

PAGE[®]



ThermoFlo Accessories

Installation & Operation Instructions



*Systems for Development, Production
and Repair of Electronic Assemblies*

PACE Incorporated retains the right to make changes to specifications contained herein at any time, without notice.

Contact your local authorized PACE Distributor or PACE Incorporated to obtain the latest specifications.

The following are registered trademarks and/or servicemarks of PACE Incorporated, Laurel Maryland U.S.A. and may only be used to identify genuine PACE products or services:

AdapTip, Arm-Evac, Cir-Kit, ComForm I, ConducTweez, CRAFT, Dual Path, Flo-D-Sodr, FuseSet, HandiPik, HotSpot, LapFlo, MBT, Micro Portable, MicroChine, MiniChine, Mini-Wave, PACE, Pacenter, Ped-A-Vac, PETS, Pik-Vac, PRC, PRINT, Pro-Evac, Redi-Rak, ResisTweez, SensaTemp, SMR, Snap-Vac, Sodr-Pen, Sodr-X-Tractor, SR-3, SR-4, ST, StripTweez, SwaPlater, ThermoBand, Thermo-Drive, ThermoJet, ThermoPart, ThermoPik, ThermoTweez, Tip-Evac, VisiFilter.

The following are trademarks and/or servicemarks of PACE Incorporated, Laurel Maryland U.S.A. and may only be used to identify genuine PACE products or services:

Auto Off, Cubby-Vac, Datastore, Dust Evac, Fume Scoop, Heat Wave, Lab Evac, PaceLink, PaceNet, Pik & Paste, Pik-Tip, Prep-Set, Pulse Plate, Quiet Flo, SodrLink, Sodrtek, ThermoBond, ThermoFlo, TinSpin, Toolnet, TweezPik, Uni-Frame, V-A-N, Ventur-Evac.



Since 1958, PACE Incorporated has provided advanced technology training in all aspects of hand soldering, rework and repair.

Additional copies of this manual or other PACE literature may be obtained from:

PACE Incorporated
Sales Administration
9893 Brewers Court
Laurel MD 20723-1990

(301) 490 - 9860
(301) 498 - 3252 Fax

MANUAL NO. 5050-0421

REV. A

Table of contents

<i>Title</i>	<i>Page</i>
Introduction	1
Work Platform	2
Installation	2
Operation	3
ThermoFlo Handpiece	4
Installation	4
Operation	5
Standard Board Holder	6
Installation	6
Operation	6
Heat Wave Interface	8
Installation	8
Operation	8
Fiber Optic Lighting Attachment	9
Installation	9
Operation	9
Fume Extraction Ready Attachment	10
Installation	10
Operation	11
Vision Systems	12
Introduction	12
Precision Swivel	12
Installation	12
Operation	13
Lens Vision Attachment	14
Installation	14
Operation	14
Camera Vision Attachment	16
Installation	16
Operation	17

Introduction

This manual will provide you with the information necessary to properly install, operate and maintain all of the available accessories for the PACE ThermoFlo systems.

Detailed installation instructions are provided for each available accessory. Currently available accessories are:

ThermoFlo System	ThermoFlo System Work Platform	Fume Extraction "Ready" Attachment
Heat Wave Preheating System	Fiber Optic Lighting Attachment	Large Board Holder
Lens Vision Attachment	Camera Vision Attachment	Thermocouple Meter

All ThermoFlo accessories are very easy to operate. Very short, easy to understand guidelines are given for the operation of each accessory (except Heat Wave & Large Board Holder). The Heat Wave and Large Board Holder are shipped with manuals specific to that system/accessory only.

Work Platform

Installation

The Work Platform is provided with each ThermoFlo System.

Use the following instructions and accompanying illustrations as a guide to assemble the Work Platform.

1. Place the Base upside down on a work surface and install the 4 Rubber Feet (with built-in screws) at the corners of the Base.
2. Turn the Base over and position as shown.
3. There are 2 Alignment Pins located on the bottom of the Support Arm. Insert the 2 Alignment Pins fully into the 2 Alignment Holes in the Base.
4. Install the 4 Mounting Bolts and Lock Washers. Tighten each bolt to secure the Support Arm to the Base.
5. Insert one end of the supplied Ground Cable into the Base as shown or into either of the 2 grounding holes at the front, right side of the Base.

Operation

Ground Cable

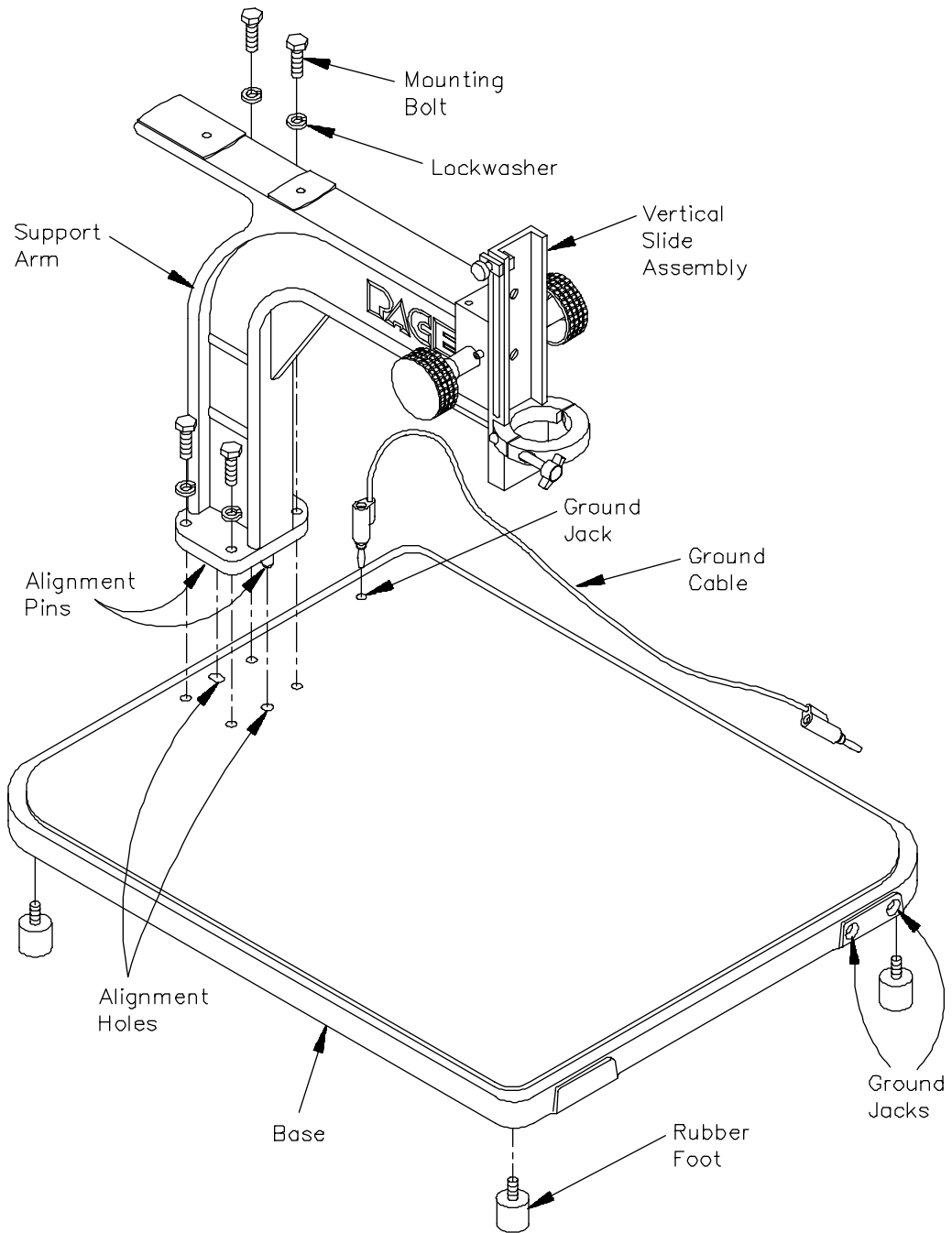
The Ground Cable is supplied to provide a connection to the Work Platform as a part of your static control program.

Slide Assembly

The Vertical Slide Assembly holds the ThermoFlo handpiece in a vertical position for precise component removal and installation operations. The handpiece is installed vertical to the work platform base; the bottom edge of any installed nozzle (except Curved, Single Jet) is horizontal to any PCB (installed on a board holder) on the Work Platform. Refer to the Handpiece Installation procedure to properly install the handpiece.

Simply rotate either of the Vertical Control Knobs to raise or lower an installed ThermoFlo handpiece (with attached nozzle).

Work Platform



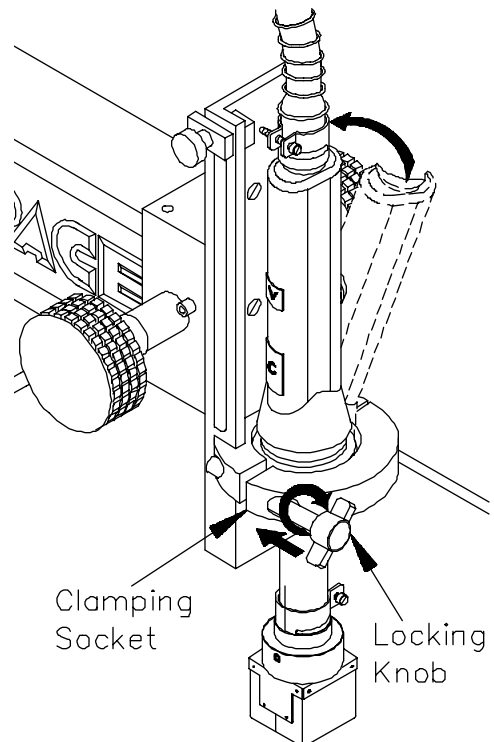
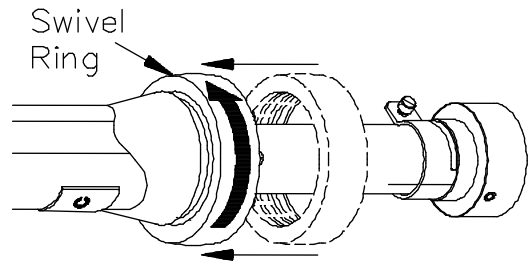
ThermoFlo Handpiece

Installation

NOTE

If the Fiber Optic Lighting Attachment or any of the Vision Attachments (Lens or Camera) have been purchased, they should be installed before performing the following procedure.

1. Unscrew the Plastic Heat Shield (marked "HOT") from the ThermoFlo handpiece and set aside.
2. Install the metal Swivel Ring onto the ThermoFlo handpiece.
3. Turn the Locking Knob counterclockwise several turns to release the Clamping Socket.
4. Pull the Locking Knob forward. The Clamping Socket will swing open at the knob.
5. Place the ThermoFlo handpiece, positioned at an angle with the heater down, through the center of the Clamping Socket.
6. The Clamping Socket and the Swivel Ring (on handpiece) form a ball and socket attachment mechanism. Slide the Swivel Ring into the Clamping Socket.
7. Straighten the ThermoFlo handpiece up into a vertical position. Ensure that the Swivel Ring remains inside the Clamping Socket.
8. Push the Locking Knob and turn clockwise to secure the ThermoFlo handpiece in position.



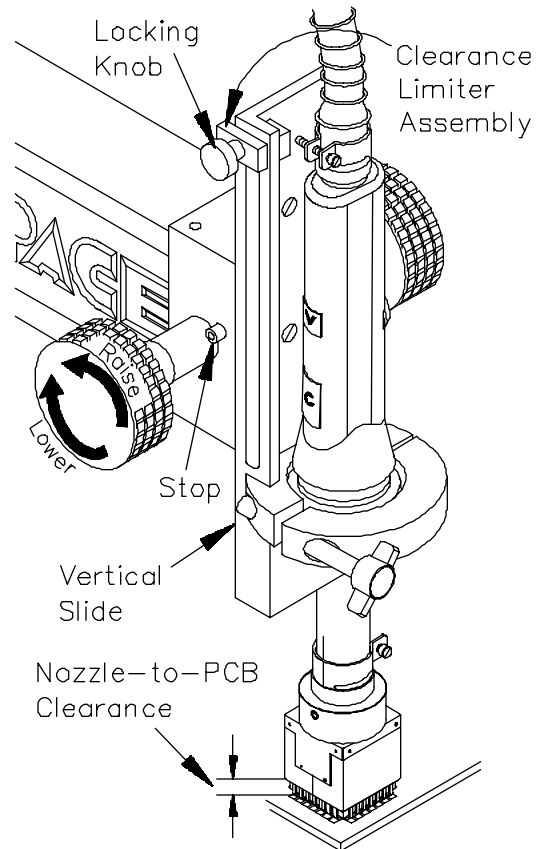
ThermoFlo Handpiece

Operation

The ThermoFlo handpiece can be easily raised or lowered using either of the Height Adjustment Knobs.

To provide repeatable clearance of an attached nozzle assembly relative the the surface of PCB assembly (Nozzle-to-PCB clearance), do the following:

1. Loosen the Locking Knob. The Clearance Limiter Assembly will now fall down against the Stop.
2. Lower the handpiece to the desired distance of Nozzle-to-PCB clearance using the Height Adjustment Knobs.
3. Ensure contact between the Clearance Limiter Assembly and the Stop. Tighten the Clearance Limiter Locking Knob to secure the Clearance Limiter Assembly in position on the Vertical Slide.



Standard Board Holder

Installation

This accessory (part number 6018-0098) is provided with each ThermoFlo System. You can use this accessory to hold your PCB (up to 20.3 cm X 20.3 cm (8" X 8") size) assemblies in position for rework. If you are using a Heat Wave Preheating System, it is not necessary to assemble this accessory; use the board holder on the Heat Wave.

Use the following instructions and accompanying illustrations as a guide to assemble the standard Board Holder.

1. Place the Base (item ⑨) upside down on a work surface and install the 4 Rubber Feet (item ⑩) using the 4 Mounting Screws (item ⑪).
2. Turn the Base over and position as shown.
3. Mount the Large Bracket (item ①) to the left side of the Base (item ⑤) using 2 Mounting Screws (item ②).

NOTE
There are mounting holes at 2 different heights on each of the supplied brackets. Use the holes which provide the correct height for use with your PCB assemblies.

4. Place the Long Holding Clamp (item ④) in position on the Large Bracket (item ①). Secure clamp in position using a Locking Screw (item ③) and Flat Washer (item ⑧).
5. Install the Leveling Screw (item ⑦) Adjust Leveling Screw until its end just touches the bottom of the Long Holding Clamp (item ④).
6. Mount the Small Bracket (item ⑤) to the right side of the Base (item ⑨) using 2 Mounting Screws (item ②).
7. Place the Short Holding Clamp (item ⑥) in position on the Small Bracket (item ⑤). Secure the clamp in position using the Locking Screw (item ③) with Flat Washer (item ⑧).

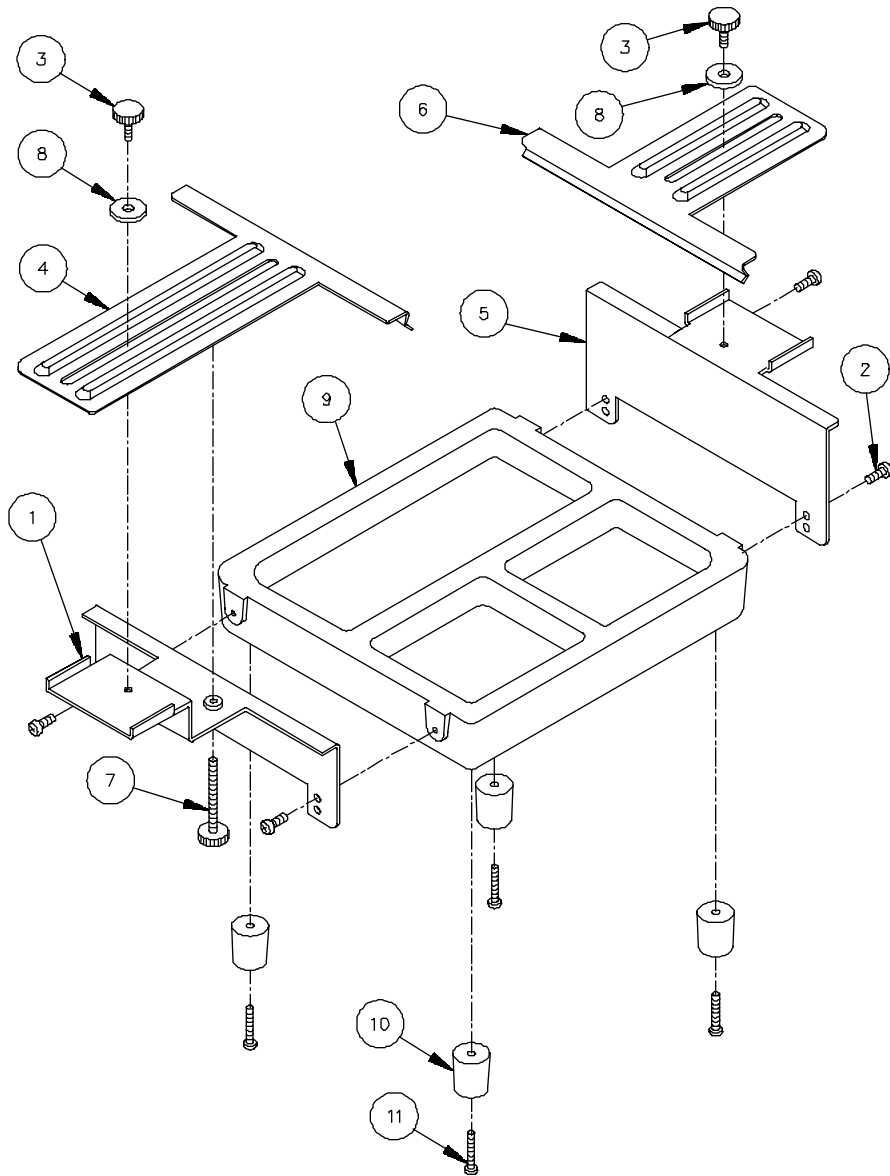
Operation

To install a PCB assembly, simply adjust the holding clamps as necessary, place the PCB in the “V” grooves on the clamps and tighten the Locking Screws to secure in position.

Position the Board Holder with the component rework area directly beneath the ThermoFlo handpiece.

Move the PCB or Board Holder as necessary for proper component-to-nozzle alignment.

Standard Board Holder

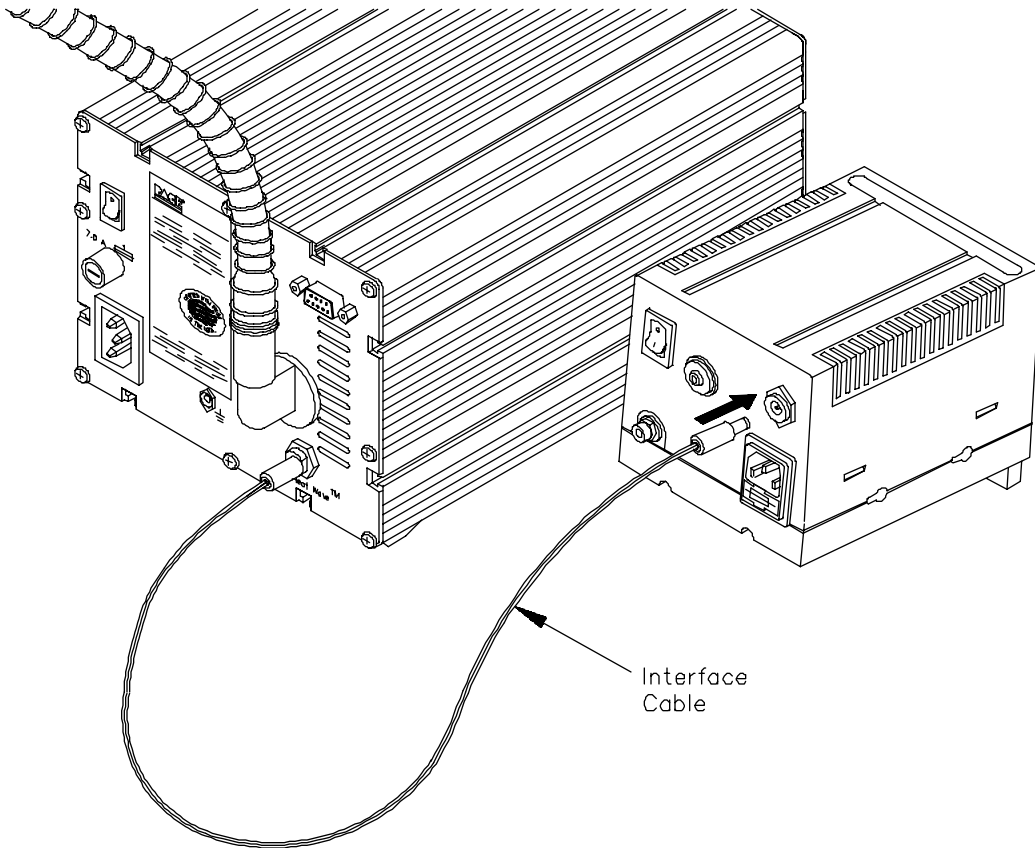


Heat Wave Interface

Installation

The Heat Wave Interface Cable (part number 1332-0187) connects the ThermoFlo Unit to the Heat Wave power source to provide on/off control of the pump assembly in the Heat Wave.

Connect the cable between the Heat Wave connector on the rear panel of the ThermoFlo Unit and the like connector on the rear panel of the Heat Wave power source.



Operation

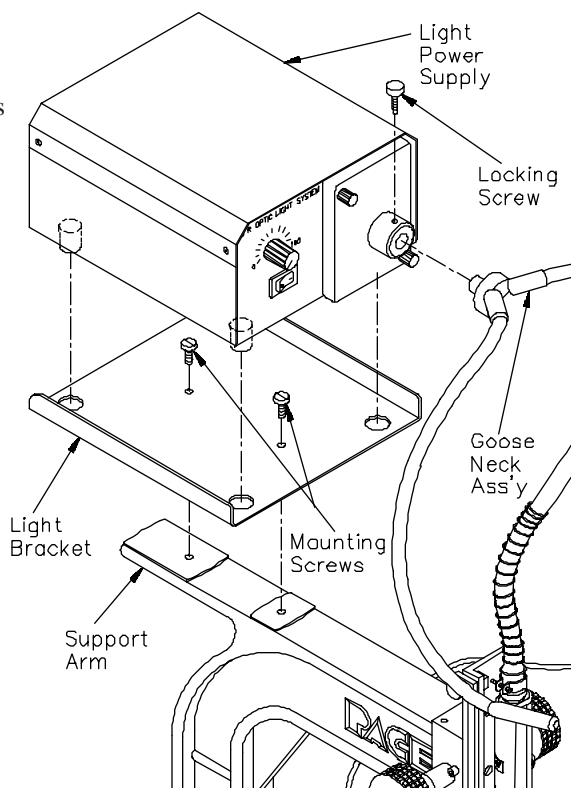
The Heat Wave Preheating System can be used at any time in conjunction with the ThermoFlo but the Heat Wave motor pump is controlled by the ThermoFlo unit in the Program Mode only. The stored parameters of the Profile in use will control activation of the motor pump. The temperature of the Heat Wave is not set or controlled by the ThermoFlo. The temperature must always be set on the Heat Wave power source.

Fiber Optic Lighting Attachment

Installation

Use the following instructions and accompanying illustrations as a guide to assemble the Fiber Optic Lighting Attachment.

1. Orient the Light Bracket as shown on the Support Arm.
2. Install the 2 enclosed Mounting Screws to secure the Light Bracket in position on the Support Arm.
3. Place the Light Power Supply in position on the Light Bracket. The 4 rubber feet on the bottom of the power supply fit in the punched holes at the corners of the bracket.
4. Install the Goose Neck Assembly onto the Light Power Supply as shown. Secure in position with the Locking Screw.
5. Plug the female end of the enclosed power cord into the power receptacle on the rear panel of the Light Power Source.
6. Plug the male end of the power cord into the house AC supply.

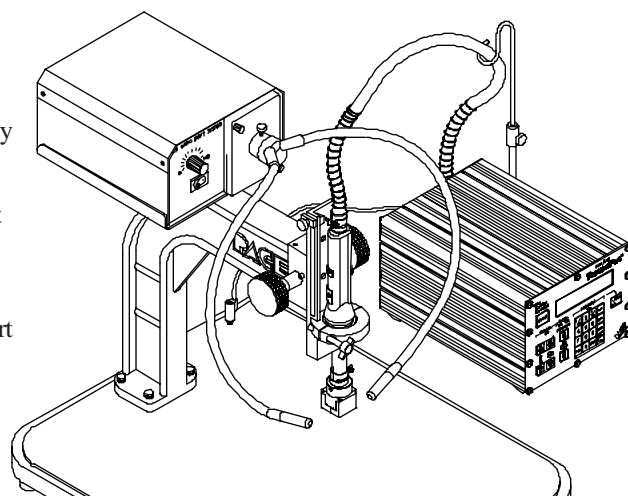


Operation

1. Turn the power switch (on Light Power Supply front panel) to the On position.
2. Position both necks of the Goose Neck Assembly for best application of light to the workpiece.
3. Adjust the light intensity control knob (on Light Power Supply front panel) for best light brightness.

Replacement Lamp (Light Power Supply) - PACE Part Number 1165-0027

For complete information on operation, servicing and replacement parts of the VL405 Light Power Supply, refer to the enclosed Operation Manual.



Fume Extraction Ready Attachment

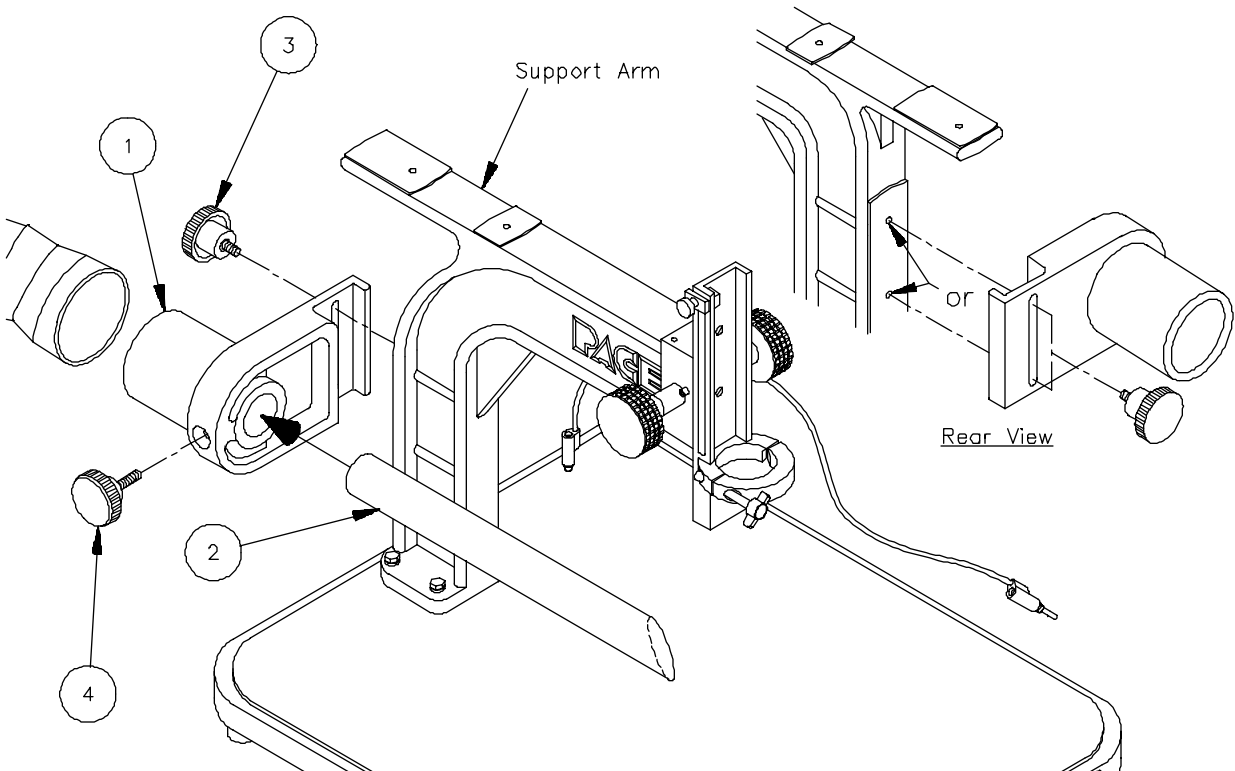
Installation

This Kit (part number 6018-0105) allows the user to easily connect a 7.6mm (3 inch) fume extraction hose to the Work Platform. Use the following instructions and accompanying illustrations as a guide to assemble the Fume Extraction Ready Attachment.

1. Install the Hose Connector (item ①) onto the Support Arm as shown. Install the Height Locking Knob (item ③, the shortest of the 2 knobs supplied) through the slot in the Hose Connector and into either of the 2 mounting holes in the Support Arm (see Rear View on illustration). Tighten the Height Locking Knob (item ③) to secure the Hose Connector in position.

NOTE

The 2 mounting holes offer the user a wide range of height adjustment. For lower height adjustments, use the lower mounting hole; for greater height requirements, use the upper mounting hole.

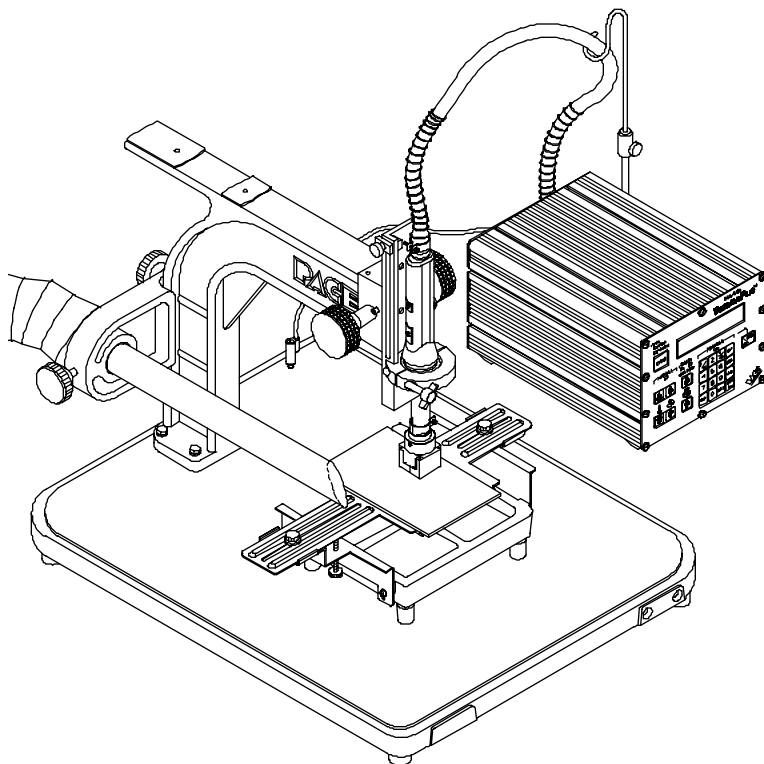


Fume Extraction Ready Attachment

2. Install the Tube Locking Knob (item ④) loosely into its mounting hole.
3. Slide the straight end of the Tube (item ②) into its mounting hole on the Hose Connector.
4. Adjust the Tube (item ②) in position where the straight end is flush with the rear of the Hose Connector (item ①) and the angled end is vertical to the Work Platform.
5. Tighten the Tube Locking Knob (item ④) to secure the Tube (item ②) in position.
6. Connect a 7.6mm (3 inch) diameter, flexible air hose (not supplied) between the Hose Connector (item ①) and your fume extraction system.

Operation

1. Place a PCB assembly (mounted on board holder or Heat Wave) in position on the work platform.
2. Adjust the position of the Tube with its angled end aligned next to and facing the PCB.
3. Position the height of the Tube slightly above the PCB by adjusting the height of the Hose Connector.
4. Reposition the Tube as necessary during rework operations to provide optimal fume extraction.



Vision Systems

Introduction

The following procedures detail the steps required to install and operate any of the ThermoFlo vision accessories. The Precision Swivel is supplied with each vision system purchased. Install the Precision Swivel and then install your Lens Vision or Camera Vision Attachment using the applicable procedure.

Precision Swivel

Installation

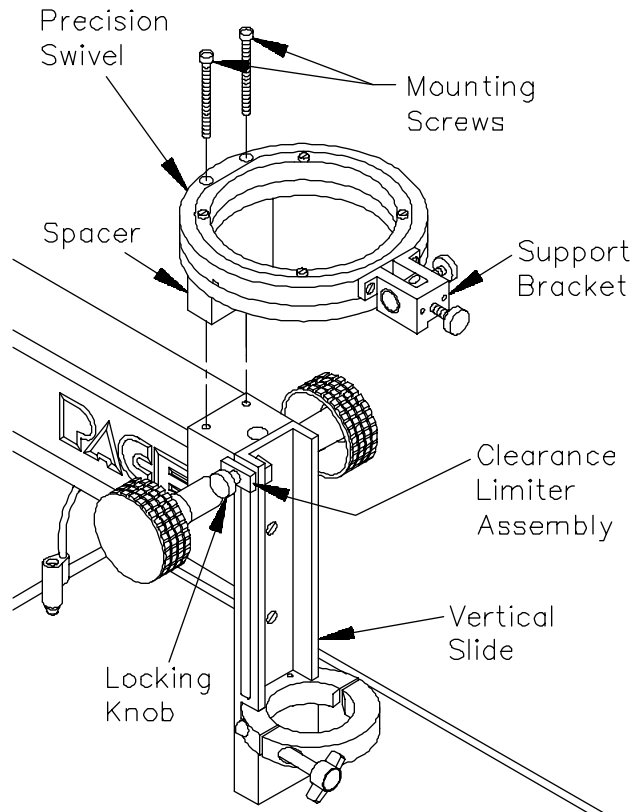
Installation of this accessory is required before installing a Lens Vision or Camera Vision Attachment. . Use the following instructions and accompanying illustrations as a guide to install the Precision Swivel.

1. The Precision Swivel is supplied with its 2 Mounting Screws secured with 2 hex nuts to hold the Spacer in place during shipment. Remove the 2 hex nuts and hold the Spacer, Precision Swivel and Mounting Screws together.
2. Ensure that the Support Bracket is positioned as shown, opposite (180° from) the Mounting Screws. If not, turn the Precision Swivel to place the Support Bracket in the proper position.
3. Place the Precision Swivel (with Spacer) in position on the Vertical Slide as shown with the 2 Mounting Screws aligned with the 2 mounting holes on the Vertical Slide.
4. Insert the 2 Mounting Screws into the 2 mounting holes on the Vertical Slide. Tighten the screws to secure the Precision Swivel on the Vertical Slide.
5. Move the Vertical Slide up and down through its full range of travel to ensure free movement. If the Clearance Limiter Assembly Locking Knob hits the Precision Swivel, loosen the 2 Mounting Screws and align the Precision Swivel to clear the Locking Knob. Tighten Mounting Screws to secure in position.

Operation

The Precision Swivel allows the Support Bracket (with attached Vision accessory) to be rotated 180° around the work. Spring detents at 0°, 90° and 180° provide quick reference stops.

To position the attached Vision accessory, simply grasp the Support Bracket or accessory and move left or right (in an arc) as desired.



Vision Systems

Lens Vision Attachment

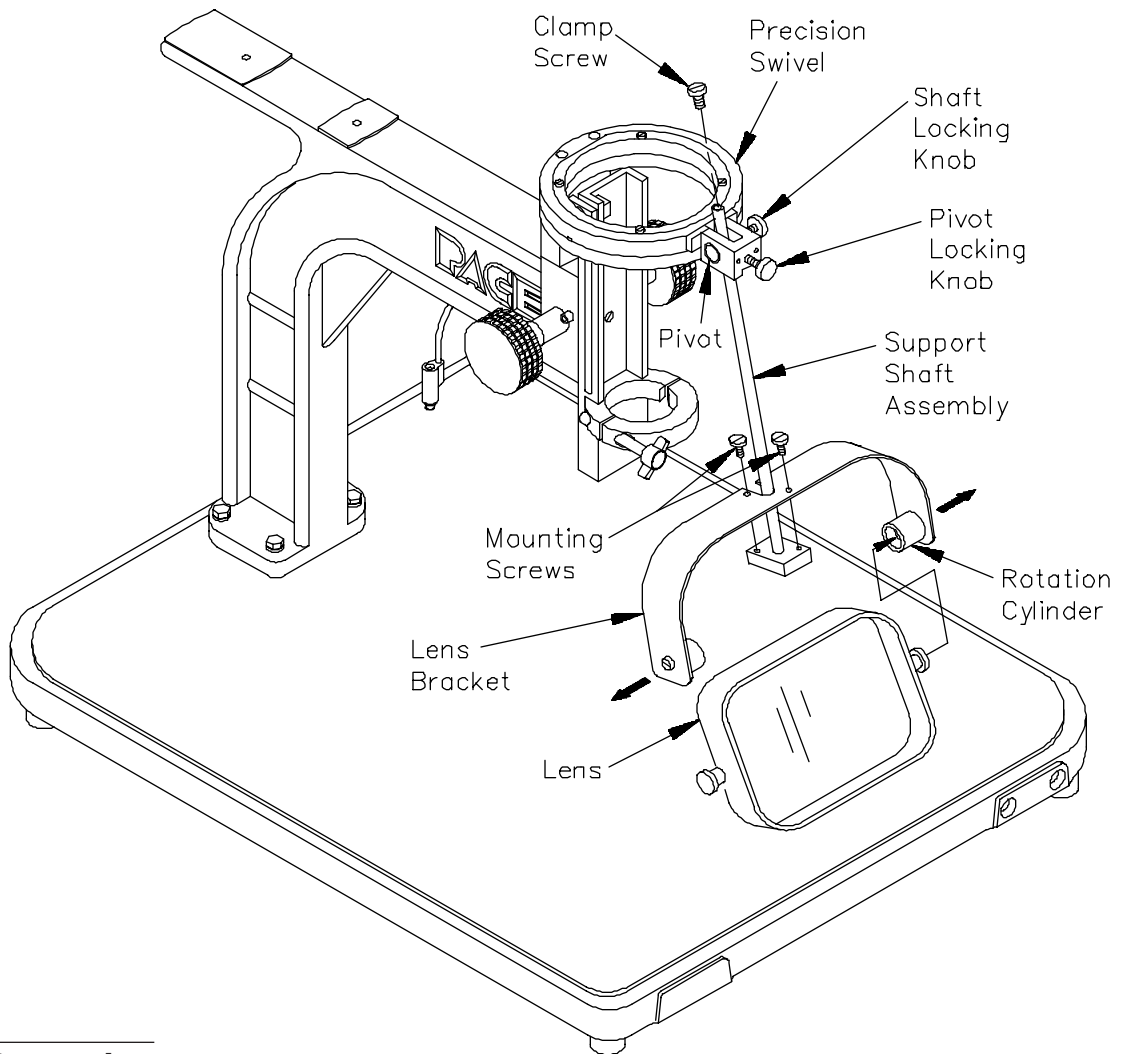
Installation

Use the following instructions and accompanying illustrations as a guide to install the Lens Vision Attachment, part number 6018-0104.

1. Remove the Clamp Screw from the end of the Support Shaft Assembly.
2. Hold the Support Shaft Assembly as shown with the flat portion of the rod on the right side. Insert the rod end of the Support Shaft Assembly up through the hole in the Pivot.
3. Tighten the Shaft Locking Knob to secure the Support Shaft Assembly in position.
4. Install the Clamp Screw (removed in step 3) onto the end of the Shaft Support Assembly.
5. Position the Lens Bracket on the Support Shaft Assembly as shown with the holes in the bracket aligned with the mounting holes in the Support Shaft Assembly.
6. Secure the Lens Bracket to the Support Shaft Assembly as shown using the 2 Mounting Screws.
7. Place the Lens in position on the Lens Bracket in the following manner:
 - a) Position the Lens as shown with the Lens directly beneath the Lens Bracket.

NOTE
To ease installation of the Lens, you may wish to loosen the Shaft Locking Knob, raise the Support Shaft Assembly (with attached Lens Bracket) and secure in position by tightening the Shaft Locking Knob.

- b) Place one of the rotation knobs (on ends of the Lens) into one of the Rotation Cylinders on the Lens Bracket.
- c) Gently pull the second Rotation Cylinder out slightly and place the second Lens rotation knob in the free cylinder.
- d) Release the Lens Bracket. The bracket will now spring back together to hold the Lens in position.



Operation

Adjust the Lens to the best height , distance and angle for best viewing using the following guidelines.

- Height - To adjust height, loosen the Shaft Locking Knob. Raise or lower Lens and lock in position by tightening the Shaft Locking Knob.
- Distance - To adjust distance, loosen the Pivot Locking Knob. Move the Lens in or out and lock in position by tightening the Pivot Locking Knob.
- Angle - To adjust angle, simply move the angle of the Lens in the Lens Bracket for best viewing.

Vision Systems

Camera Vision Attachment

Installation

Use the following instructions and accompanying illustrations as a guide to install the Camera Vision Attachment, part number 6018-0102 (NTSC) or 6018-0103 (PAL).

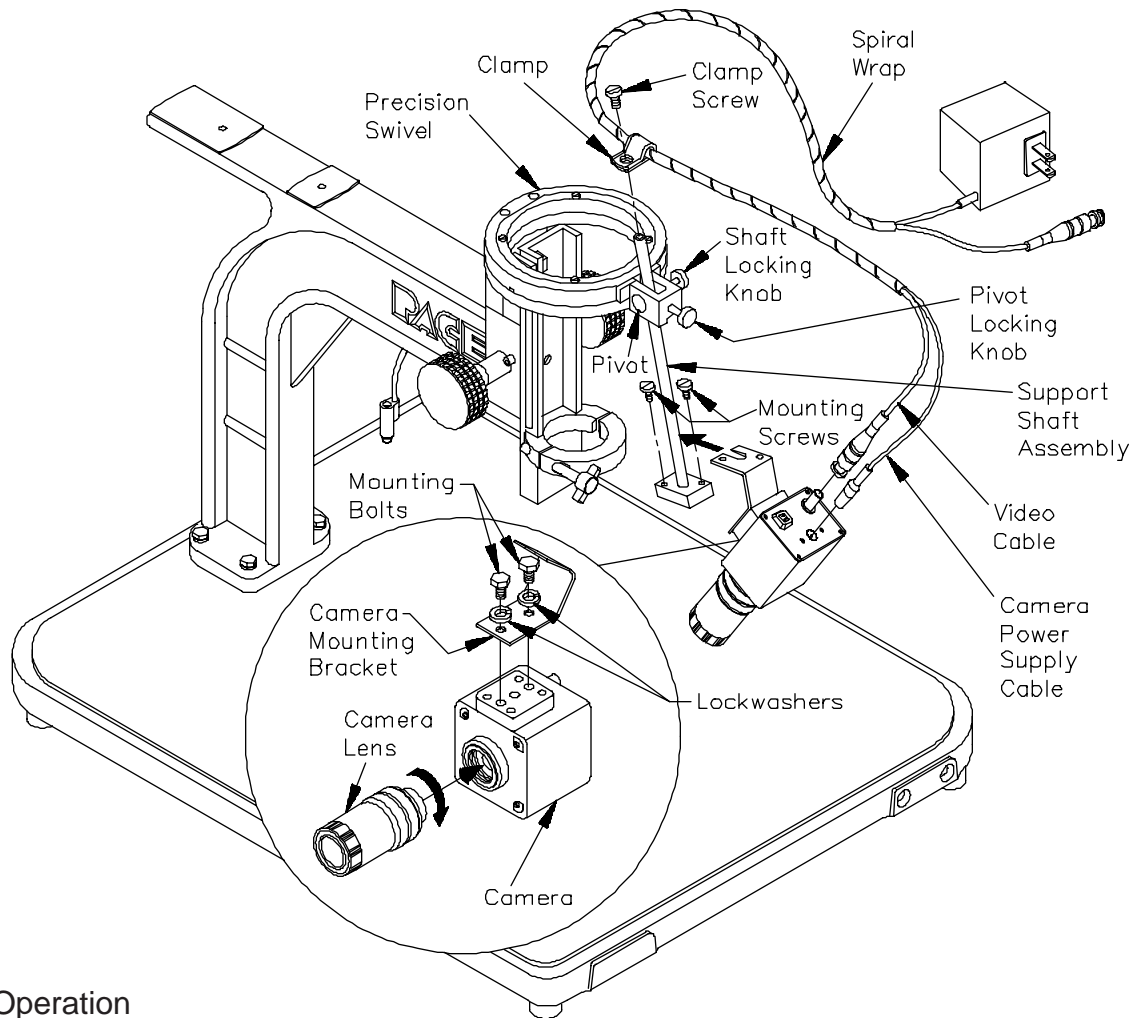
1. Position the Camera Mounting Bracket on the Camera as shown. Secure in position using the 2 hex head Mounting Bolts and Lockwashers.
2. Screw the Camera Lens onto the Camera.
3. Remove the Clamp Screw from the end of the Support Shaft Assembly.
4. Hold the Support Shaft Assembly with the flat portion of the rod on the right side. Insert the rod end of the Support Shaft Assembly up through the hole in the Pivot.
5. Tighten the Shaft Locking Knob to secure the Support Shaft Assembly in position.
6. Position the Camera (with Camera Mounting Bracket) on the Support Shaft Assembly as shown with the holes in the Camera Mounting Bracket aligned with the mounting holes in the Support Shaft Assembly.
7. Insert the 2 enclosed Mounting Screws through the Camera Mounting Bracket and into the mounting holes on the Support Shaft Assembly. Tighten the screws to secure the Camera in position.
8. Plug one end of the Video Cable into the video connector at the rear of the Camera.
9. Plug the free end of the Video Cable into your video monitor. PACE does not provide a monitor.

NOTE

A Camera Power Supply is provided with the NTSC system (part number 6018-0102); a supply is not provided with the PAL version (part number 6018-0103). When purchasing a Camera Power Supply for a PAL version, it must comply with the following requirements:

12 V DC Output, 500ma. Current Rating
Cable terminates with Mini-Plug, 5.5mm O.D., 2.1mm I.D., Center Positive

10. Plug the Camera Power Supply cable mini-plug into the power connector at the rear of the Camera.
11. Wrap the supplied length of plastic Spiral Wrap around both the Video and Camera Power Supply Cables. Begin at a point approximately 10.2cm (4 inches) from the Camera connections.
12. Place the Clamp over the cables & Spiral Wrap as shown.
13. Install the Clamp Screw (removed in step 3) through the Clamp and into the end of the Shaft Support Assembly. Do not tighten the screw.
14. Adjust the cables and Spiral Wrap for best use. Rotate the Camera around the Precision Swivel to ensure that dress of cables allows free movement. Tighten Clamp Screw to secure cables in position.



Operation

Adjust the Camera for your application using the following guidelines.

Height - To adjust height, loosen the Shaft Locking Knob. Raise or lower Camera and lock in position by tightening the Shaft Locking Knob.

Distance - To adjust distance, loosen the Pivot Locking Knob. Move the Camera in or out and lock in position by tightening the Pivot Locking Knob.

Angle - To adjust angle, simply move the Camera in an arc around the Precision Swivel.

Focus - The Camera has a built-in automatic focus control.

Lens - A Zoom control is located at the end of the Lens and an Aperture control is located closest to the Camera body. Adjust these controls as necessary for best viewing.