



31 Assortment

A Practical, Trouble Free,
Series of Round Wire Springs
for General Use

Something new in commercial stock assortments for the
average small user . . . engineered to fit the job

PARAGON *SPRING COMPANY*

4435-45 W. RICE STREET CHICAGO, ILLINOIS 60651

AREA CODE 312-489-6300 FAX 489-6356

The Paragon 31 Compression Spring Assortment has been carefully engineered for both General Shop Applications and for use in Development or Experimental Departments.

As Paragon's engineers have made every effort to overcome the faults of ordinary assortments which seem to contain "every spring except the one needed," their design efforts were not confined to the springs alone; rather, loadings and dimensions were analyzed to assure the user of greater probability in having the correct spring on hand, whatever the application.

The springs are made especially for the assortment, to the same high standards as those of custom orders.

Spring Number	Wire Diam.	Fits Hole	Fits Rod	Pitch	Comp. Load	Constant
31-1	.115	1½	1 ¹ / ₈	1 ¹ / ₈	73#	128
31-2	.115	1¼	7/8	1 ¹ / ₂	75#	211
31-3	.115	1 ¹ / ₈	¾	¾	50#	302
31-4	.105	1 ¹ / ₈	¾	1 ¹ / ₂	65#	216
31-5	.105	1	5/8	¼	46#	319
31-6	.105	¾	½	1 ³ / ₆₄	69#	702
31-7	.091	1 ³ / ₈	1	1 ¹ / ₂	26#	59
31-8	.091	1¼	7/8	1 ¹ / ₂	33#	89
31-9	.091	1 ¹ / ₈	¾	¾	23#	121
31-10	.091	1	1 ¹ / ₈	¾	31#	166
31-11	.091	¾	7/8	¼	70#	444
31-12	.091	5/8	5/8	5/8	61#	637
31-13	.080	1¼	1	7/8	11#	32
31-14	.080	1	¾	7/8	30#	85
31-15	.080	7/8	5/8	5/8	33#	143
31-16	.080	¾	½	¾	30#	148
31-17	.080	5/8	3/8	5/8	43#	339
31-18	.080	½	¼	¾	57#	666
31-19	.062	1 ³ / ₈	5/8	¼	11#	57
31-20	.062	¾	1 ¹ / ₈	¼	16#	83
31-21	.062	1 ¹ / ₈	7/8	1 ¹ / ₈	16#	130
31-22	.062	5/8	3/8	1 ¹ / ₈	22#	177
31-23	.062	1 ¹ / ₈	1 ¹ / ₈	1 ¹ / ₈	33#	265
31-24	.062	½	3/2	3/2	36#	387
31-25	.062	7/8	¼	1/8	34#	550
31-26	.032	3/8	¼	1/8	5#	52
31-27	.032	1 ¹ / ₈	3/2	1/8	7#	82
31-28	.032	¼	5/2	3/2	11#	188
31-29	.032	3/2	1/8	1 ¹ / ₈	9 ⁶ / ₁₀ #	316
31-30	.026	1 ¹ / ₈	3/2	1 ¹ / ₈	8 ³ / ₁₀ #	228
31-31	.026	1/8	1 ¹ / ₈	3/4	16 ³ / ₄ #	836

All springs 11 inches long, over all, with open ends not ground (plain).

Note: The above tables have been carefully checked and are commercially correct. We reserve the right to make changes at our discretion and without notification.

General Information:

SPRING NUMBER: Is given for easy identification should it be necessary to re-order; either to keep the assortment complete, or to purchase a quantity (large or small) made to exact length needed. We can furnish the latter with closed ends not ground or with closed ends ground.

WIRE DIAMETER: All sizes are shown in decimal (inches) dimensions.

PITCH: Equals one wire diameter plus one coil space. To determine "travel per coil," subtract one wire size from the PITCH dimension. Example: (Spring #31-1)—PITCH equals $\frac{1}{8}$ " (.687) subtract .115 (wire diam.). The resulting figure .572" is the space between coils or "travel per coil." Moreover, to find total travel for any given spring, multiply the number of coils by the space.

COMPRESSED (SOLID) HEIGHT: To find closed length of spring, multiply number of coils by the wire size.

TOTAL LOAD: Figure shown under this heading is the total (maximum capacity, in pounds, spring is capable of carrying when completely compressed to solid height (coils touching). **Regardless of the length to which the spring is cut, the same solid load will prevail.** By way of explanation, the solid load will not change . . . only the load rate (build up) per inch of travel changes. The longer the spring, the more gradual the "build up" in load (because of greater travel) . . . the shorter the spring, the more abruptly the total load is reached (because of less travel). This explains why two springs of identical wire, diameter, and pitch, but of different lengths will seem unrelated in loadings. The short spring will be strong, while the long spring will feel mushy . . . nevertheless, both springs will register identical loadings when fully compressed. Therefore, when choosing a spring from this assortment by "feel" . . . **hold the spring at the length you expect to use.**

CONSTANT: This figure is a "key" for determining by calculation, the "load rate per inch of travel" of a cut length of spring. Moreover, this "key" enables the user to cut the spring to correct number of coils so as to obtain a definite, required, load rate.

EXAMPLE FOR KNOWN NUMBER OF COILS (Spring #31-13): This spring shows a constant of 32. Having a cut length with 8 coils, we divide 8 (number of coils) into 32 (constant) which equals 4. The load rate per inch of travel is 4 pounds.

EXAMPLE FOR DESIRED LOAD RATE (Spring #31-13): Having an application calling for a 2 pound per inch of travel, load rate, we divide 2 (load rate needed) into 32 (constant) which equals 16. The number of coils necessary is 16; therefore, we cut the stock spring to 16 coils and the rate will be 2 pounds per inch.

Springs of the 31 assortment are safely stressed and may be depended upon to give highly satisfactory service.

When choosing, and subsequently installing a spring, be certain the coils do not clash during its operation cycle. In fact, for best results, we suggest that the spring be compressed not more than three-quarters of the distance between its free length and its fully compressed (solid) position. Of course, in most cases on hand tools, etc. the maximum travel may be used without damage to the spring.

**INQUIRIES INVITED ON YOUR PRODUCTION REQUIREMENTS.
NO ORDER TOO SMALL FOR PROMPT ATTENTION.**

**DON'T HESITATE TO CALL ON PARAGON
WHATEVER YOUR SPRING REQUIREMENTS**

INQUIRIES GIVEN PROMPT ATTENTION

**WE HAVE A SPECIAL DEPARTMENT FOR
SMALL ORDERS**

*Paragon
springs
PS Your product deserves
the best!*

