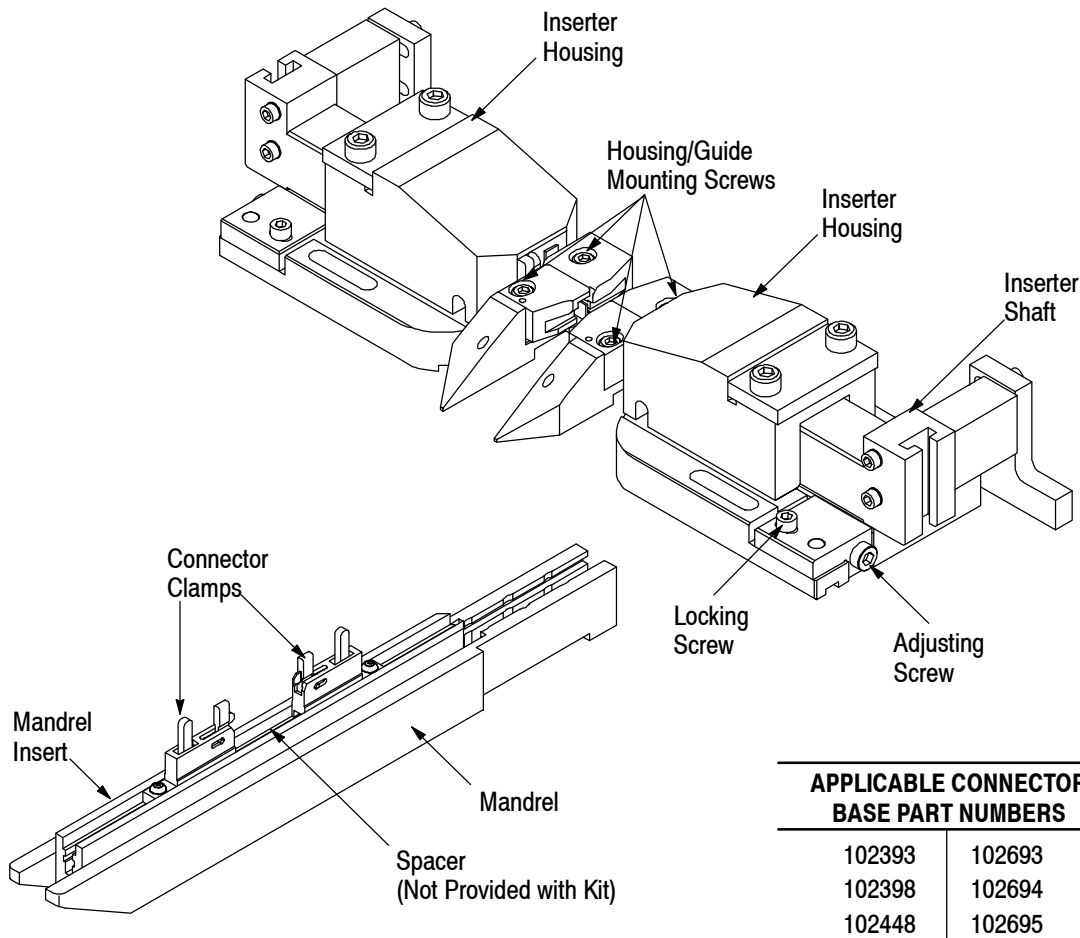


Tooling Kit 1-762661-0



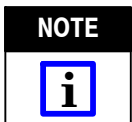
APPLICABLE CONNECTOR BASE PART NUMBERS	
102393	102693
102398	102694
102448	102695

Figure 1

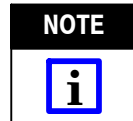
1. INTRODUCTION

Tooling Kit 1-762661-0 designed to be used in CHAMPOMATOR* 2.5 Bench Terminating Machine to apply discrete wire cable to the AMPMODU* MT connectors listed in Figure 1. For detailed information on the operation of the CHAMPOMATOR 2.5 Bench Terminating Machine, refer to Customer Manual 409-5786, which is supplied with the machine.

Read this instruction sheet thoroughly before using the tooling kit.

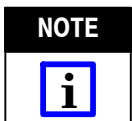


These instructions are supplied in the documentation package. Make sure to retain all material in the documentation package for reference.



All dimensions on this instruction sheet are in metric units [with U. S. customary units in brackets]. Figures are for identification only and are not drawn to scale.

Reasons for reissue of this instruction sheet are provided in Section 6, REVISION SUMMARY.




Several kits, not supplied with the machine or the tooling kit, are required for proper use of the machine. For detailed information on these kits, call TOOLING ASSISTANCE CENTER at the bottom of this page.


2. DESCRIPTION

The tooling kit consists of two inserters, a mandrel, a mandrel insert, and two connector clamps. The mandrel holds the mandrel insert. The mandrel insert positions the connector, which is held in place by a spacer and two connector clamps. The spacer, available separately (refer to Figure 2 for part numbers), is used to locate the connector clamps for proper positioning of the connector. A different spacer is required for each connector size.

A variety of setup gages is available for adjusting the inserters for the desired application (refer to Figure 3 for part numbers).


NOTE
 The maximum wire insulation diameter is 1.27 mm [.050 in.] for these connectors.

During machine operation, the operator selects the proper wire(s) and moves the wire(s) down to the proper side of the mandrel. As each wire is brought into the respective inserter wire receiving slot, the associated sensor is triggered. When both sensors are triggered, the air cylinder on the appropriate inserter is fired, terminating the respective wire.


NOTE
 When only one wire is being terminated, only one air cylinder is fired when the respective sensor is triggered.

When the air cylinder is fired, it pushes the inserter forward, which in turn pushes the wire into the contact. As the wire is inserted, the inserter trims the wire to the correct length. The air cylinder then retracts the inserter, permitting the carriage to move to the next connector position.

3. INSTALLATION PROCEDURE

NOTE
 It may be necessary to open or remove machine covers to perform the following procedures. Re-install all covers before operating the machine.

3.1. Mandrel

NOTE
 All inserters **MUST** be removed prior to mounting or removing the mandrel.

The mandrel is held in place by two hex head cap screws. Refer to Figure 4. To mount the mandrel, proceed as follows:

1. Make sure that the two mounting screws are removed from the mandrel mounting area of the machine.
2. Place the mandrel on the machine, with the connector end of the mandrel facing outward. Align the mounting holes on the mandrel with the threaded mounting holes on the machine.
3. Insert the mounting screws through the mandrel, and into the machine, then evenly tighten the screws with a ⁵/₃₂-in. hex wrench.

CONNECTOR POSITION	SPACER
6	854028-1
8	854028-2
10	854028-3
12	854028-4
14	854028-5
16	854028-6
18	854028-7
20	854028-8
22	854028-9
24	1-854028-0
26	1-854028-1
28	1-854028-2
30	1-854028-3
32	1-854028-4
34	1-854028-5
40	1-854028-6
50	1-854028-7
60	1-854028-8
64	1-854028-9

Figure 2

WIRE INSULATION DIAMETER RANGE	SETUP GAGE
0.51-0.56 [.020-.022]	763382-1
0.58-0.64 [.023-.025]	763382-2
0.66-0.71 [.026-.028]	763382-3
0.74-0.79 [.029-.031]	763382-4
0.81-0.89 [.032-.035]	763382-5
0.91-0.99 [.036-.039]	763382-6
1.02-1.09 [.040-.043]	763382-7
1.12-1.22 [.044-.048]	763382-8
1.24-1.27 [.049-.050]	763382-9

Figure 3

3.2. Inserters

Each inserter is positioned with two alignment pins, and is held in place by two hex head cap screws. Refer to Figures 4 and 5. To install the inserters, proceed as follows:

1. Make sure that the mounting screws are removed from the carriage surface.
2. Position each inserter so that the ram on the air cylinder engages the inserter shaft, as shown in Figure 5. Locate the inserter over the two alignment pins (refer to Figure 4).

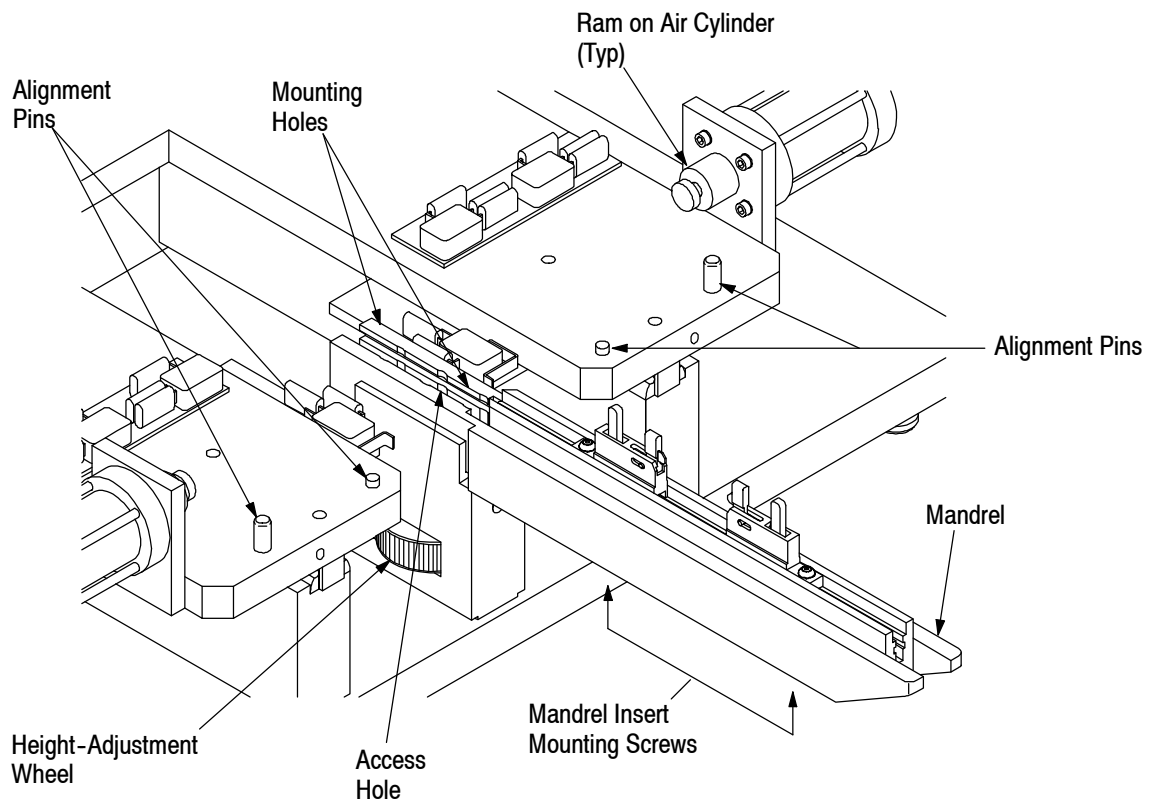


Figure 4

3. Insert, but DO NOT tighten, the two mounting screws for each inserter.

4. Push the inserters toward the mandrel, then tighten the mounting screws with a $\frac{5}{32}$ -in. hex wrench.

3.3. Mandrel Insert

The mandrel insert is held in place by two hex head cap screws, which are inserted through the bottom of the mandrel into the insert. Refer to Figure 4. The screws can be installed and removed by using a $\frac{5}{32}$ -in. hex wrench.

3.4. Connector Spacer

The spacer is held in place with a single hex head cap screw, which is inserted through the bottom of the mandrel and mandrel insert, and into the spacer. Refer to Figure 5. The screw can be installed and removed by using a $\frac{3}{32}$ -in. hex wrench.

3.5. Cable Clamp

For information on installing and adjusting the cable clamp, refer to the instructions supplied with the cable clamp.

4. TOOLING ADJUSTMENTS

NOTE



It may be necessary to open or remove machine covers to perform the following procedures. Re-install all covers before operating the machine.

DANGER



DO NOT make adjustments to the machine or the inserter package while the machine is operational. Disable the machine to prevent it from moving while the adjustments are being made.

4.1. Connector/Mandrel Height

To ensure optimum termination, the mandrel height must be properly set.

A. Check Mandrel Height

1. Turn off the power to the machine and disconnect the machine air supply.
2. Place an unloaded connector into the fixture, and close the connector clamps.
3. Manually pull out the machine carriage assembly until the inserters align with the connector contact area.

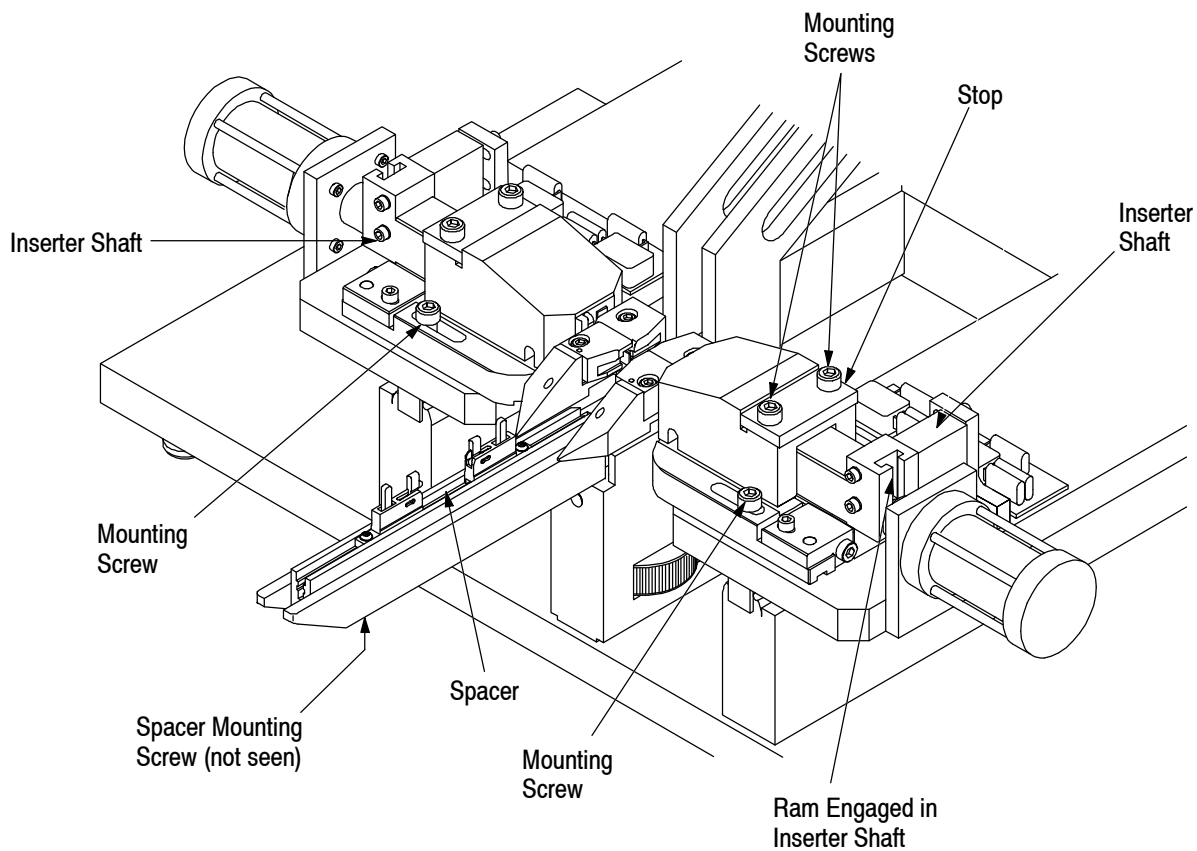


Figure 5

4. Manually extend the inserter tips until they are close enough to the contacts to visually determine the inserter-to-contact alignment. If the inserter tips are not properly aligned with the contacts, as shown in Figure 6, the mandrel height must be adjusted.

4. When the correct height has been reached, tighten the locking screw, manually retract the inserters, return the carriage to its initial position, restore the machine air supply, turn on the power to the machine, and remove the connector.

B. Adjust Mandrel Height

1. Ensure that the power to the machine is off and disconnect the machine air supply is disconnected.
2. Locate the locking screw, which is reached through an access hole in the back of the mandrel. Refer to Figure 6. Loosen the locking screw by turning the screw COUNTERCLOCKWISE with a 5/32-in. hex wrench.
3. Turn the mandrel height adjustment wheel to bring the mandrel to the correct height. Turning the wheel CLOCKWISE raises the mandrel, and turning the wheel COUNTERCLOCKWISE lowers the mandrel.



DO NOT raise or lower the mandrel while the inserters are extended or damage to the inserters may result. Manually retract the inserters BEFORE changing the mandrel height.

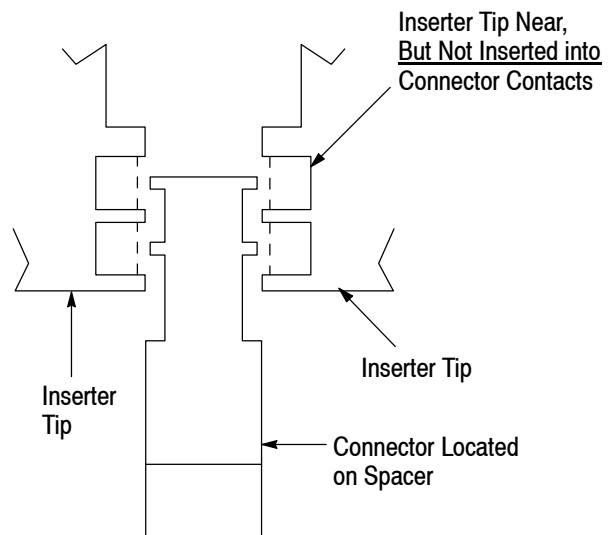


Figure 6

4.2. Inserter Clearance

Each inserter can also be adjusted to vary the clearance between the connector and the end of the inserter. To adjust the clearance, refer to Figure 1 and proceed as follows:

1. Using a $5/32$ -in. hex wrench, loosen, but do not remove, the mounting screws on each inserter assembly.
2. Using a $7/64$ -in. hex wrench, loosen, but do not remove, the locking screw on the top of the base plate of the inserter.
3. Using a $9/64$ -in. hex wrench, turn the adjusting screw on the back of the inserter to adjust the clearance. Turn the screw **CLOCKWISE** to increase the clearance, and **COUNTER-CLOCKWISE** to decrease the clearance.
4. Tighten the locking screw with a $7/64$ -in. hex wrench.
5. Tighten the mounting screws with a $5/32$ -in. hex wrench.

NOTE



The nominal clearance between the end of the inserter package and the end of the connector contacts is 0.38 mm [.015 in.].

4.3. Insertion Depth

The length of travel of the inserter ram may be adjusted. Normally, the inserters will not require this adjustment unless the insulation diameter is changed. To adjust the depth, refer to Figure 5 and proceed as follows:

1. Using a $9/64$ -in. hex wrench, remove the two stop-mounting screws and remove the stop from the inserter package.
2. Determine the stop dimension from the marking on the top of the stop.

NOTE



Each stop is designed with a 0.13-mm [.005-in.] step. For example, the 19.05-mm [.750-in.] stop includes a 18.92-mm [.745-in.] section and a 19.05-mm [.750-in.] section.

3. Measure the insulation diameter of the wire being used, then measure the insulation diameter of the new wire to be used.
4. Determine the difference between the insulation diameters, then subtract one half of this difference. Use the resulting number to determine the dimension of the new stop (add the figure to the old stop dimension if the insulation diameter is increasing, subtract if the diameter is decreasing).

5. Place the correct stop onto the inserter package and install the stop-mounting screws.
6. Repeat these steps for the other inserter.

4.4. Changing the Spacer

If another connector size is to be used, the spacer can be changed as follows:

1. Using a $1/8$ -in. hex wrench, loosen, but do not remove, the locking screws for the connector clamps and slide both clamps away from the center of the connector spacer area.
2. Locate the spacer mounting screw. Using a $3/32$ -in. hex wrench, loosen and remove the screw.
3. Remove the spacer, and replace it with the correct spacer for the connector size to be used (refer to Figure 2 for part number).
4. Insert and tighten the spacer mounting screw.
5. Replace the connector clamps and tighten their respective locking screws.
6. Using the machine control module, adjust the machine inserter offset as required for proper termination.

4.5. Adjusting Wire Guides for Wire Insulation Diameter

The wire guides can be adjusted to accept various wire insulation diameters. To adjust the wire guides, refer to Figure 1, and proceed as follows:

1. Remove the inserter from the machine.
2. Remove the inserter housing from the inserter assembly.
3. Replace the inserter tip with the appropriate setup gage (refer to Figure 3 for part number).
4. Using a $7/64$ -in. hex wrench, loosen the housing/guide mounting screws.
5. Place the inserter housing in the inserter assembly.
6. Move the housing and guide until they touch the setup gage. Tighten the mounting screws with a $7/64$ -in. hex wrench.
7. Remove the inserter housing.
8. Replace the setup gage with the inserter tip.
9. Place the inserter housing into the inserter package.
10. Install the inserter back onto the machine.

NOTE



For additional information on adjusting the wire guides, contact your Representative for assistance.

5. REPLACEMENT PARTS

Figure 7 lists the items that are recommended as either expendable tooling or spare tooling. Expendable tooling, which includes items that are subject to wear, should be inspected regularly and replaced, if necessary. Recommended spare tooling includes items that should be stocked to prevent machine downtime in the event that they become damaged. Refer to the Customer Drawing supplied with the tooling for location of these items.

EXPENDABLE TOOLING	
PART NUMBER	DESCRIPTION
764319-1	Inserter Tip

RECOMMENDED SPARE TOOLING	
PART NUMBER	DESCRIPTION
761786-1	Lower Shear

Figure 7

6. REVISION SUMMARY

Revisions to this instruction sheet include:

- Updated instruction sheet to corporate requirements
- Changed call-outs in Figure 1 from “inserter housing” to “inserter shaft” and “inserter” to “inserter housing”