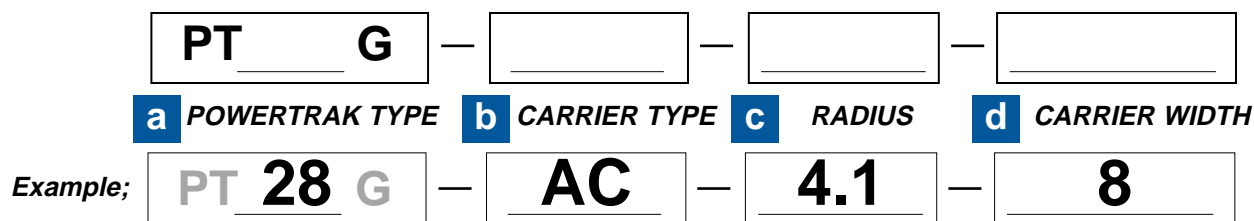


Ordering PowerTrak

BUILDING MODEL NUMBER



Bend radius shortened when used in model number. Example: 4.19 = 4.1.

a ENTER POWERTRAK TYPE

PowerTrak type should be suitable for the travel length required for your application and for the cable/hose package it is expected to carry. If it is not, you must choose another type PowerTrak. See specification pages for each type PowerTrak. Use of a guide tray or guide tray & carriage, if available for a given type PowerTrak, can allow increased travel. See Application pages for help calculating travel in your application and following pages for more information about your cable/hose “package”.

b ENTER CARRIER TYPE

Carrier Type should be suitable for the cable/hose package and machine duty cycle and must be available for the PowerTrak type chosen. Refer to Carrier Selection Guide and PowerTrak Specification Pages for list of carrier types available for each PowerTrak type as well as both vertical and horizontal opening dimensions.

c ENTER BEND “RADIUS”

Each PowerTrak type is available with several radii molded into the links (see PowerTrak Specification pages and Selection Guide, following page). Radius chosen should be equal to or greater than the minimum bend radius of your LEAST FLEXIBLE cable or hose. If this condition is not met, you must choose a PowerTrak type with a larger bend radius. Consult your cable/hose supplier or manufacturer for specific information if you are not sure of the bending radius of each cable or hose to be used in the PowerTrak. Or, for a working estimate, multiply the outside diameter of the largest cable or hose in the package by six (6).

d ENTER CARRIER WIDTH

Carrier width should be cable/hose package width x 1.20 (refer to Defining Cable/Hose Package) and must be compatible with PowerTrak type you have chosen. See PowerTrak Specification Pages for carrier window dimensions and compatibility with each size trak.

ADD THE FOLLOWING—Required, but not part of model number

e POWERTRAK LENGTH

NOTE: “Length to order” is computed differently if “two-way payout” is not possible. See “Applying PowerTrak” on the previous pages for details and consult a factory representative if necessary.

f OPTIONAL ACCESSORIES

Mounting brackets **are not automatically included** and must be ordered here if required. Specify type of bracket. Refer to PowerTrak Specification pages. If roller supports, guide tray or carriage are required and are available for the type PowerTrak you are ordering, also enter that information here. Compute length for guide tray as shown on previous pages. Carriage length will be calculated by factory. Carriage is never used without a guide tray.

COMPLETED EXAMPLE MODEL NUMBER



a DETERMINING POWERTRAK TYPE

Trak type must be carefully chosen to provide maximum life for both cable/hose package and trak. When selecting type, pay close attention to the following:

- A. Radius...trak must have bend radius **greater** than least flexible cable/hose bend radius (column two on guide below).
- B. Total travel...be sure total required travel does not exceed specifications for chosen trak type. See guide below.
- C. Maximum velocity of application...be sure velocity does not exceed specifications for chosen trak type. See guide below.
- D. Carrier type...although carrier type and size may not have yet been chosen, consider width of total cable/hose package (following page), as well as diameter of largest cable or hose.
- E. Choose trak type that will provide a vertical opening of sufficient size to contain cable/hose. Refer to specification pages for each trak type for more information. NOTE: On any given PowerTrak type, vertical opening varies with carrier type selected. Horizontal opening is determined by carrier width.

PowerTrak Type Selection Guide

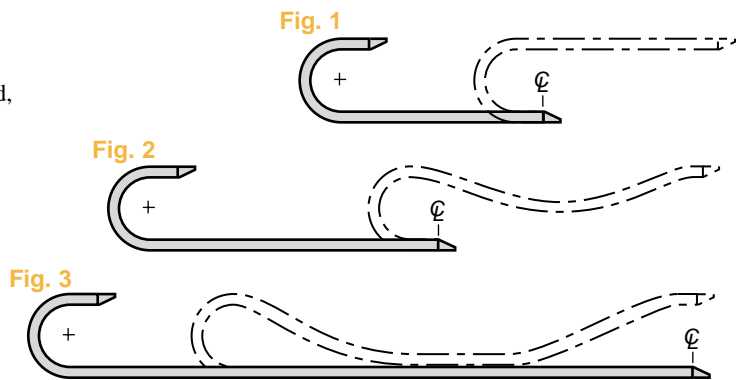
POWERTRAK TYPE	POWERTRAK BEND RADIUS ^③	MAXIMUM TOTAL TRAVEL ^①			VELOCITY Ft/Min ^②
		NO SUPPORT	GUIDE TRAY	CARRIAGE	
PT25G	2.78, 4.95, 7.70, 11.64	14 Ft.	na	na	800 No Supt. 300 W/Tray 1000 W/Carriage
PT28G	4.19, 5.45, 6.63, 8.40	18 Ft.	300 Ft with 5 lbs/ft load	400 Ft. with 8 lbs.ft load	800 No Supt. 300 W/Tray 1000 W/Carriage
PT35G	4.94, 7.21, 10.84, 14.71	24 Ft.	300 Ft with 6 lbs/ft load	700 Ft. with 8 lbs/ft load	800 No Supt. 400 W/Tray 1000 W/Carriage
PT45G	7.22, 10.94, 14.72, 24.04	26 Ft.	300 Ft with 12 lbs/ft load	1000 Ft. with 15 lbs/ft load	800 No Supt. 500 W/Tray 1000 W/Carriage

- ① Total Travel values based upon standard travel (two-way payout) and total cable/hose weight of 0.5 lbs/ft.
- ② Speed capabilities may increase for shorter machine travels and/or light loads. Please consult the factory.
- ③ Please consult the factory concerning non-standard Bend Radii and non-standard Carrier Widths.

“SAG” is Natural!

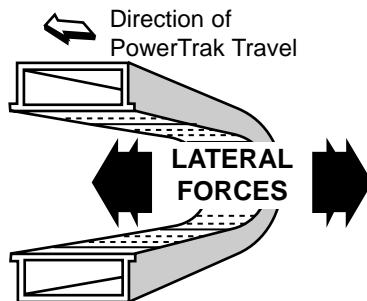
The side links of PowerTrak Type G are made of reinforced nylon which is a good bearing material. When correctly applied, Type G PowerTrak can safely sag and is designed to glide on itself. Amount of sag depends on system length, PowerTrak type and cable/hose package weight.

- Figure 1:** A short PowerTrak with nominal sag.
- Figure 2:** Longer PowerTrak showing moderate sag.
- Figure 3:** A very long PowerTrak gliding on itself. A tray system helps guide such long systems. See “Guide Trays”.



Lateral Forces

When significant lateral forces are present (on a crane bridge, for example, when the crane moves along the runway) PowerTrak may need side support. This is especially true on longer travels. A guide tray is often the solution (see “Guide Trays”). Contact us for specific recommendations.



Speed

Generally, short lengths of self-supported PowerTrak can travel at high rates of speed and acceleration. For longer travels, a guide tray should be used. When speeds exceed 800 fpm and/or acceleration exceeds 10fps², please consult factory.

Ordering (continued)

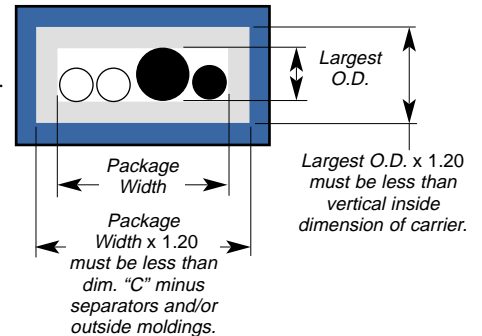


DETERMINING CARRIER

Refer to selection Guide, below, and to PowerTrak Specifications pages. Use the following criteria when selecting a carrier type and width:

- A. Cable/hose package (**JQsum** and **PKG HEIGHT** from following page). Multiply each by 1.20 to find minimum carrier length (horizontal opening) and vertical opening that should be used for your application. See Figure 1, right.
 - B. CARRIER OPTIONS page for benefits of each style carrier.
- NOTE: Style BC is most efficient design from an operational standpoint but not necessarily from a capacity standpoint. Do a careful layout.**

FIG. 1 PowerTrak Cross Section



Select carrier style and size. **Selected carrier must fit PowerTrak type chosen.**
If it does not, select alternate carrier or go back and select next largest PowerTrak type.

Carrier Selection Guide

POWERTRAK TYPE	CABLE/HOSE Max O.D.	CARRIER TYPE ①	CARRIER WIDTHS ②	
			STANDARD "C"	OPTIONAL WIDTH
PT25G	1.00	BC	4, 6, 8, 10, 12	Unlimited 2"-12" ③
	0.78	SR, R1		
	0.87	AC, A1		
	0.87	TB, T1		
	0.62	RN		
	0.82	RR		
PT28G	1.35	BC	4, 6, 8, 10, 12	Unlimited 2"-12" ③
	1.04	SR, R1		
	1.09	AC, A1		
	1.09	TB, T1		
	0.88	RN		
	1.07	RR		
PT35G	1.81	BC	4, 6, 8, 10, 12, 14, 16, 18 ④	Unlimited 4"-18" ③
	1.29	SR, R1		
	1.39	AC, A1		
	1.39	TB, T1		
	1.03	RB, RB1, TRB, TR1		
	1.19	RN		
	1.34	RR		
PT45G	2.73	BC	6, 8, 10, 12, 14, 16, 18 ④	Unlimited 4"-18" ③
	2.12	SR, R1		
	2.25	AC, A1, VC, V1		
	2.25	TB, T1, VTB, VT1		
	1.88	RB, RB1, TRB, TR1		
	2.02	RN		
	2.18	RR		
	2.57	XR		
	2.47	XN		

① See page 9 for details on Carrier Types.
 ② Please consult the factory concerning non-standard Bend Radii and non-standard Carrier Widths..
 ③ PowerTraks with double or triple wide carriers are available. Do not exceed 36" overall width.
 ④ Types RB, RB1, TRB, & TR1 limited to 12" maximum width.

Special Instructions for Type BC (milled bar) Carrier

Type BC carrier uses a "split" aluminum bar which supports the cables/hoses near the true bending radius of the trak. Holes are custom machined to meet the particular application. When designing the hole layout, pay attention to the following:

1. Cables/hoses must be positioned to form a single layer with the heaviest and largest located near the PowerTrak links.
2. Determine clearance for each cable or hose as follows:
 - A. For nominal O.D.'s greater than 1.25", multiply O.D. by 1.1
 - B. For nominal O.D.'s equal to or less than 1.25", add 0.12"
3. Maintain a 0.25" space between holes to facilitate machining. If this is not possible, use a wider carrier or group two or three cables/hoses together in one horizontal slot.
4. Hoses operating at pressure greater than 200 psi should be individually contained in a vertical slot.



DEFINING YOUR CABLE/HOSE "PACKAGE"

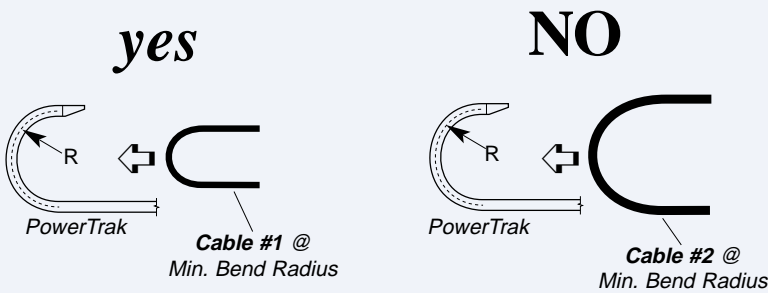
IF YOU WISH, MAKE COPIES OF THIS PAGE FOR WORKING OR FAXING

Picture your cables and hoses as a GROUP, what we call a cable/hose "PACKAGE."

- PowerTrak should **NOT** have a radius less than the minimum bending radius of the least flexible cable or hose in your package, usually the recommended minimum bend radius of the largest cable or hose in your package (Fig 1).
- Package must fit into a PowerTrak WINDOW. Allow for at least 20% clearance. See Fig. 2 and PowerTrak Specification pages.

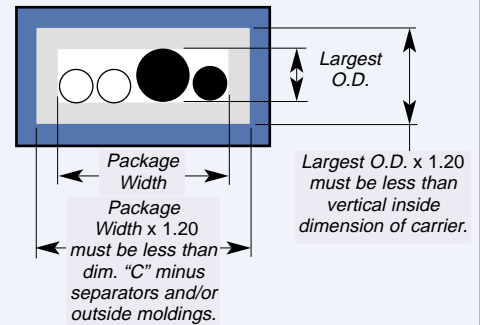
IMPORTANT: Information about your cables and hoses is CRITICAL for selecting the correct PowerTrak.

FIG. 1 Cable/Hose Bend Radius



PowerTrak must have a large enough radius.

FIG. 2 PowerTrak Cross Section



Your package must fit a window.

Fill in all of the blanks in the Worksheet below (if necessary, refer to "Cable & Hose Data" at the back of this catalog for diameters and weights of typical cables and hoses).

Cable/Hose Descrip. (Include Qty of each @ right)	J O.D.	D Min. Bend*	A Lbs/Ft	Q Quantity	AQ (A x Q)	JQ (J x Q)
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

TOTAL NO. OF CABLES/HOSES (for machined bar carrier option) → **QSUM =** _____

TOTAL CABLE/ HOSE WEIGHT → **AQSUM =** _____ Lbs/ft

PKG WIDTH (Total of all O.D.s) → **JQSUM =** _____ In

PKG HEIGHT (Largest O.D. [J] of all) _____ Inches

PKG MINIMUM BEND RADIUS* _____ Inches

*PKG MINIMUM BEND RADIUS: Your package should only bend as tight as the LARGEST recommended min. bend radius of all cables or hoses in your package. Generally, but not always, the minimum bend radius is largest on your LARGEST O.D. cable/hose. Bend radius information should be available from the cable/hose manufacturer. If no information is available, a good method for determining min. bend radius of your package is to multiply your LARGEST O.D. by a factor of 6 (six): [6 x O.D.].

Ordering (continued)



DETERMINING LENGTH

You need enough PowerTrak to cover:

- The Total Travel (TT) of your machine, for one-way payout (Fig 1), or 1/2 the Total Travel, for two-way payout (fig 2).
- Plus the length to form the PowerTrak curve (L on fig. 3) from Dimension Tables, PowerTrak Specification pages).

The most cost-effective way to use PowerTrak is to locate the trak's fixed end (cable/hose source) at the CENTER of the machine travel, allowing pay-out in two (2) directions. We refer to this as "Two-way payout", illustrated in figure 4. Travel potential for the same length PowerTrak is DOUBLED when two-way payout is used. In the same way, you minimize the cost of cables and hoses – they need be only about HALF as long as your total travel (TT).

Opposed Travel application (Fig 4) does not shorten the length of PowerTrak required on each side (both must be 1/2 total travel). Rather, an Opposed Travel application is two similar PowerTraks installed in opposite directions. This application may allow use of a smaller trak type, shorter carriers or a single-wide rather than double-wide trak configuration. An opposed travel application also allows for distinct separation of cable and hoses.

ONE-WAY PAYOUT	TT (ft.)+L(ft.)	Length to order:	TWO-WAY PAYOUT	$\frac{TT(ft.)}{2} + L(ft.)$
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FIG. 1

**STANDARD travel
with
ONE-WAY payout**

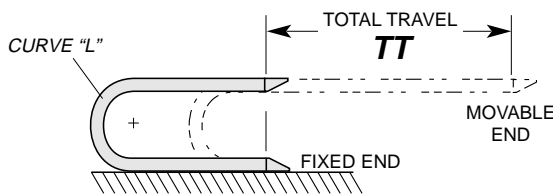


FIG. 2

**STANDARD travel
with
TWO-WAY payout**

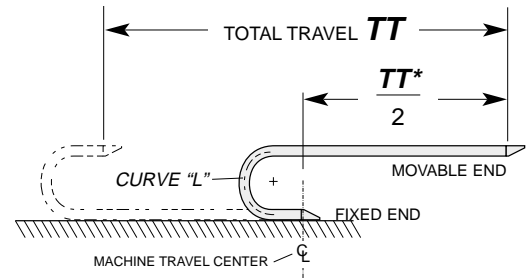
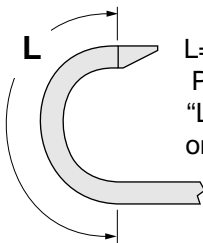


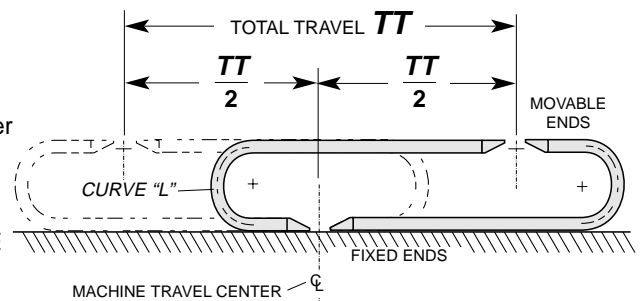
FIG. 3



L= Minimum length to form PowerTrak curve. Obtain "L" from Dimension Tables on pages 10, 12, 14 or 16.

FIG. 4

**OPPOSED travel
with
TWO-WAY payout**



On OPPOSED TRAVEL applications, length of trak **must be identical** for both PowerTraks. Style of carrier, including number of dividers, may differ between the two PowerTraks so as to accommodate different cable and hose arrangements. For long travels, use of a GUIDE TRAY is highly recommended. Use of a CARRIAGE is also recommended but not essential. If GUIDE TRAY is used, trak link style and carrier lengths must also be identical for the two PowerTraks.