Trigger Plunger Spring

ROUND SPRING DESIGN INPUTS

Please Fill Out the Following:

1 (A) Type of wire
- (1) Music wire (ASTM-A228)
- (2) Stainless Steel (ASTM-A313)
- (3) Hard Drawn (ASTM-A227)
- (4) Oil Tempered (ASTM-A229)

4 (B) Type of spring ends
- (1) Plain ends (total coils = active coils)
- (2) Plain and ground ends (total coils = active coils + 1.)
- (3) Squared ends (total coils = active coils + 2.)
- (4) Squared and ground ends (total coils = active coils + 2.)

.125 in. (C) Hole diameter (if applicable)

.005 in. (D) Free length of clearance between hole diameter and OD of spring (if applicable)

NA in. (E) Pin diameter (if applicable)

NA in. (F) Min. free length clearance between pin diameter and ID of spring (if applicable)

3 lb. (G) P1 (lbs. of force at L1)

.732 in. (H) L1 (maximum length of spring while in part)

6 lb. (I) P2 (lbs. of force at L2)

.632 in. (J) L2 (minimum length of spring while in part)

65 % (K) Indicate maximum stress as a function of tensile strength

Solid (L) Indicate whether this stress is to be taken at solid stress or at L2 (Static Application only)

— in/sec. (M) Activating mass velocity (Dynamic Application only)

— (N) Indicate whether or not a drawing is to be made

SPRING ANALYSIS OUTPUT
19 Oct 1984 11:16:04

For:
ROUND MUSIC WIRE WITH SQUARED AND GROUND ENDS

OUTSIDE DIAMETER.....	.120+/- .004
WIRE DIAMETER.....	.022+/- .0003
HOLE DIAMETER.....	.125
PIN DIAMETER.....	0.000
TOTAL TURNS.....	20.0
ACTIVE TURNS.....	18.0
FREE LENGTH.....	.875+/- .030
SOLID HEIGHT.....	.440+/- .006
WAHL CORRECTGION FACTOR...	1.36
SPRING RATE.....	19.88
DIA. CHANGE FL to SH.....	.0012
MEAN DIAMETER.....	.098
SPRING INDEX.....	4.45

STRESS AND LOAD:

LOAD AT .732in.....	2.842
EXPECTED LOAD VARIATION...	2.64 TO 3.04
STRESS AT .732in.....	90276.5
LOAD AT .632in.....	4.830
EXPECTED LOAD VARIATION...	4.49 TO 5.17
STRESS AT .632in.....	153406.9
FORCE TO SOLID.....	8.65
STATIC STRESS AT SOLID....	274617.3
TOTAL STRESS AT SOLID.....	274617.3
ENERGY.....	.38
TENSILE STRENGTH.....	341995.6
DESIGN STRESS AS 62%.....	212037.3
TOTAL STRESS AS PERCENT OF TENSILE STRESS.	80.3