

Model R1500 Reciprocator



Description

ITW BGK Finishing Systems reciprocating machines are designed to automatically apply spray coating to either one or both sides of products conveyed on an overhead or flat conveyor systems.

The model R1500 series is designed to operate with a continuously running chain around two fixed hardened sprockets. The unit is furnished with an explosion-proof electric motor coupled to a heavy duty gear reducer. The output sprocket of the reducer drives a heavy duty chain to which a carriage is attached. Two brackets attached to the carriage extend outside the cabinet to accommodate the mounting of a 1" diameter mounting bar for supporting the spray gun assembly. Each reciprocator is supplied with a hose track carrier, which is a flexible device attached to the gun carriage and machine enclosure to hold air and fluid hoses and protect their movement during operation.

Specifications

Orientation	Vertical or Horizontal
Stroke Lengths Available	4', 5', 6', 7', 8', 9', 10' or 11'
Speed	Variable speed up to 300 FPM
Payload	50 pounds (4 guns and hoses)
Motor	1HP, Explosion-proof, 230/460/3Ø/60 Hz, inverter duty

Components

Carriage Assembly

The carriage assembly runs along the tubular structure on urethane guide wheels. The main chain is couple to the carriage assembly by a heavy duty pin that engages the slider block. The slider block runs back and forth as the main chain goes around the sprockets, which creates a smooth reverse motion of the carriage. Mounted to the face of the carriage are two v-blocks which hold the 1" diameter mounting bar.

Gear Reducer

To obtain the design speed range, a gear reducer is used; however, the ratio of reduction is specific to the model of machine. Model R1500 uses a 10:1, this allows for speed up to 300 FPM.

Hose Carrier

A device attached to carriage and machine enclosure to hold air and fluids hoses and guide their path.

Machine Enclosure

Provides physical protection to the operator from drive mechanism and acts as a support structure. Removable covers on the front and the back of the machine permit access to serviceable parts..

Main Chain and Drive Sprockets

The chain between the two (2) main sprockets has a specific number of links, which relate to the machine stroke length and spray controls. Attached to the chain is a heavy duty pin, which engages the carriage assembly. An adjustable motor base is provided to allow for quick chain tension maintenance. *Note: The number of links cannot be changed on this chain.*

A VFD Drive Controller is included with base model!

The VFD drive is a variable speed controller that includes start/stop and speed adjustment with a display of the hertz being applied.

Optional Components

Gun Arm (Horizontal Reciprocators)

The horizontal gun arm allows for the mounting of a 1" diameter mounting bar when the reciprocator is used in horizontal installations.

Gun Bar

Attached to mounting bar, the gun bar has adjustable mounting clamps and a gun mount peg, which allows for adjusting gun position and angles on multiple axes.

Gun Tilt

Gun tilt is a two position fixed limit tilting device on the 1" diameter spray gun bar. An air cylinder is used to rotate the gun bar at each end of the stroke to allow better spray coverage of edge surfaces.

V-Groove Caster Base (Vertical Reciprocators)

The 4" diameter v-groove casters provide ease of machine movement by hand. A foot brake is furnished and the formed tracks provide 85" of travel.

Optional PLC Controls

PLC Control Panel

PLC control panel is designed to allow an operator the adjustment of the following functions:

- Stroke Speed
- Gun-trigger signals
- Skip spray control

Control panel consists of:

1. Nema 12 enclosure (wall mounted)
2. Power requirements (230 VAC, 1-Phase 60HZ)
3. Panel view 300 Operator Interface
4. VFD Speed Controller
5. Booth Fan Interlock
6. Terminal strip for interlock termination with customer signals
7. Photo-eye for part detection
8. Proximity sensor for conveyor travel
9. Micrologix PLC
10. Gun Auto/Off/Test button

Optional Controls

Booth Fan Interlock

The booth fan interlock is a 3-way solenoid valve, which connects the spray gun trigger to the spray booth exhaust fan. It will not allow the spray guns to spray when the exhaust fan is not on.

Optional Spray Controls

PLC Skip Spray Control (Stand Alone)

- Controls when the spray gun sprays parts
- Skip spray control prevents the gun from spraying any missing parts

- Synchronization of conveyor speed with the PLC shift register allows the gun to spray only when a part is present
- Proximity sensor for conveyor travel
- Photo-eye for part detection
- Pre-set gun spray time, adjustable by the Operator Interface Terminal (OIT)

All programming and documentation included.

Control consists of:

1. Nema 12 enclosure
2. Power requirements (115 VAC)
3. Power on indicator light
4. Operator interface for gun triggering adjustments and part tracking adjustments
5. Exhaust fan interlock contact (no exhaust, no spray)
6. Terminal strip for internal/external wiring
7. Controls up to four guns
8. Photo-eye included for part detection
9. Proximity sensor for conveyor travel

Pneumatic Gun Control Panel

- Two or four gun packages
- Used for control of atomizing air and gun trigger
- 60 SCFM (two guns) and 120 SCFM (four gun)

Enclosure consists of:

1. Nema 12 enclosure
2. Atomizing air gauge and regulators
3. Gun trigger solenoids
4. Terminal strip to wire to main control panel
5. Main air manifold
6. Hose and fittings
7. Bulkhead fittings for gun trigger, atomizing air and main air inlet
8. Manual Gun Trigger Switches

Customer to provide:

- Main shut-off valve with lock-out
- Filtered air to main inlet

Models Available

All Model R1500 Reciprocators come standard with a VFD Speed Controller.

Model # R1504	4' Stroke Reciprocator
Model # R1505	5' Stroke Reciprocator
Model # R1506	6' Stroke Reciprocator
Model # R1507	7' Stroke Reciprocator
Model # R1508	8' Stroke Reciprocator
Model # R1509	9' Stroke Reciprocator

Model # R1510 10' Stroke Reciprocator

Model # R1511 11' Stroke Reciprocator

Options

Gun Arm	78-120
Gun Bar	54-380
Gun Tilt	78-150
V-Groove Caster Base	78-1198
Booth Fan Interlock	97-2982
PLC Control Panel 240V 60HZ 1-phase	
PLC Skip Spray Control (Stand Alone) 120V 60HZ 1-phase	
Horizontal-2 post	78-124
Horizontal-4 post (7'6" booth)	78-187
Horizontal-4 post (10' booth)	78-188
Pneumatic Gun Control (two guns)	
Pneumatic Gun Control (four guns)	