



WORK INSTRUCTION RESISTANCE EQUIPMENT CABLING

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Example – 3.2mm – 5.0 mm Cable

1. MAKING THE CABLE

Tools Required

Item	Quantity
1. Making the Cable	
5 Hexloc Press Dies	2
Press	1
Cable Cutter	1
Stanley Knife	1
Pipe Grip	1
13mm Spanner	1
Hack Saw	1
Vice	1
Rule	1
1/8 Ball Shank Dies	2
2. Fitting the Cable	
Various Allen Keys – Range <i>Metric</i> 6mm/7mm/8mm/10mm <i>Imperial</i> 3/16 or 7/32 or ¼ or 5/16 or 3/8	1
Adjustable Spanner	1
Various Spanners - Range <i>Metric</i> 10mm/13mm/14mm/17mm/19mm <i>Imperial</i> ¾ or 5/8 or 19/32 or 7/16 or 5/16	As required by the job

Materials Required

Item	Quantity	Visual	Relevant Die
3.2mm -5mm Cable	As required by the job		
3.2mm – 5mm Aluminium Ferrule (OM6076)	2		HEXLOCK 5
3.2mm – 5mm Ball End (OM6074)	1		1/8 th Ball Shank
3.2mm – 5mm Thimble (OM6078)	1		
3.2mm – 5mm Steel 4 Hole Terminal (TCABLE12267)	1		T 4.5
3.2mm to 5mm Steel Threaded Terminal (TCABLE12268)			T 4.5

Method

1. Check the machine that needs re-cabling and understand the reason for it requiring re- cabling. If it is down to general wear and tear and age then carry on and replace.

2. If the cable has broken due to unusual circumstances E.g.
 - The cable has recently been replaced and has snapped.
 - The fittings have become loose.
 - The resistance on the pulleys is too tight.
 - Clear signs of misuse.Then investigate further and only replace if confident that the issue is will be resolved moving forward.
3. Ensure that the tools and correct materials are available to complete the job.
4. If the old cable still exists use it as a template. If not then refer to manufacturers drawings if available. If none available contact manufacturers for advice.
5. Select the appropriate cable size to complete the job either 3.2mm to 5mm cable or 5mm to 6.35mm cable and relevant end fittings.

Note: End fittings have to match and be size appropriate for the cable being used.
6. Using cable cutters cut the cable to the required length to complete the job.



7. Using a sharp Stanley knife cut away the outer plastic sleeve of the cable to the required length to ensure that the thimble fits correctly. Measure the amount of plastic sleeving that needs to be cut away by looping around the thimble and then adding an amount for fitting comfortably.
8. When the plastic casing has been cut away the exposed wire will be visible and ready to work on.



Note: When cutting the sleeve away ensure that the knife is pushed away from the body.



9. Thread two size appropriate ferrules on to the stripped cable

Note: Do not fray the end of the cable. If you do the ferrules will not fit over the end of the cable properly.



10. Make a loop with the cable and route through the ferrules again.



11. Fit a thimble on to the inside loop created with the cable

Note: Do not make the loop that you have created too tight. This will avoid unnecessary strain on the cable



12. Fit the pair of 5 Hexlock press dies to the press, by sliding them on to the peg.



11. Using a 13mm spanner hold the die level and tighten the nut.



12. Place the cable and ferrules under the dies in the press

Note: Ensure that the ferrules are in the centre of the press dies so that even crimping can take place.

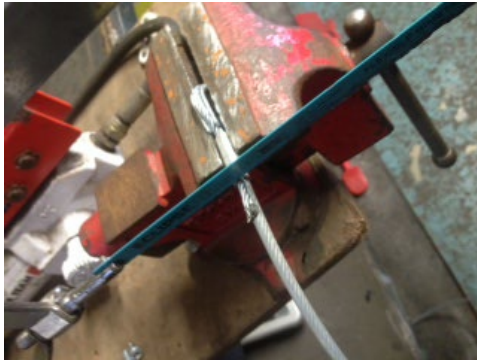


13. Begin to press the ferrules until the two press dies have touched. Check that the blocks have crimped evenly by visually inspecting each side of the die



14. As a final check, flip the ferrule over and press one more time to ensure that it is fully secured.
15. Ensure that the press is inspected and signed off by as appropriate.
16. Using a Hack Saw cut off the excess cable. Ensure that it is flush with the ferrule.

Note: Do not cut into the opposite cable



IF ONLY ONE END REQUIRED THEN STOP AT THIS POINT. IF BOTH ENDS REQUIRED THEN FOLLOW BELOW

17. Begin work on the opposite side of the cable. Decide upon the appropriate end fitting for the other end of the cable i.e. ball end/threaded terminal/4 hole terminal

18. Use a Stanley knife to cut off the required length of sleeving for the relevant end fittings.

Note: Do not fray the end of the cable to ensure that the end fitting fits.

19. Fit the relevant die (See materials chart) to the press and tighten the nuts with a 13mm spanner.

20. Press the fitting until the two dies touch each other.

21. As a final check, flip the ferrule over and press one more time to ensure that it is fully secured.
22. Ensure that the press is inspected and signed off by as appropriate.



2. FITTING THE CABLE

1. Assess the cable routing. Check manufacturer's drawings as appropriate. Layout the cable to ensure that the relevant end fittings are in the correct position
2. Identify clearly what the end fitting will be attached to (ball end, threaded terminal/ 4 hole terminal) and ensure that it is fit for purpose, i.e. top of the sword on the stack is intact or grub screws are all present or adjustable pulley housing. If any element is failing repair /replace prior to recabling.
3. Remove the pulley wheels from the machine where the cable needs to be routed if appropriate. Check to ensure that the pulleys are intact and in good working order (No chips, clean and not blocked with grease or dirt)



4. If the pulleys are failing replace as appropriate. Refer to the manufacturers drawing.
 5. Dependent upon the machine either fit one end prior to routing the cable or leave the cable freely attached (A cable cross over due to the amount of cabling would need securing first)
 6. Route the cable through the machine as outlined by either the original cable or the manufacturers drawing.
 7. Once the cable is in position, replace the pulley wheels from their original housing position on the machine.
 8. Tighten up the pulley wheels once the cable is correctly routed.
- Note:** Ensure that the cable is free running and does not cross with any other cable and that the thimble is at the correct position for the machine and customer use.

3. TESTING THE EQUIPMENT

1. Disconnect the weight stack from the cable by taking out the weight stack pin and then begin to use the machine. The weight stack should be free of any juddering or sticking.
2. If there is juddering or sticking, investigate the issue and resolve. This will normally happen if the cable has been routed through the pulley system incorrectly or the guide rods are rusty/dirty or dry.
3. If there is smooth motion then apply half the weight on the stack and begin to use the resistance. Continue to test the machine by adding more weight and testing and checking until the total weight is applied and that there is smooth running across the whole weight range.

4. If there are any issues throughout the testing process in terms of juddering, sticking or the cables tension review and rectify as appropriate.
5. Once completely satisfied that the cable is working to a satisfactory standard sign the job off.