

Design task —screw jack with driven screw

Design a simple screw jack with the screw as the driven element. The following parameters are given: load Q [kN] and lifting height (screw pitch) H [mm]. Select the materials for the screw and the nut independently. The actuator is to be implemented by an operating rod (handle). Adopt a safety factor x_w in the range 3,5 – 6.

Task No.	Q [kN]	H [mm]	Task No.	Q [kN]	H [mm]
1	28,5	140	51	28,5	240
2	28	145	52	28	245
3	30,5	150	53	30,5	250
4	27	155	54	27	255
5	30	160	55	30	260
6	29	165	56	29	265
7	25,5	170	57	25,5	270
8	29,5	175	58	29,5	275
9	24	180	59	24	280
10	23	185	60	23	285
11	27,5	190	61	27,5	290
12	26,5	195	62	26,5	295
13	22,5	200	63	22,5	250
14	26	205	64	26	255
15	22	210	65	22	260
16	24,5	215	66	24,5	265
17	25	220	67	25	270
18	20,5	225	68	20,5	275
19	23,5	230	69	23,5	280
20	19,5	235	70	19,5	285
21	19	240	71	19	290
22	18	245	72	18	295
23	15	250	73	15	300
24	21	255	74	21	305
25	20	260	75	20	310
26	15,5	265	76	15,5	315
27	16,5	270	77	16,5	320
28	14	275	78	14	325
29	17,5	280	79	17,5	330
30	18,5	285	80	18,5	335
31	17	290	81	17	340
32	21,5	295	82	21,5	345
33	12,5	300	83	12,5	350
34	13	305	84	13	355
35	16	310	85	16	360
36	14,5	315	86	14,5	365
37	11	320	87	11	370
38	11,5	325	88	10	375
39	13,5	330	89	13,5	380
40	12	335	90	12	385
41	13	340	91	13	390
42	14	345	92	14	395
43	15	350	93	15	400