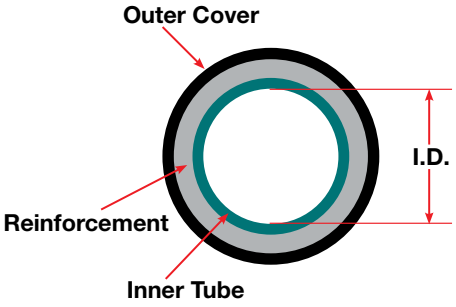
Before you spec it, STAMP it.

S T A M P

SIZE TEMPERATURE APPLICATION MEDIA PRESSURE

When you order hose and fittings from Parker, remember the word "STAMP." That way you won't forget important information!



The hose size is determined by the inside diameter which can be measured or found on the layline.

Size

Parker uses a system of measurement called Dash Numbers to indicate hose and fitting size. The dash number, or dash size, is the measure of a hose's Inner Diameter (I.D.) in sixteenths of an inch. (The exception to this is SAE 100R5 hose. See the chart below for complete details.)

This measuring system of the inside diameter of the hose is universally used by the fluid power industry today. Don't know the hose size? Check the layline. If the original printing has worn off, the original hose must be cut and the inside diameter measured. Be sure to measure the overall assembly length and fitting orientation before cutting the hose.

The hose I.D. must be sized accurately to obtain the proper flow velocity. A flow that's too slow results in sluggish system performance, while a flow that's too high causes excessive pressure drops, system damage, and leaks.

Use the Flow Capacity Nomogram in Section E to determine the proper hose I.D. for an application's flow rate requirements.

Hose I.D. (Inches)				
	All Except Transportation and Refrigerant Hoses		Transportation and Refrigerant Hoses	
Dash No.	Inches	Millimeters	Inches	Millimeters
-3	3/16	5	–	–
-4	1/4	6,3	3/16	5
-5	5/16	8	1/4	6,3
-6	3/8	10	5/16	8
-8	1/2	12,5	13/32	10
-10	5/8	16	1/2	12,5
-12	3/4	19	5/8	16
-16	1	25	7/8	22
-20	1-1/4	31,5	1-1/8	29
-24	1-1/2	38	1-3/8	35
-32	2	51	1-13/16	46
-40	2-1/2	63	2-3/8	60
-48	–	–	3	76

Temperature

When specifying hose, there are two temperatures you need to identify. One is the **ambient temperature,** which is the temperature that exists outside the hose where it is being used; the other is the **media temperature,** which is the temperature of the media conveyed through the hose.

Very high or low ambient temperatures can have adverse affects on the hose cover and reinforcement materials, resulting in reduced service life.

Media temperatures can have a much greater impact on hose life. For example, rubber loses flexibility if operated at high temperatures for extended periods.

Parker hoses carry different temperature ratings for different fluids. For example, 811HT hose has a temperature range of -40°F to + 257°F (-40°C to +125°C) for petroleum-based hydraulic fluids. However for water, water/glycol, and water/oil emulsion hydraulic fluids, the range drops to a rating of up to +185°F (+ 85°C). Air is rated even lower at up to 158°F (+ 70°C).

Some media can increase or decrease the effects of temperature on the hose. The maximum rated temperature of a hose is specific to the media. See the Minimum/ Maximum Temperature Chart in Section E for a full listing of all temperature ratings.

Parker offers a wide range of special types of hoses for low and high temperatures. See pages A-6 to A-7 Hose Overview.

Application

Before selecting a hose, it is important to consider how the hose assembly will be used. Answering the following questions may help:

- **What type of equipment is involved?**
- **What are the environmental factors?**
- **Are mechanical loads applied to the assembly?**
- **Will the routing be confined?**
- **What about hose fittings – permanent or field attachable?**
- **Will the assembly be subjected to abrasion?**

Sometimes specific applications require specific hoses. For example, applications where hoses will encounter rubbing or abrasive surfaces, would be best handled by our family of abrasion-resistant hose with both Tough and Super Tough covers.

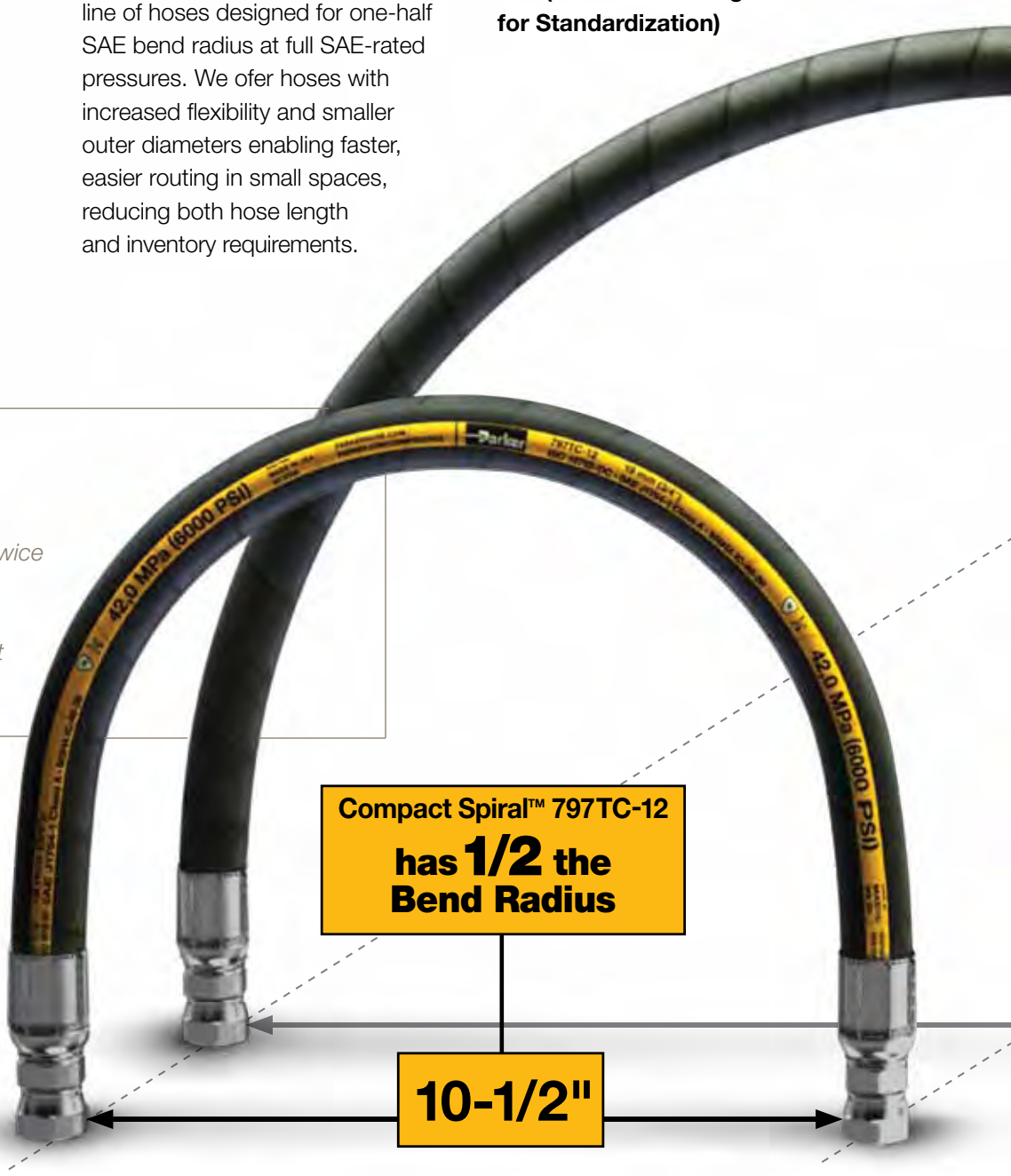
When application space is tight, bend radius is another important consideration. Parker offers a full line of hoses designed for one-half SAE bend radius at full SAE-rated pressures. We ofer hoses with increased flexibility and smaller outer diameters enabling faster, easier routing in small spaces, reducing both hose length and inventory requirements.

Industry standards set specific requirements concerning construction type, size, tolerances, burst pressure, and impulse cycles of hoses. Parker hydraulic hoses meet or exceed standards such as:

- **SAE (Society of Automotive Engineers)**
- **EN (European Norm)**
- **DIN (Deutsches Institut für Normung)**
- **ISO (International Organization for Standardization)**

Hose Hint

When considering the bend radius of a hose assembly, a minimum straight length of twice the hose's outside diameter should be allowed between the hose fitting and the point at which the bend starts.

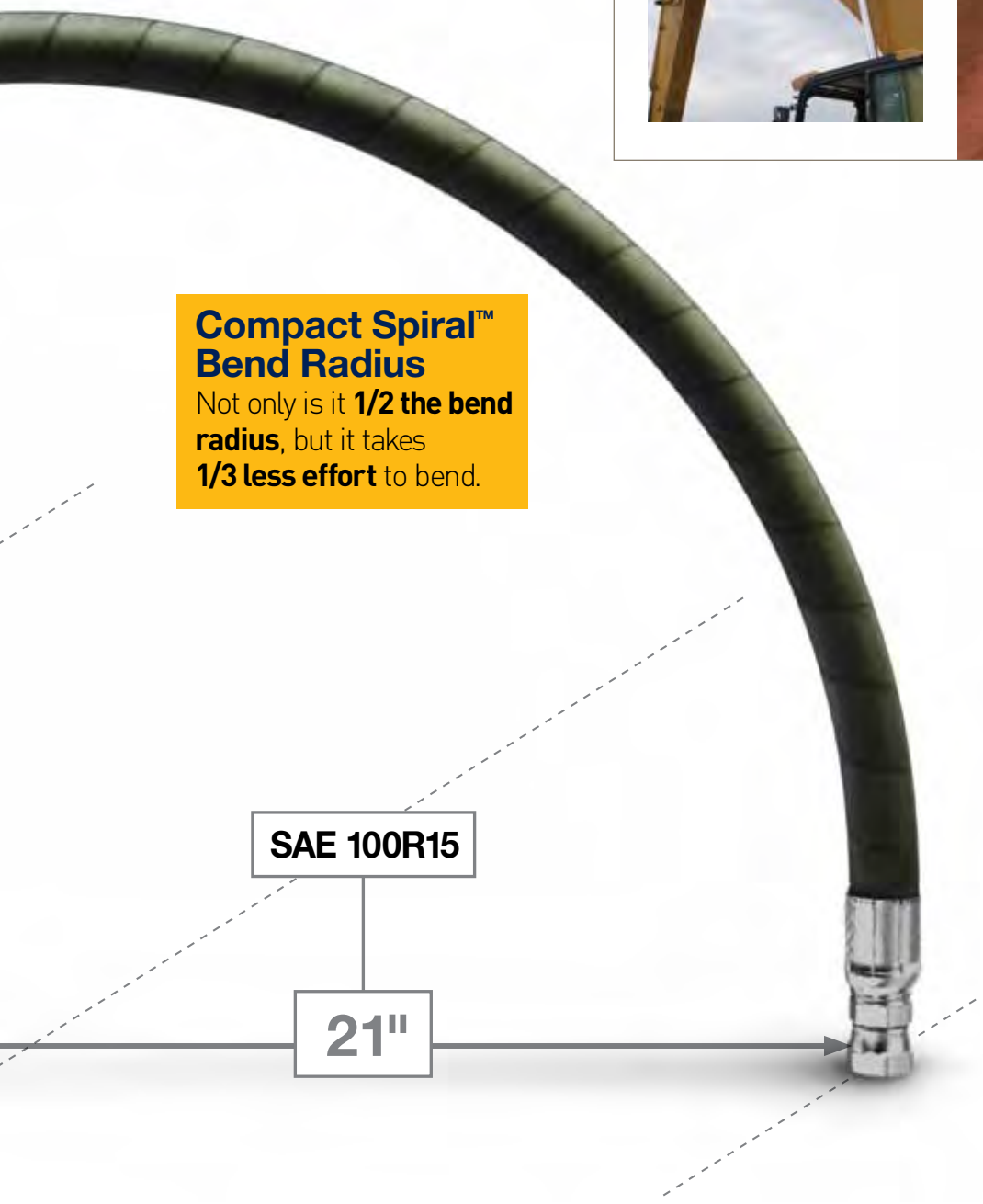


ABS
TYPE APPROVED PRODUCT

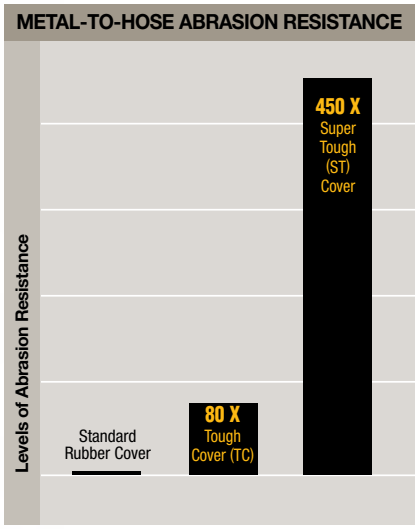
Governmental agencies control additional standards for particular industries such as U.S.C.G. and ABS. You must select a hose that meets the legal requirements as well as the functional requirements of the application.

Hose Hint

A hose assembly should be routed so that the hose is not stretched, compressed, or kinked to assure maximum service life and safety.



Compact Spiral™ Bend Radius
Not only is it **1/2 the bend radius**, but it takes **1/3 less effort** to bend.



Results from the ISO 6945 metal-to-hose abrasion test show that Tough Cover and Super Tough cover hoses offer significantly greater abrasion resistance than standard rubber cover hose.

Media

What will the hose convey? Some applications require the use of specialized oils or chemicals. The hose you order must be compatible with the medium being conveyed. Compatibility must cover the inner tube, the cover, hose fittings, and o-rings as well. Use the Chemical Resistance Chart found in Section E to select the correct components of the hose assembly that will be compatible with your system's media. The chart contains the chemical resistance rating of a variety of fluids.

Hose Hint

For long service life and leak-free functionality, it is vital that the hose assembly be chemically compatible with both the fluid being conveyed through the hose as well as the environment of the hose.

Pressure

When considering hose pressure, it's important to know both the system working pressure and any surge pressures and spikes.

Hose selection must be made so that the published maximum working pressure of the hose is equal to or greater than the maximum system pressure. Surge pressures or peak transient pressures in the system must be below the published maximum working pressure for the hose.

Each Parker hose has a pressure rating which can be found on the Hose Overview Chart on page A-6, to A-7 and in Section E.

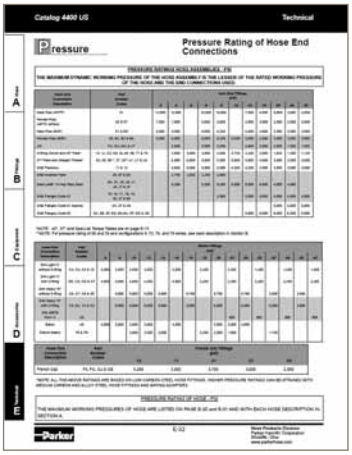
All Parker hydraulic hoses have passed the industry rated specifications for burst pressure and carry a 4:1 design factor unless otherwise noted. Burst pressure ratings for hose are for manufacturing test purposes only. They are not an indication that the product can be used above the published maximum working pressure. It is for this reason that the burst pressure ratings have been removed from the hose charts within the catalog.

Care must also be taken when looking at the "weakest link" of the hose assembly. A hose assembly is rated at the maximum working pressure of the hose and the fitting component. Therefore the maximum working pressure of the hose assembly is the lesser of the rated working pressure of the hose and the end connections used.

To mix and match components is to increase the risk of hose failure – a dangerous situation regardless of setting or application.

Here is an example: An F471TC0101040404-60" hose assembly (which consists of 471TC-4 hose and two 10143-4-4 fittings) would have a maximum working pressure of the lesser of the three components. In this case the fittings have a 12,000 psi rating. The hose has a 5,800 psi rating. Therefore the maximum pressure rating of the hose assembly would be 5,800 psi. Pressure ratings for each Parker end connection can be found on the Pressure Rating of Hose End Connections – PSI Chart in Section E.

Hose Overview page A-6 to A-7.



Pressure Rating of Hose End Connections page E-43.

Pressure spikes can occur during machine operation in an instant. They can occur so quickly in fact, that standard glycerin filled gages will never detect them. Using a pressure diagnostic system like Parker's Senso Control can help detect how often and how drastic these pressure spikes are. Contact your Parker representative today.