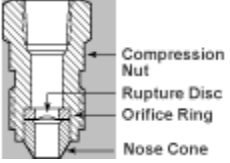

Safety Rupture Discs

Optional Fittings

All pressure vessels must be equipped with a primary pressure relief device and in virtually all cases this is a rupture disc.

The standard rupture disc used on Parr vessels is a pre-bulged metal disc designed to fail in tension at the rated pressure. We have chosen Alloy 600 for our standard discs for two reasons. First, its burst pressure is not significantly effected by the operating temperature so the burst pressure will remain within 8% of the room temperature rating over its entire operating temperature range. Secondly, Alloy 600 has good chemical resistance to a broad range of materials. In many cases we can add a thin gold foil to the inside face of the disc for added corrosion protection. Discs made of Alloy C-276, Tantalum and other materials are available on special order.

If conventional rupture discs are repeatedly stressed with pressures approaching their design burst pressure, they will yield and eventually fail at pressures below their design pressure. **To avoid this pre-bulged discs should not be subjected to pressures beyond approximately 70% of their rating in normal operations.**

All design codes require that the maximum rating of a relief device installed on a pressure vessel must not permit the operating pressure to rise more than 110% of the vessels maximum allowable working pressure, MAWP.

For users who need to operate up to the MAWP, rupture discs based upon a different operating principal are available. These discs are scored so that they break in shear as opposed to tension. Discs of this design can be used routinely up to 90% of their rated burst pressure. Scored discs are, unfortunately significantly more expensive than the conventional discs.

All Parr reactors and pressure vessels in small sizes up to and including 2 liters use 1/2 inch diameter rupture discs in assemblies having a 1/4 inch diameter orifice. 1 gallon and larger vessels use a 15/16 inch diameter rupture disc in assemblies having a 1/2 inch diameter orifice.

Users are invited to contact the Parr Technical Support Staff with any requirements for special rupture discs.

Rupture discs for Parr equipment must be matched to the range of the pressure gage, and must carry a rating higher than the intended maximum working pressure.

In general, the 1000 psi disc shown for the 1/4 inch orifice and the 600 psi disc shown for the 1/2 inch orifice are the minimum burst pressures available without going to more temperature sensitive and less corrosion resistant materials of construction.

When gages with ranges below this valve are installed on a reactor, Parr will install a spring- loaded relief valve to protect the gage in addition to the rupture disc which is the fail-safe device for the vessel.

A525HC Safety Head Used in Parr 1 and 2 Liter Reactors

Rupture Discs for 1/4" Orifice

Burst Rating psig	Inconel Disc No.	Gold Faced Inconel Disc	Scored Inconel Disc
1000	526HCPD	581HCPD	-
2000	526HCPF	581HCPF	526HCP21YD
3000	526HCPG	581HCPG	526HCP35YD
4000	526HCP40CT	581HCP40CT	-
5000	526HCPH	581HCPH	526HCP34YD
8000	526HCPJ	581HCPJ	-
12000	526HCPL	581HCPL	-

Rupture Discs for 1/2" Orifice

Rupture Discs for 1/2" Orifice		
Burst Rating psig	Inconel Disc No.	Scored Inconel Disc
1000	708HCP10CT	-
1500	708HCP16CT	-
2000	708HCP20CT	1608HCP23*
3000	708HCP30CT	1608HCP33*
3000	1415HCP30CT	-
4500	1415HCP45CT	-
*requires special holder		