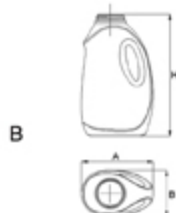
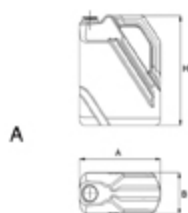
Screw Diameter: 90 mm x2  
 Screw L/D: 24:1  
 Screw Speed: 11-85 rpm  
 Extruding Volume: 50-450 kg/h  
 Extruder Heating: 2x 4 zones  
 Transfer Stroke: 900 mm  
 Clamp Stroke: 120x2  
 Clamp Force: 24.6 Tons  
 Dry Cycle: 4 seconds  
 Parison Programming: 100 Points  
 Water Consumption: 4-6 m<sup>3</sup>/h  
 Air Consumption: 3-4 m<sup>3</sup>/min  
 Net Weight (Approx.): 24 Tons

### POWER CONSUMPTION

Inverter Drive Motor: 55 kW x 2  
 Extruder Heater (PE): 17.6 kW x 2  
 Hydraulic Pump Motor: 55 kW  
 Cooling Motor: 4 kW  
 Die Heater: 23-31.5 kW  
 Max. Consumption: 227-235.7 kW







## LIN-70-TS

Single Head



A			B			C		D	
A	B	H	A	B	H	Ø	H	A	H
280	210	350	280	210	350	210	350	210	350

Double Head - Center Distance : 160



A			B			C		D	
A	B	H	A	B	H	Ø	H	A	H
140	210	350	140	210	350	140	350	140	350

Triple Head - Center Distance : 110



A			B			C		D	
A	B	H	A	B	H	Ø	H	A	H
90	210	350	90	210	350	95	350	90	350

Quad Head - Center Distance : 80



A			B			C		D	
A	B	H	A	B	H	Ø	H	A	H
65	210	350	65	210	350	65	350	65	350

## LIN-90-TS

Double Head - Center Distance: 240



A			B			C		D	
A	B	H	A	B	H	Ø	H	A	H
220	150	300	220	150	300	150	300	150	300

Triple Head - Center Distance: 140



A			B			C		D	
A	B	H	A	B	H	Ø	H	A	H
120	150	300	120	150	300	125	300	120	300

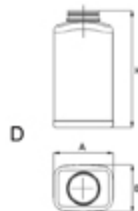
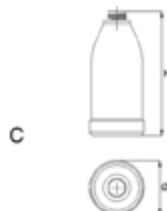
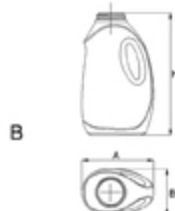
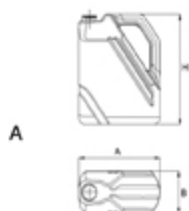
Quad Head - Center Distance: 110



A			B			C		D	
A	B	H	A	B	H	Ø	H	A	H
90	150	300	90	150	300	95	300	90	300

These specifications are for reference only. AKEI reserves the rights to any modifications.





## LIN-100-TS

Double Head - Centre Distance: 240



A			B			C		D	
A	B	H	A	B	H	∅	H	A	H
220	150	330	220	150	330	150	330	150	330

Triple Head - Center Distance: 190



A			B			C		D	
A	B	H	A	B	H	∅	H	A	H
170	150	330	170	150	330	150	330	150	330

Quad Head - Center Distance: 140



A			B			C		D	
A	B	H	A	B	H	∅	H	A	H
120	150	330	120	150	330	125	330	120	330

Six-Way Head - Center Distance: 100



A			B			C		D	
A	B	H	A	B	H	∅	H	A	H
----	----	----	80	150	330	85	330	80	330

## LIN-90II-TS

Triple Head - Center Distance: 240



A			B			C		D	
A	B	H	A	B	H	∅	H	A	H
220	150	330	220	150	330	150	330	150	330

Quad Head - Center Distance: 190



A			B			C		D	
A	B	H	A	B	H	∅	H	A	H
170	150	330	170	150	330	150	330	150	330

6-Way Head - Center Distance: 125



A			B			C		D	
A	B	H	A	B	H	∅	H	A	H
105	150	330	105	150	330	110	330	105	330

8-Way Head - Center Distance: 100



A			B			C		D	
A	B	H	A	B	H	∅	H	A	H
----	----	----	80	150	330	85	330	80	330

10-Way Head - Center Distance: 80



A			B			C		D	
A	B	H	A	B	H	∅	H	A	H
----	----	----	60	150	330	65	330	60	330

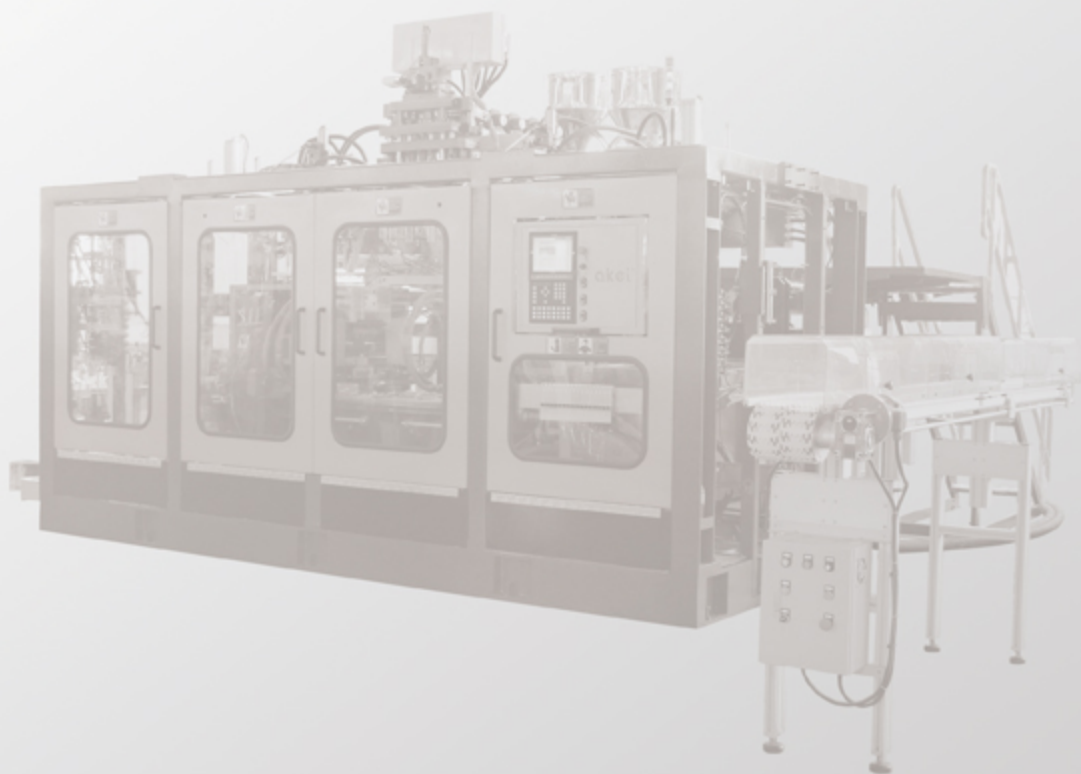
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