

F-20 (F-12 Range) with 0.5” P.S. Piston Conversion Table (kPa)

Burst Pressure (BP) to Pull-Off Strength conversion table
For **F-12 Range** of **F-20 Piston** using **0.5 inch O.D. Pull-stub** and in units of **kPa**

PULL-OFF TENSILE STRENGTH (POTS) (kPa)

BP (psig)	0	1	2	3	4	5	6	7	8	9
10	4169	4590	5011	5432	5852	6273	6694	7115	7535	7956
20	8377	8798	9219	9639	10060	10481	10902	11322	11743	12164
30	12585	13006	13426	13847	14268	14689	15109	15530	15951	16372
40	16793	17213	17634	18055	18476	18896	19317	19738	20159	20580
50	21000	21421	21842	22263	22684	23104	23525	23946	24367	24787
60	25208	25629	26050	26471	26891	27312	27733	28154	28574	28995
70	29416	29837	30258	30678	31099	31520	31941	32361	32782	33203
80	33624	34045	34465	34886	35307	35728	36148	36569	36990	37411
90	37832	38252	38673	39094	39515	39935	40356	40777	41198	41619
100	42039									

Formula used to generate piston conversion table:

$$\text{POTS} = \frac{(\text{BP} \times \text{Ag}) - \text{C}}{\text{Aps}}$$

Where:

POTS = Pull-off Tensile Strength (psi)

BP = Burst Pressure (psi)

Ag = Contact Area of gasket and reaction plate = **11.98 in²** for F-12 Piston

C = Piston Constant = **1.10 lbs** +/- 1.5% for F-12 Range of F-20 Piston

Aps = Area of Pull-stub = **0.1963 in²** for 0.5” Pull-stub

EXAMPLE: A test is performed using F-12 range of the F-20 piston and a 0.5” Pull-stub. When separation occurs, the piston Pressure Gauge on the control module indicates a burst pressure of 55 psi. First, locate the row that corresponds to 50 psig to reference the “tens” place (under **BP** in the table above.) Then find the 5 column to reference the “ones” place. The Pull-Off Tensile Strength Associated with this test is **23104 kPa**.