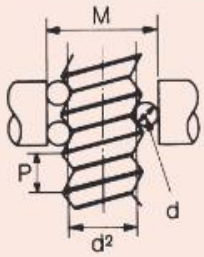
3-Wire Measuring Process





P =thread pitch
d_D =measuring wire Ø
d_2 =pitch diameter
M =theoretical dimension at measuring pressure d
a =pitch angle
d =correction factor

$$M = d_2 + \frac{d_D}{\sin\frac{a}{2}} - \frac{P}{2\tan\frac{a}{2}} + d_D + d$$

$$d = \frac{d_D}{2} \cdot \frac{P^2}{p^2} \cdot \frac{\cos\frac{a}{2} \cdot \cot\frac{a}{2}}{d_2^2}$$

Nominal	Thread pitch P	Pitch ø d2	Measuring wire ø dD	Measurement over wire M	(M-d2)
M 1	0,25	0,838	0,170	1,133	0,295
M 1,2	0,25	1,038	0,170	1,332	0,294
M 1,4	0,30	1,205	0,170	1,456	0,251
M 1,7	0,35	1,473	0,220	1,831	0,358
M 2	0,40	1,740	0,250	2,145	0,405
M 2,3	0,40	2,040	0,250	2,444	0,404
M 2,6	0,45	2,308	0,290	2,789	0,481
M 3	0,50	2,675	0,290	3,113	0,438
M 3,5	0,60	3,110	0,335	3,596	0,486
M 4	0,70	3,545	0,455	4,305	0,760
M 5	0,80	4,480	0,455	5,153	0,673
M 6	1,00	5,350	0,620	6,346	0,996
M 8	1,25	7,188	0,725	8,282	1,094
M 10	1,50	9,026	0,895	10,414	1,388
M 12	1,75	10,863	1,100	12,650	1,787

Nominal	Thread pitch P	Pitch ø d2	Measuring wire ø dD	Measurement over wire M	(M-d2)
M 14	2,00	12,701	1,350	15,021	2,320
M 16	2,00	14,701	1,350	17,021	2,320
M 20	2,50	18,376	1,650	21,163	2,787
M 22	2,50	20,376	1,650	23,163	2,787
M 24	3,00	22,051	2,050	25,606	3,555
M 27	3,00	25,051	2,050	28,605	3,554
M 30	3,50	27,727	2,050	30,848	3,121
M 33	3,50	30,727	2,050	33,848	3,121
M 36	4,00	33,402	2,550	37,591	4,189
M 39	4,00	36,402	2,550	40,590	4,188
M 42	4,50	39,077	2,550	42,832	3,755
M 45	4,50	42,077	2,550	45,832	3,755
M 48	5,00	44,752	3,200	50,025	5,273
M 52	5,00	48,752	3,200	54,024	5,272
M 56	5,50	52,428	3,200	57,267	4,839
M 60	5,50	56,428	3,200	61,267	4,839

Series 313

This three-wire measuring process is one of the most precise procedures for determining the pitch diameter of threads. It offers you the following benefits:

- The measuring wires are hardened and precision-lapped.
- They are placed onto the spindle and anvil of an outside micrometer, allowing you to measure the pitch diameter of threads.



313-101

1) Wire in set

No.	Accuracy	Remarks	Content of Set
313-101	DIN 2269, Grade 1	For micrometer spindle diameter 6,35 mm	18 pairs of wires D= 0,17 - 3,2 mm
313-102	DIN 2269, Grade 1	For micrometer spindle diameter 8 mm	18 pairs of wires D= 0,17 - 3,2 mm

Individual wires (content of 313-101)
One pair, support spindle ø 6.35 mm

No.	Diameter (D)	Accuracy
952131	0,17 mm	DIN 2269, Grade 1
952132	0,195 mm	DIN 2269, Grade 1
952133	0,22 mm	DIN 2269, Grade 1
952134	0,25 mm	DIN 2269, Grade 1
952135	0,29 mm	DIN 2269, Grade 1
952136	0,335 mm	DIN 2269, Grade 1
952137	0,39 mm	DIN 2269, Grade 1
952138	0,455 mm	DIN 2269, Grade 1
952139	0,53 mm	DIN 2269, Grade 1
952140	0,62 mm	DIN 2269, Grade 1
952141	0,725 mm	DIN 2269, Grade 1
952142	0,895 mm	DIN 2269, Grade 1
952143	1,1 mm	DIN 2269, Grade 1
952144	1,35 mm	DIN 2269, Grade 1
952145	1,65 mm	DIN 2269, Grade 1
952146	2,05 mm	DIN 2269, Grade 1
952147	2,55 mm	DIN 2269, Grade 1
952148	3,2 mm	DIN 2269, Grade 1

Individual wires (content of 313-102)
One pair, support spindle ø 8 mm

No.	Diameter (D)	Accuracy
952149	0,17 mm	DIN 2269, Grade 1
952150	0,195 mm	DIN 2269, Grade 1
952151	0,22 mm	DIN 2269, Grade 1
952152	0,25 mm	DIN 2269, Grade 1
952153	0,29 mm	DIN 2269, Grade 1
952154	0,335 mm	DIN 2269, Grade 1
952155	0,39 mm	DIN 2269, Grade 1
952156	0,455 mm	DIN 2269, Grade 1
952157	0,53 mm	DIN 2269, Grade 1
952158	0,62 mm	DIN 2269, Grade 1
952159	0,725 mm	DIN 2269, Grade 1
952160	0,895 mm	DIN 2269, Grade 1
952161	1,1 mm	DIN 2269, Grade 1
952162	1,35 mm	DIN 2269, Grade 1
952163	1,65 mm	DIN 2269, Grade 1
952164	2,05 mm	DIN 2269, Grade 1
952165	2,55 mm	DIN 2269, Grade 1
952166	3,2 mm	DIN 2269, Grade 1

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Mitutoyo