

ASQAW0201 – TAK/PMTAK Assembly Instruction

Issue 3

Issue	Description	Author	Content Approval	Quality Approval
2	Inclusion of angled boots	N. Hawkins	M. Paul – 25/11/2020	S. Renfrey – 26/11/2020
3	See Appendix for details	N. Hawkins	M. Paul – 30/11/2020	S. Renfrey – 30/11/2020

Scope:

Content:

This Document describes the procedure to be used when installing heat shrink screened kits (**TAK/PMTAK series**) onto final harness assemble builds.

Equipment:

- Screened Adaptor Kit supplied with the following items: -
 - Abrasive Paper
 - Cleaning Tissue
 - Packing Sleeve

Additional items required for assembly: -

- Dry Tissue
- Heat Gun (CV-1981) capable of a temperature range of 230° to 250°
- Suitable Reflector (*PR24 or 26*)
- Heat Resistant Gloves
- Safety Glasses

Health and Safety:

Adhere to all applicable law, codes and regulations including but not limited to those relating to safe working practices.

The installation should be carried out in a well-ventilated area. Always wear heat resistant safety gloves when handling hot plastics and adhesives. The use of suitable protective gloves and barrier cream is recommended when using solvents. Avoid prolonged repeated skin contact with solvents and always wash hands after using solvents. Care should be taken to wear safety glasses when using and handling chemical solvents. If eyes do become contaminated, flush with water and obtain medical assistance immediately.

Always ensure all equipment is calibrated before use.

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Procedure:

Straight Screened Adaptor Kit Assembly Instructions

1. Slide the Screened Adaptor Kit onto the cable with packing sleeve, push it down the cable so you have room to work with the cable jacket, braid and conductors.
2. Cut back the cable jacket and braid sufficiently to allow termination of the conductors to the connector. The recommended lengths depend on the entry size/boot size and are given in table 1, dimension L. Allow an extra 15mm if service loops are required.

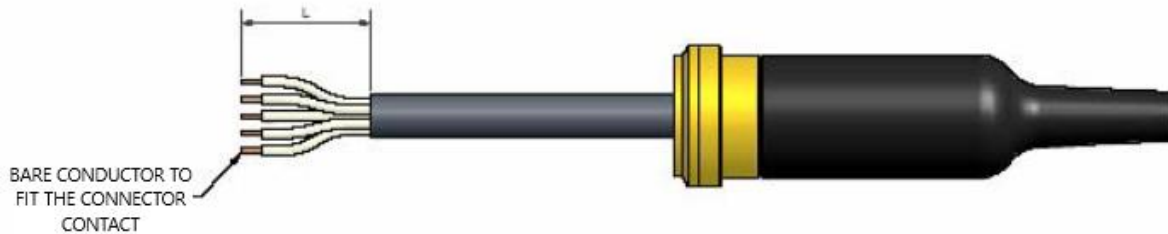


Table 1 – TAK “L” dim Length

ENTRY SIZE	L (mm)
05	35
08	45
10	45
12	45
14	55
16	55
20	65
24	75

3. Terminate the conductors to the connector in the appropriate way.

- Slide the Screened Adaptor Kit up the cable and temporarily secure it to the connector. Mark the cable where the heat shrink boot ends.



- Release the Screened Adaptor Kit and slide it back down the cable. Make a second mark towards the connector end from the initial mark made in step 4, at a distance specified in table 2, dimension A. Strip back the cable to this second mark to expose the braid.

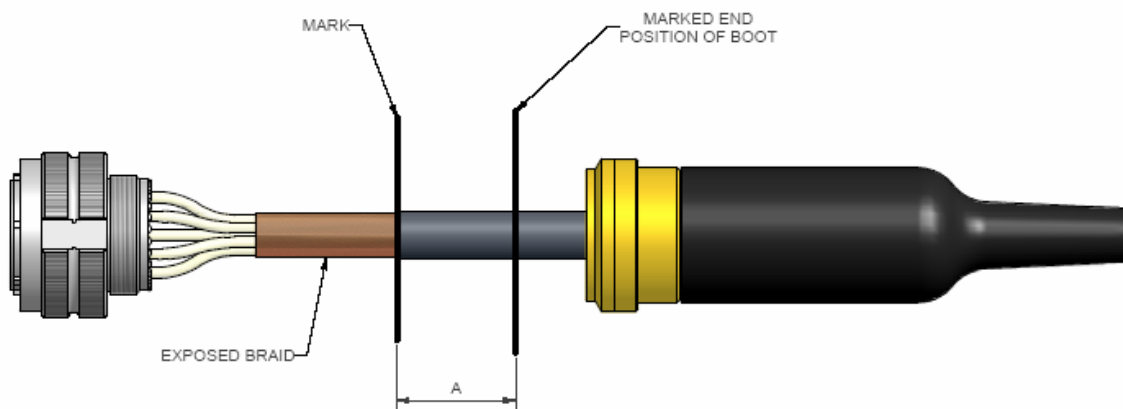
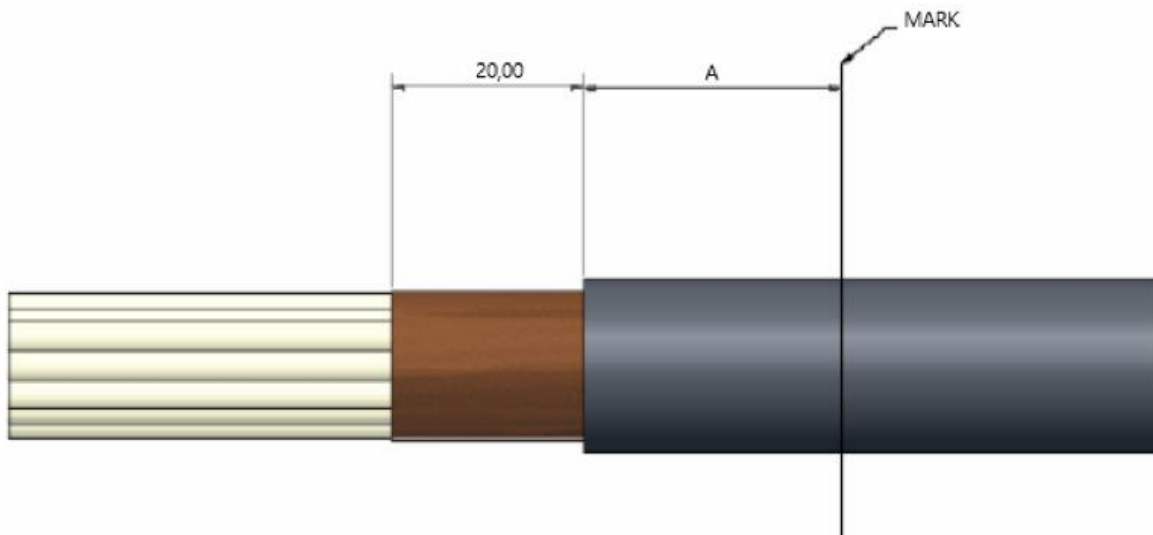


Table 2 – TAK “A” dim Length

ENTRY SIZE	A (mm)	A (mm) UNSCREENED
05	10	25
08	12	30
10	12	30
12	15	40
14	15	40
16	15	40
20	20	50
24	20	50

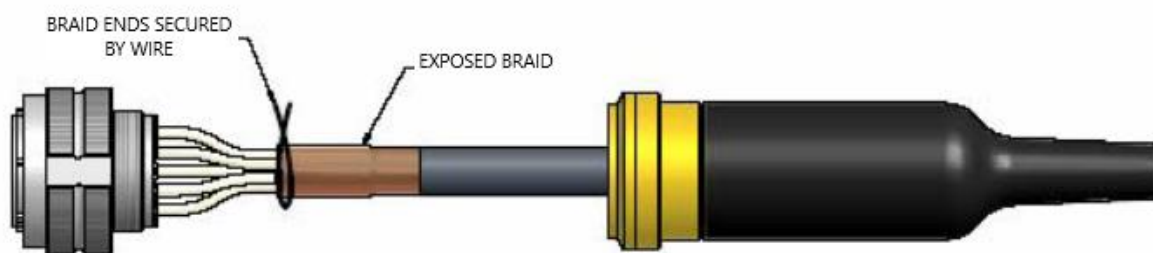
- Cut back the cable braid leaving 20mm exposed from the end of the cable jacket.



7. Either fold back or bunch up the cable braid to expose the wires beneath it and use either packing sleeve to pack out the exposed braid.



Replace and secure the ends of the braid with tinned copper wire. It is important that the ends of the wire are flat against the braid.



8. Prepare the cable jacket by degreasing at least the first 30mm using the cleaning tissue provided. Thoroughly abrade this first 30mm of jacket with the abrasive paper provided, remove any loose particles with a dry tissue.

9. Ensure the major keyway is in the correct position, then slide the Screened Adaptor Kit up to the connector and secure it, using the appropriate mating receptacle and tighten to the correct torque, see table 3.

Table 3 – TAK Adaptor Torque Figures

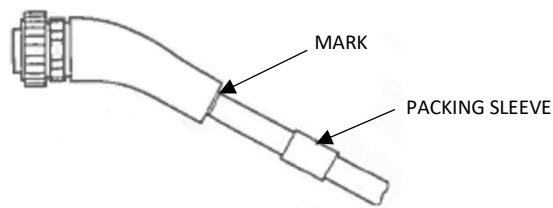
SHELL SIZE	RECOMMENDED TORQUE	
08, 09	4.0 Nm	35 lb.in
10, 11	4.5 Nm	40 lb.in
12, 13	5.0 Nm	45 lb.in
14, 15	5.5 Nm	50 lb.in
16, 17	6.0 Nm	60 lb.in
18, 19	6.5 Nm	70 lb.in
20, 21	8.0 Nm	80 lb.in
22, 23	10.0 Nm	90 lb.in
24, 25	11.5 Nm	100 lb.in

10. Shrink the rear of the heat shrink boot onto the cable using a CV-1981 heat gun fitted with a suitable reflector at setting No 7-8. Remove the excess adhesive, which extrudes from the end of the moulded part, leaving a small fillet. Apply further heat for 30 seconds in the region of the exposed cable braid to ensure adequate flow of conductive adhesive.
11. Allow cooling to room temperature before flexing.
- 12. For installing Unscreened Adaptor Kits on to unscreened cables eliminate steps 6 and 7.**
- 13. For installing angled boots, the procedure is the same from step 1 through to step 12, however, at step 2, the L dimension changes to what is stated in table 4.**

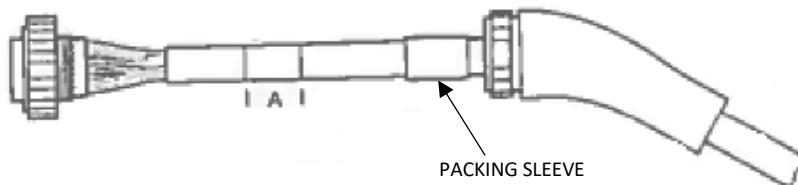
Table 4 – “L” dim for Angled Boots Length

ENTRY SIZE	L (mm)
05	38
08	38
10	40
12	40
14	40
16	50
20	50
24	70

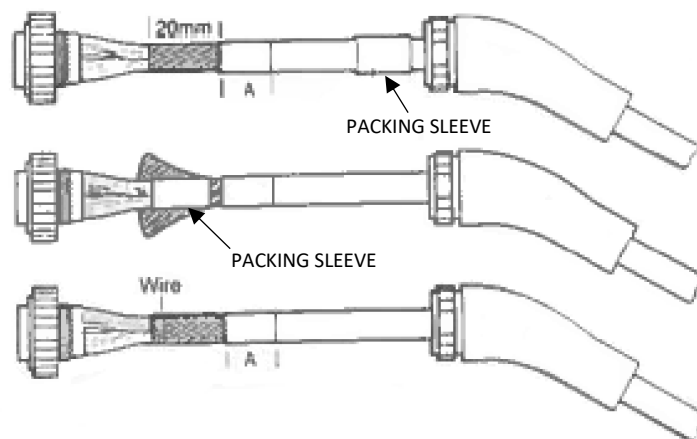
Angled boot image at step 4



Angled boot image at step 5



Angled boot image at step 6 to 8

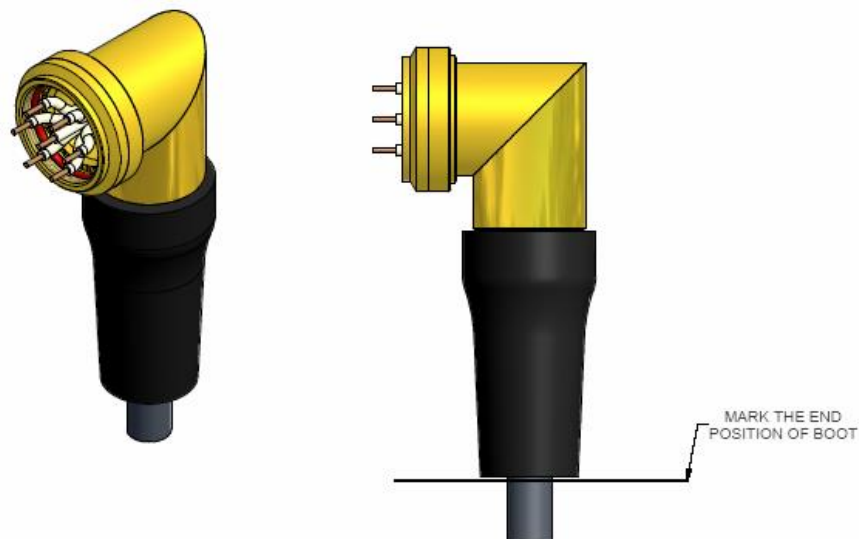


45° and 90° Screened Adaptor Kit Assembly Instructions

These are installed using the same guidelines as above. Note the heat shrink boots are shorter with extra volume for cables being provided by the metal body of the adaptor.

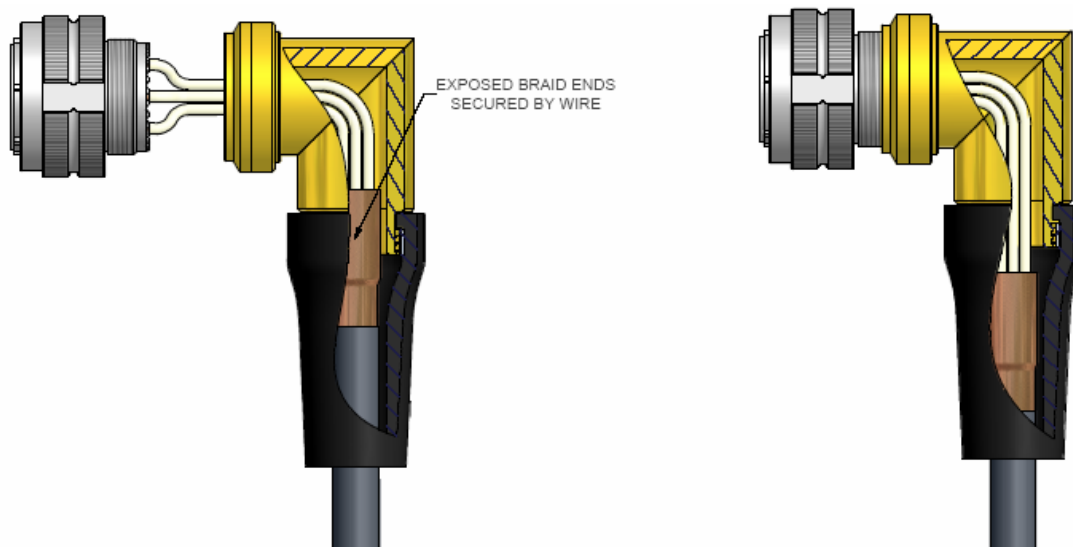
For angled parts, where it is not possible to slide the jacketed cable through the adaptor, the cable must be fully prepared before the conductors are installed to the connector.

1. Cut back the cable jacket and braid to the recommended lengths in table 1.
2. Push the cable through the angled adaptor until the wire ends poke out beyond the adaptor nut, so that they will reach satisfactory when the connector is installed. Allow an extra 15mm if service loops are required.



3. Holding the adaptor in position, mark the cable where the heat shrink boot ends.
4. Remove the adaptor and prepare the cable as in steps 5 through to 8 in Straight Screened Adaptor Kit assembly procedure.

5. It should now be possible to slide the cable further into the adaptor, up to the point where the secured braid end meets the angle of the adaptor. This will expose enough of the wires to allow termination to the connector.



6. Continue from step 9 through to 12 in the Straight Screened Adaptor Kit assembly procedure.

PMTAK Screened Adaptor Kit Instructions

1. Install gland to the bulkhead and tighten to the specified torque given in table 1.

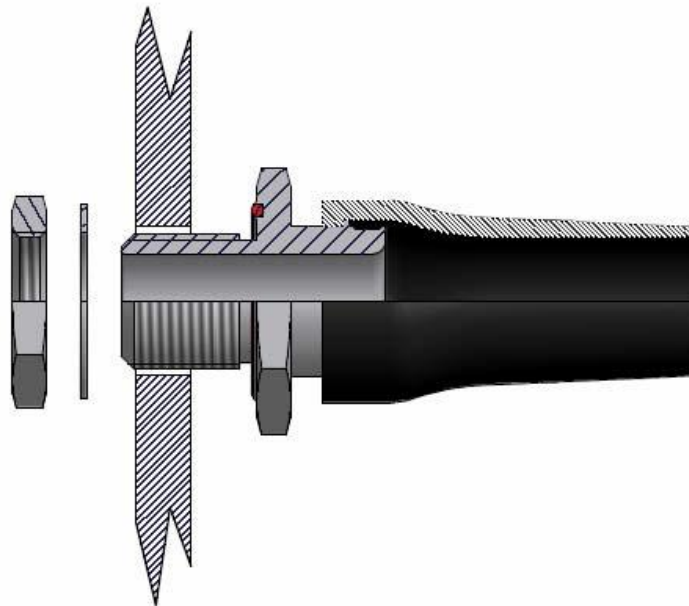
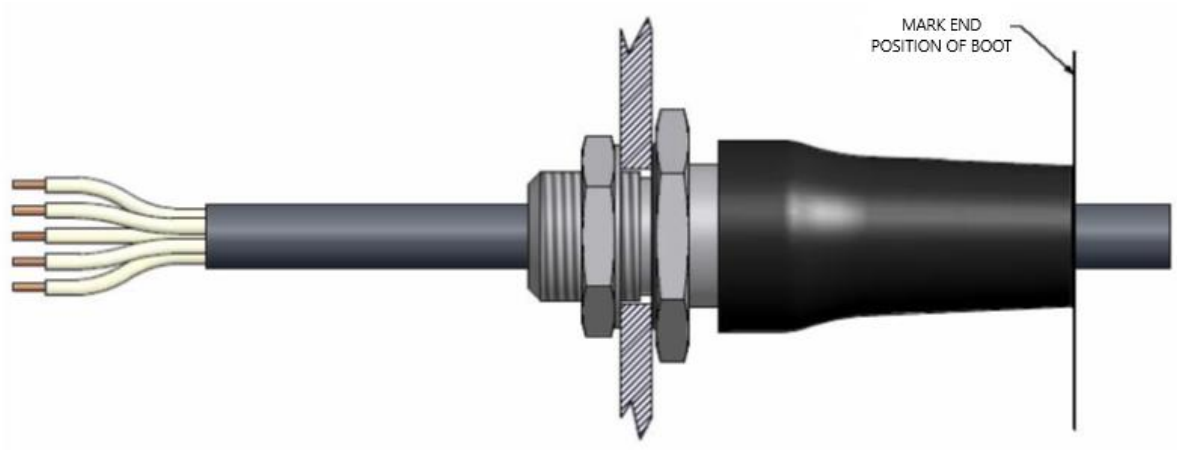


Table 1 – PMTAK Feedthrough Torque Figures

FEEDTHROUGH SIZE	RECOMMENDED TORQUE	
	Nm	lb.ft
12	20 Nm	14.6 lb.ft
16	25 Nm	18.2 lb.ft
20	30 Nm	21.9 lb.ft
24	35 Nm	25.5 lb.ft
30	40 Nm	29.2 lb.ft
36	45 Nm	32.8 lb.ft
48	50 Nm	36.5 lb.ft

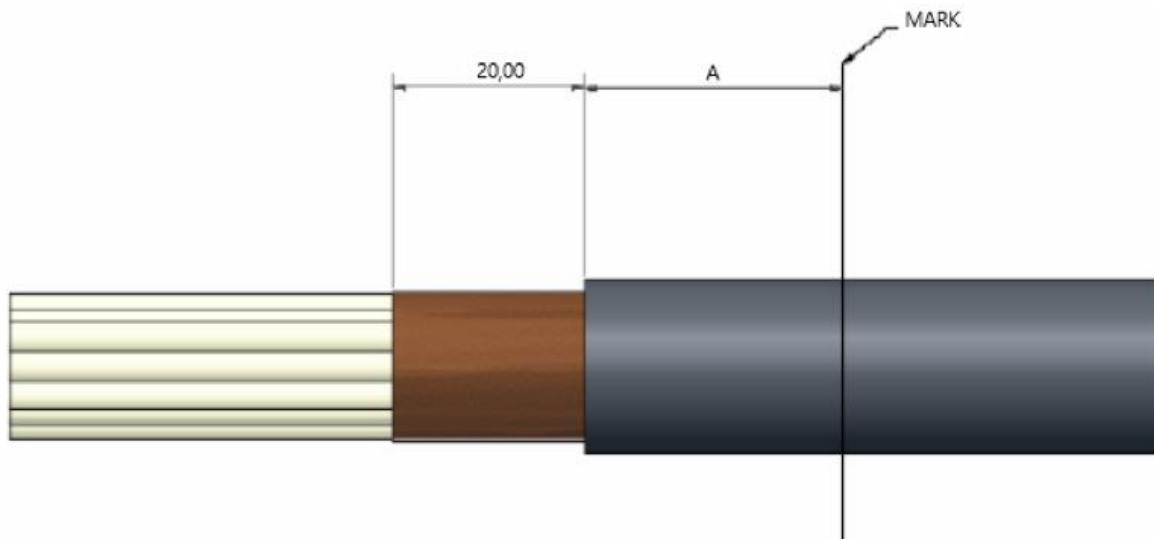
2. Feed the cable through the gland to the required position and mark the cable at the end of the heat shrink boot.



3. Remove the cable from the gland. Take dimension A from Table 2 and mark the cable this distance back towards the bulkhead from the initial mark made in step 2. Strip back the cable jacket to this mark to expose the braid.

Table 2 – PMTAK “A” dim Length

ENTRY SIZE	A (mm)	A (mm) UNSCREENED
12	10	25
16	12	30
20	12	30
24	15	40
30	15	40
36	20	50
48	20	50



4. Cut back the cable braid leaving 20mm exposed from the end of the cable jacket.
5. Either fold back or bunch up the cable braid to expose the wires beneath it and use packing sleeve to pack out the exposed braid. Replace and secure the ends of the braid with tinned copper wire. It is important that the ends of the wire are flat against the braid.
6. Prepare the cable jacket by degreasing at least 30mm using the cleaning tissue provided. Thoroughly abrade this first 30mm of jacket with the abrasive paper provided, remove any loose particles with a dry tissue.
7. Reposition the prepared cable so that the mark is at the end of the heat shrink boot, as in step 2, and orientate as required.
8. Holding in position, Shrink the rear of the heat shrink boot onto the cable using a CV-1981 heat gun fitted with a suitable reflector at setting No 7-8. Remove the excess adhesive, which extrudes from the end of the moulded part, leaving a small fillet. Apply further heat for 30 seconds in the region of the exposed cable braid to ensure adequate flow of the conductive adhesive.
9. Allow cooling to room temperature before flexing.
10. **For installing angled boots, the same guidelines above apply.**

