

THREAD TENSION STABILIZING OF THE DEVICE ELASTIC ELEMENT PERMANENT POWER UNDER THE INFLUENCE CHARACTERISTICS EXPERIMENTAL ANALYSIS

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Annotation. Textile in the industry thread again wrapping in the process thread tension stabilizing of devices elastic element that is springs characteristics research TW2 - D machines at Artsoft Holding in the example of of springs singleness coefficients experimental determined. Research as a result spring up to 32–33% of virginity was unevenness of the bobbins mass and density various to be main reason that proven. The spring time to pass with elasticity properties decrease analysis made.

Keywords: Thread tension, stabilizing device, spring single, TW2-D machine, bobbin density, experimental analysis.

Textile in the industry thread cooking and again wrapping in the processes ready product quality determinant the most important from parameters one thread of tension permanent from storage consists of. To the thread screw in giving and again wrapping in the process of tension variable to be of the bobbins every kind mass and in density to the formation take This is coming. in turn, next in stages technological problems and useful work coefficient come down to leave reason will be.

Namangan region large industry subject at the Artsoft Holding enterprise, which held practical research as a result technological on a chain serious imbalance This problem has been identified. study for the purpose thread stabilizing your device worker organ was to the spring attention focused. Researchers by spring virginity study for the purpose special device working It was released.

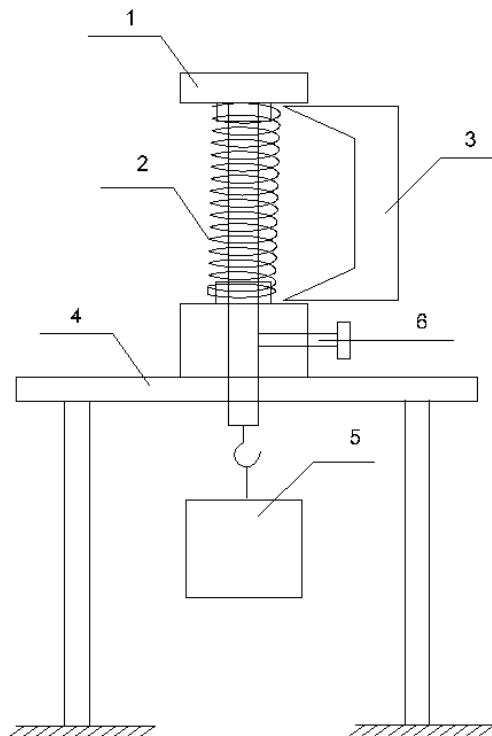


Figure 1. Spring elasticity (elasticity) tester special device.

1-Top plate, 2-Spring, 3-Barbell, 4-Device installed general support, 5- Load hanging on a spring, 6-Adjusting screw.

Figure 1 shows issued device schematic official cited. Device using of springs free in the state length and known power under the influence shrunk in the state length determination opportunity was created. [2]

Spring flexibility coefficient following expression through is defined as:

$$C = \frac{G_t}{l_0 - l_k}$$

Here: G_t — spring squeeze force, N;

l_0 — spring free in the state length, mm;

l_k — spring power under the influence shrunken in the state length, mm.

Based on this formula, the TW2-D model adding wrapping from cars received 20 pieces spring flexibility coefficients was determined. To the spring impact provider power amount when choosing in use of the thread linear the density is Nm 34/2. into account received. Thread wrapping in the process tension power of the thread maximum interruption 15–20% of the power to be recommendation [2] This to recommendations based on experience spring squeeze force is taken as 1.44 N This value is of the thread without interruption, one in rhythm wrapping provision was considered optimal for. Springs free in the state length and squeeze power under the influence length high to accuracy has was electronic scaled barbell circle using

measured. Prepared device using to the enterprise built-in TW2-D model adding wrapping from cars received 20 pieces spring mechanic properties studied. Obtained experience results summarized and presented in Table 1. Table information based on of springs flexibility indicators between noticeable differences existence was determined [3].

Adding wrapping from the car taken from products the most many encountered according to Analysis Table 1.

Table 1

On trial spring number	Spring free in the state length ,	Spring squeeze power	Spring squeezed in the state length,	Spring absolute deformation (difference),	Spring virginity (flexibility),	Spring of the wire diameter ,
No.	l_0 , mm	G , gr	l_k , mm	Δl , mm	C ; gr / mm	d; mm
1	26.12	144	20.36	5.76	25.00	0.5
2	26.32	144	19.98	6.34	22.71	0.5
3	27.04	144	21.27	5.77	24.96	0.5
4	27.65	144	22.03	5.62	25.62	0.5
5	24.8	144	18.83	5.97	24.12	0.5
6	29.64	144	23.62	6.02	23.92	0.5
7	26	144	19.45	6.55	21.98	0.5
8	25.48	144	22.85	2.63	54.75	0, 9
9	26.85	144	21.02	5.83	24.70	0.5
10	27.83	144	22.36	5.47	26.33	0.5
11	27.52	144	21.58	5.94	24.24	0.5
12	28.7	144	22.47	6.23	23.11	0.5
13	28.1	144	22.12	5.98	24.08	0.5
14	26.58	144	20.16	6.42	22.43	0.5
15	27.56	144	21.55	6.01	23.96	0.5
16	26.64	144	20.62	6.02	23.92	0.5
17	24	144	19.85	4.15	34.70	0.5 (cut)
18	30	144	23.22	6.78	21.24	0.5

19	29.5	144	23.58	5.92	24.32	0.5
20	28.6	144	22.2	6.4	22.50	0.5

Information analysis this showed that some of springs flexibility high that is 54.75 g / mm However, in some and this indicator noticeable at the level low which is 21.24 gr / mm. In particular, the 8th order spring flexibility high to be determined and this spring of the wire diameter 0.9 mm to equality reason happened determined. The remaining on springs and wire diameter 0.5 mm what organization reached is, this their mechanic strength and to the elasticity directly impact Also, the spring of the 18th order length artificial accordingly elongated because of his/her flexibility decreased was observed. As a result, this spring installed wrapping in the head winding of threads relatively low density This situation has been identified. spring initial mechanic properties when broken thread of tension stability not provided shows. Two spring flexibility indicators into account if not taken, the rest springs of flexibility average unevenness around 32–33% happened This was determined. indicator working being released of the bobbin's weights unevenness with almost suitable arrival This is observed. thread wrapping in the process coil weight unevenness directly of springs flexibility differences with related that confirms [4].

Conclusion. Transferred initial analyses this shows that the tension stable not main cause, tension device worker organ was spring characteristic time to pass with Experience within from the car undress taken to the spring special device using permanent power impact was carried out. Time to pass with spring absolute deformation increase This situation was observed. spring of the material internal elasticity properties weakening and static loading under his/her mechanic resistance from the decline evidence gives. This point of view from the perspective of the spring under load such experimental characteristic to study, its to time related without change laws determination and this basically tension stabilizing devices optimization current is a scientific and practical issue. This problem solution through one kind dense and standard in the mass bobbins formation possibility is created.

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