

CABLE and HOSE GUIDELINES

Special attention must be given when installing cable or hose into PowerTrak. Below are a few considerations.

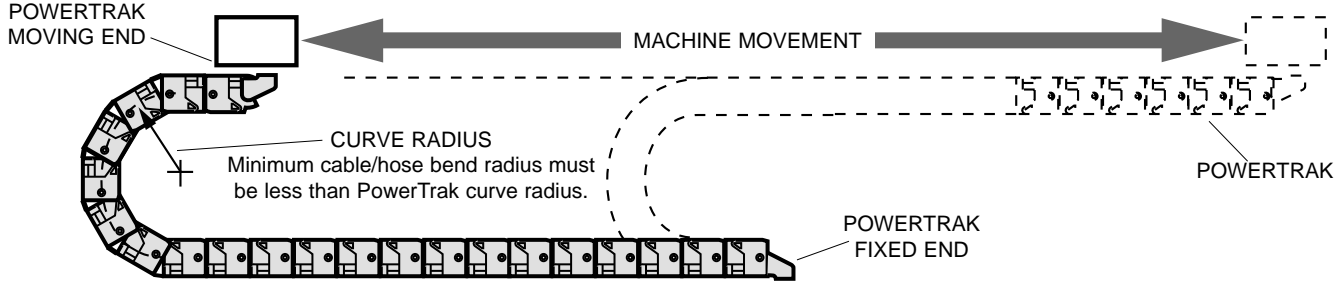


Figure 1

CABLE/HOSE SELECTION

1. Select cable or hose with minimum bend radius (MBR) less than curve radius of PowerTrak. Follow cable or hose manufacturer's specifications and guidelines. See Figure 1.

2. Select cable that is rated "continuous flex". Cables built for robotics are designed to flex millions of times, but some only flex on one axis. Consult your supplier for complete cable specifications.

3. Be sure cable and hoses are suitable for use in anticipated operating environment. This is especially important in outdoor applications where sub-zero temperatures cause some cable or hose material to stiffen or even break.

3. Arrange cables/hoses in the PowerTrak so as to allow adequate movement. The largest cable or hose in the trak should have 20% clearance of the trak height and the total of all cables/hoses should have 20% clearance of the trak width (Fig. 7).

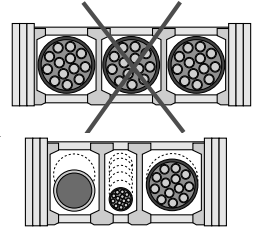


Figure 7

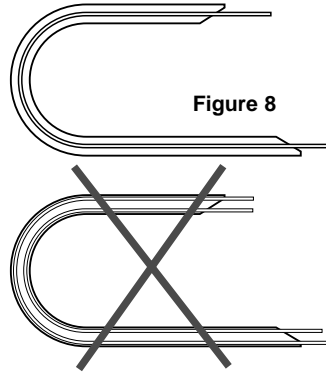


Figure 8

4. Cables/hoses should be installed along the centerline of the carriers (Fig. 8). This eliminates undue cable/hose wear caused by excessive contact on the inner or outer radius of the trak. Be sure cables/hoses are not under tension or installed with too much slack.

5. Allow extra space in trak for high pressure hoses.

Depending on type of construction, some hoses will increase in length under pressure while others will shrink. Check hose manufacturer to ascertain how much shrinkage or lengthening will occur.

6. Clamp all cables/hoses firmly at both ends of the trak (Fig. 9).

To avoid damage to the inner structure of the cables/hoses, clamp over a wide area of the outer jacket. Always leave slack between clamps and termination points to avoid stress on cables/hoses.

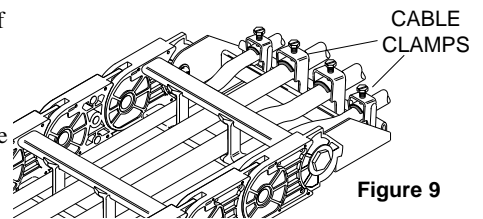


Figure 9

7. Test run PowerTrak at slow speed to make sure there is no pinching and that no kinks have developed in hoses or cables. Perform test with hoses at operating pressure. Re-adjust cable/hose length if required.

INSTALLATION

1. The cables/hoses must not have twists, bends or kinks at the time of installation. Unspool (do not uncoil) cable or hose from shipping reel several hours in advance of installation. Hang cables and hoses for 24 hours or, at the minimum, lay out in straight line to allow kinks and curves to straighten out. See Figure 2.

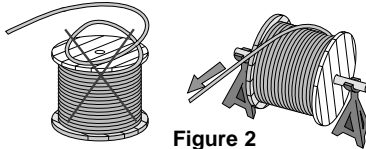


Figure 2

2. Arrange cables and hoses in PowerTrak so that load is evenly distributed across width with largest and/or heaviest cables/hoses located to the outer sides of the PowerTrak (Fig. 3). Use separators between different sizes of cables and hoses to maintain proper spacing and to reduce cable/hose jacket wear (Fig. 4). Do not place large cable or hoses in same compartment with small ones (Figs. 5 & 6).

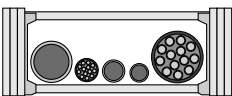


Figure 3

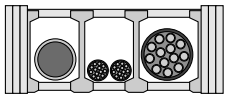


Figure 4

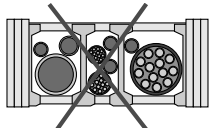


Figure 5

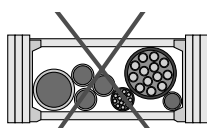


Figure 6



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