VICIVISION

FITTINGS AND TURNED THREADS: HOW TO MEASURE THEM IN A FEW SECONDS

One specific software tool for measuring threaded elements, fittings, screws and bolts.

Measuring Fittings, Turned Threads and Screws

It is often difficult for manufacturers to get **accurate** and **objective results** when measuring **turned threads**, typical features on fittings and shafts, and **rolled threads**.

By working closely alongside our **clients** and listening to their needs, we have developed a specific software for **measuring fittings**.

In addition to standard measurements, such as diameter, length, angle, radius and chamfers, **specific dimensions** for threaded parts can be obtained.

A single software tool can **automatically** measure **fittings** and **turned threads**, as well as **screws** and **bolts**, in a matter of seconds.

Cylindrical Threads – Static Measurements

VICIVISION software calculates the following on **cylindrical threads**:

- Pitch
- Nominal diameter
- Mean diameter
- Core diameter
- Roll dimension
- Crest angle
- Crest cut-off

Conic Threads – Static Measurements

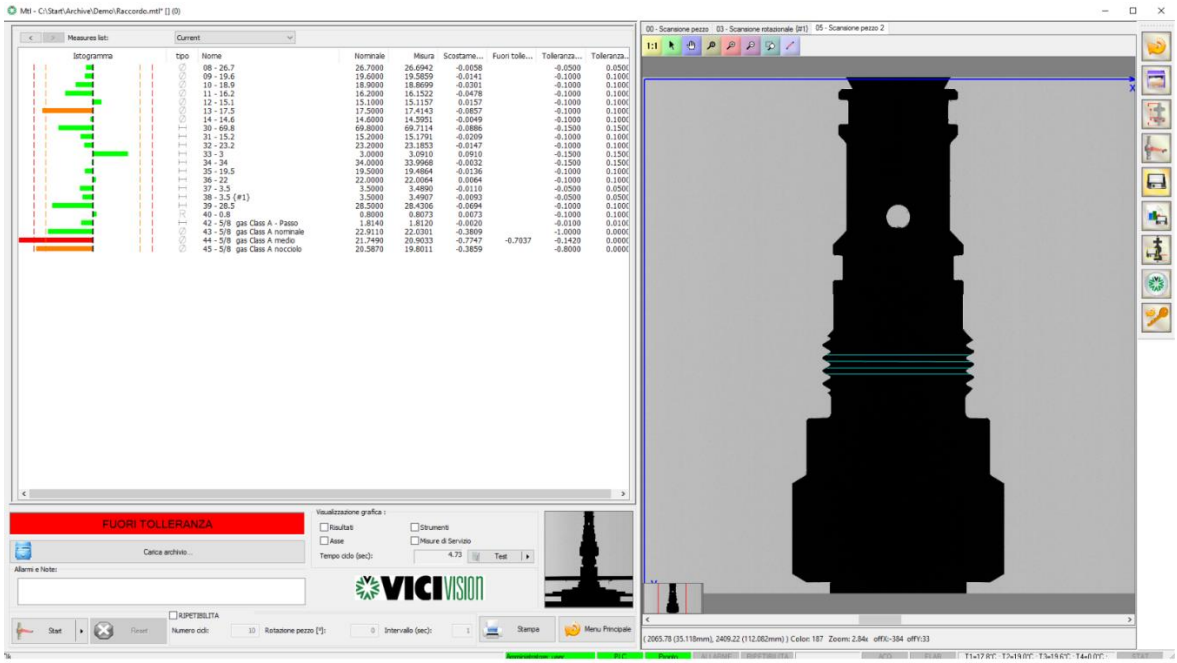
The following can be calculated on **conic threads**:

- Pitch
- Mean diameter
- Core diameter
- Crest cut-off
- Distance of known diameter (gauge length)
- Thread taper (thread angle)
- Root taper angle
- Diameter at a known position

Form Measurements

In addition to the previously listed static measurements, a series of dynamic measurements can also be taken on threads:

- Roundness
- Coaxiality
- Run-out
- Cylindricity



VICIVISION - MTL Measure report

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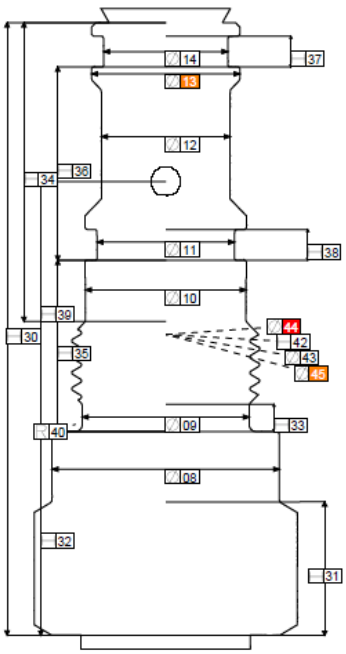
Amministratore: user	28-02-2019 10-49-15	Unità di misura: [mm , ° ' "]	.\Archive\Demo\ modello: Raccordo

Nota di programma:

Nota:



GRAP.	tipo	Nome	Nominale	Misura	Scostamento	FUORI TOL.	TOL. INF.	TOL. SUP.
	∅	08 - 26.7	26.7000	26.6942	-0.0058		-0.0500	0.0500
	∅	09 - 19.6	19.6000	19.5859	-0.0141		-0.1000	0.1000
	∅	10 - 18.9	18.9000	18.8699	-0.0301		-0.1000	0.1000
	∅	11 - 16.2	16.2000	16.1522	-0.0478		-0.1000	0.1000
	∅	12 - 15.1	15.1000	15.1157	0.0157		-0.1000	0.1000
	∅	13 - 17.5	17.5000	17.4143	-0.0857		-0.1000	0.1000
	∅	14 - 14.6	14.6000	14.5951	-0.0049		-0.1000	0.1000
	⊢	30 - 69.8	69.8000	69.7114	-0.0886		-0.1500	0.1500
	⊢	31 - 15.2	15.2000	15.1791	-0.0209		-0.1000	0.1000
	⊢	32 - 23.2	23.2000	23.1853	-0.0147		-0.1000	0.1000
	⊢	33 - 3	3.0000	3.0910	0.0910		-0.1500	0.1500
	⊢	34 - 34	34.0000	33.9968	-0.0032		-0.1500	0.1500
	⊢	35 - 19.5	19.5000	19.4864	-0.0136		-0.1000	0.1000
	⊢	36 - 22	22.0000	22.0064	0.0064		-0.1000	0.1000
	⊢	37 - 3.5	3.5000	3.4890	-0.0110		-0.0500	0.0500
	⊢	38 - 3.5 (#1)	3.5000	3.4907	-0.0093		-0.0500	0.0500
	⊢	39 - 28.5	28.5000	28.4306	-0.0694		-0.1000	0.1000
	R	40 - 0.8	0.8000	0.8073	0.0073		-0.1000	0.1000
	⊢	42 - 5/8 gas Class A - Passo	1.8140	1.8120	-0.0020		-0.0100	0.0100
	∅	43 - 5/8 gas Class A nominale	22.9110	22.0301	-0.3809		-1.0000	0.0000
	∅	44 - 5/8 gas Class A medio	21.7490	20.9033	-0.7747	-0.7037	-0.1420	0.0000
	∅	45 - 5/8 gas Class A nocciolo	20.5870	19.8011	-0.3859		-0.8000	0.0000

Screws and Bolts – Static Measurements

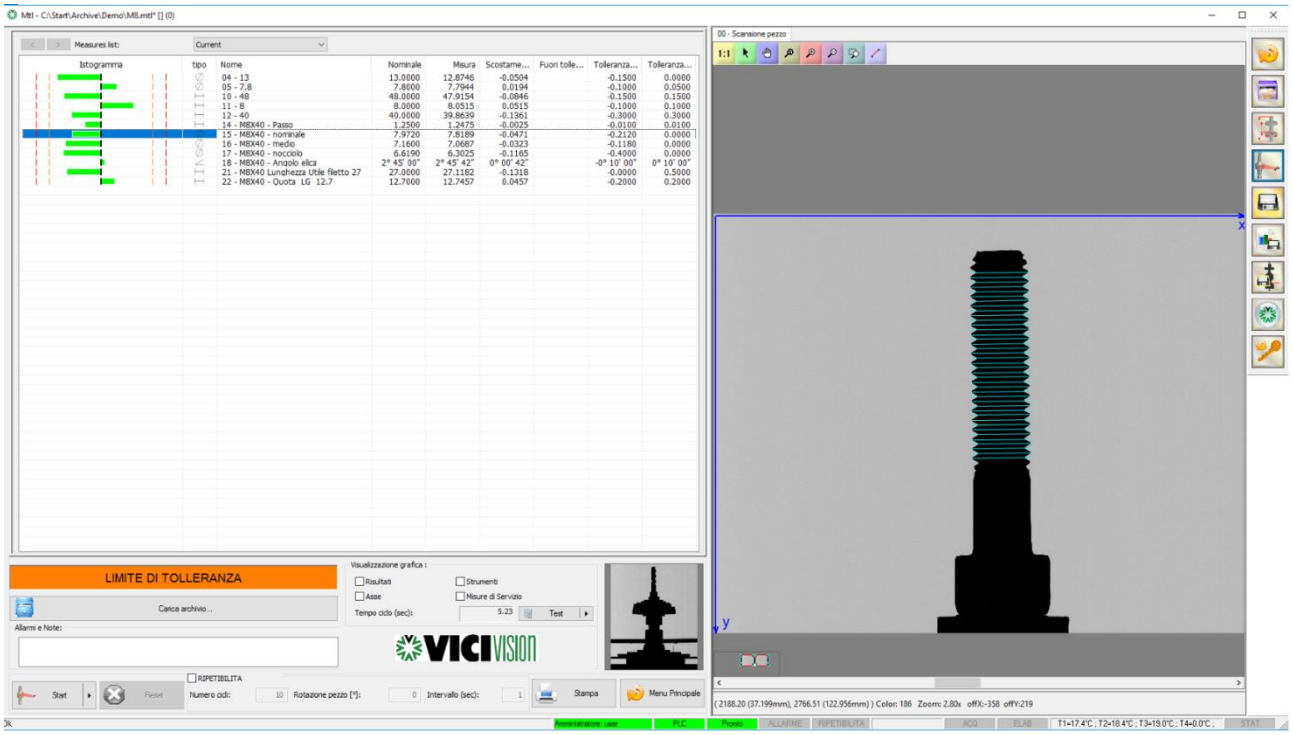
As well as standard thread measurements, such as pitch, nominal diameter, mean diameter and core diameter, we have developed **functional measurements for the production** of **screws** and **bolts** with **rolled threads**:

- Helix angle (to see if the rolls “slide”)
- Single position of the NG (not good) diameter – to check if a single crest or groove is not correctly formed.
- LG dimension

Screws and Bolts – Form Measurements

A number of dynamic measurements are also available for screws and bolts.

In addition to roundness, coaxiality, run-out and cylindricity, we have developed a **specific software** for **trilobe screws**.



VICIVISION - MTL Measure report

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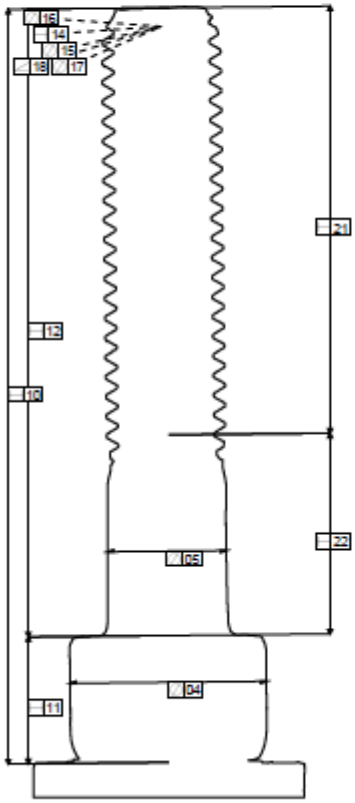
Nota di programma:

Nota:



GRAP.	tipo	Nome	Nominale	Misura	Scostamento	FUORI TOL	TOL. INF.	TOL. SUP.
	∅	04 - 13	13.0000	12.8746	-0.0504		-0.1500	0.0000
	∅	05 - 7.8	7.8000	7.7944	0.0194		-0.1000	0.0500
	⊢⊣	10 - 48	48.0000	47.9154	-0.0846		-0.1500	0.1500
	⊢⊣	11 - 8	8.0000	8.0515	0.0515		-0.1000	0.1000
	⊢⊣	12 - 40	40.0000	39.8639	-0.1361		-0.3000	0.3000
	⊢⊣	14 - M8X40 - Passo	1.2500	1.2475	-0.0025		-0.0100	0.0100
	∅	15 - M8X40 - nominale	7.9720	7.8189	-0.0471		-0.2120	0.0000
	∅	16 - M8X40 - medio	7.1600	7.0687	-0.0323		-0.1180	0.0000
	∅	17 - M8X40 - nocciolo	6.6190	6.3025	-0.1165		-0.4000	0.0000
	∠	18 - M8X40 - Angolo elica	2° 45' 00"	2° 45' 42"	0° 00' 42"		0° 10' 00"	0° 10' 00"
	⊢⊣	21 - M8X40 Lunghezza Utile filetto 27	27.0000	27.1182	-0.1318		-0.0000	0.5000
	⊢⊣	22 - M8X40 - Quota LG 12.7	12.7000	12.7457	0.0457		-0.2000	0.2000

For the measurement of threads, screws and bolts, VICIVISION software provides **dimensions** and **tolerances** on **pre-filled charts** in the database for the **majority of classes**: ISO for triangular and trapezoidal profiles, Gas, Screws, UNC_UNF_UNEF, NPT_NPTF.

This eliminates the repeated search for nominal values and tolerances and therefore **speeds up programming**.

Furthermore, the tables are open, which means that the operator can duplicate them and **manually insert new dimensions and tolerances** where necessary, to add or remove machining allowance.