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Find the *Newport / Klinger / Micro-Controle UT 50.20* at our website: *Click HERE*

UT 100.-- MS2



- Manually driven with differential drive for dual sensitivity
- Provided without graduated knob

UT 100.25	MS 2	**354 424**
UT 100.50	MS 2	**354 425**
UT 100.75	MS 2	**354 426**
UT 100.100	MS 2	**354 427**
UT 100.125	MS 2	**354 428**
UT 100.150	MS 2	**354 429**

UT 100.-- MN



- Manually driven with differential drive with provides dual sensitivity (1 μm and 0.1 μm)
- Numerical readout: in millimeters, tenths of millimeters and interpolation to hundredths of millimeters
- 10:1 vernier allows estimation of microns.

UT 100.25	MN	**354 494**
UT 100.50	MN	**354 495**
UT 100.75	MN	**354 496**
UT 100.100	MN	**354 497**
UT 100.125	MN	**354 498**
UT 100.150	MN	**354 499**

UT 100.-- MS + GS



Manually driven with incremental encoder

1 increment = 1 μm or 0.1 μm

		1 μm	0,1 μm
UT 100.25	MS + GS	**354 444**	**354 344**
UT 100.50	MS + GS	**354 445**	**354 345**
UT 100.75	MS + GS	**354 446**	**354 346**
UT 100.100	MS + GS	**354 447**	**354 347**
UT 100.125	MS + GS	**354 448**	**354 348**
UT 100.150	MS + GS	**354 449**	**354 349**

UT 100.-- CC
UT 100.-- CC + GS



- DC motor driven with gear reduction
- Maximum speed 1 mm/sec for 1 micron res. (other speeds on request)

Optional:
Incremental encoder
1 increment = 1 micron **385 921**
= 0.1 micron **385 922**

UT 100.25	CC	**354 454**
UT 100.50	CC	**354 455**
UT 100.75	CC	**354 456**
UT 100.100	CC	**354 457**
UT 100.125	CC	**354 458**
UT 100.150	CC	**354 459**

UT 100.-- PP

For complete motor controller information see pages 135-140



	0.1 μm	1 μm	*10 μm
UT 100 25 PP	**354 474**	**354 484**	**354 554**
UT 100 50 PP	**354 475**	**354 485**	**354 555**
UT 100 75 PP	**354 476**	**354 486**	**354 556**
UT 100 100 PP	**354 477**	**354 487**	**354 557**
UT 100 125 PP	**354 478**	**354 488**	**354 558**
UT 100 150 PP	**354 479**	**354 489**	**354 559**

*10 μm units use UE71 motor, not pictured above.

- Stepping motor driven stage (with gear reduction)

	0.1 μm	1 μm	10 μm
• Step size available:			
• Start stop speed (reversing):	0.04 mm/sec	0.4 mm/sec	4.0 mm/sec
• Maximum speed (saturation):	.2 mm/sec	2 mm/sec	20 mm/sec

Other step sizes available on request

Options

	0.1 μm	1 μm	*10 μm
• Origin located at motor side of slide	**385 909**	**385 905**	**385 905**
• Origin located at center	**385 908**	**385 904**	**385 904**
• Origin located at end of travel opposite motor	**385 907**	**385 903**	**385 903**

- Encoder for position verification – **385 900**

potentiometer

- Resistance: 10 KΩ ± 10%
- Average linearity: 0.1%
- Available on all UT stages

Potentiometer Code No. — **385 902**

XY mounting

These stages are formed by mounting two UT 100 stages perpendicular to each other (tolerance $\pm 10^{-3}$ radian).

option:
high accuracy mounting tolerance $\pm 5 \times 10^{-5}$ rad. **354 017**

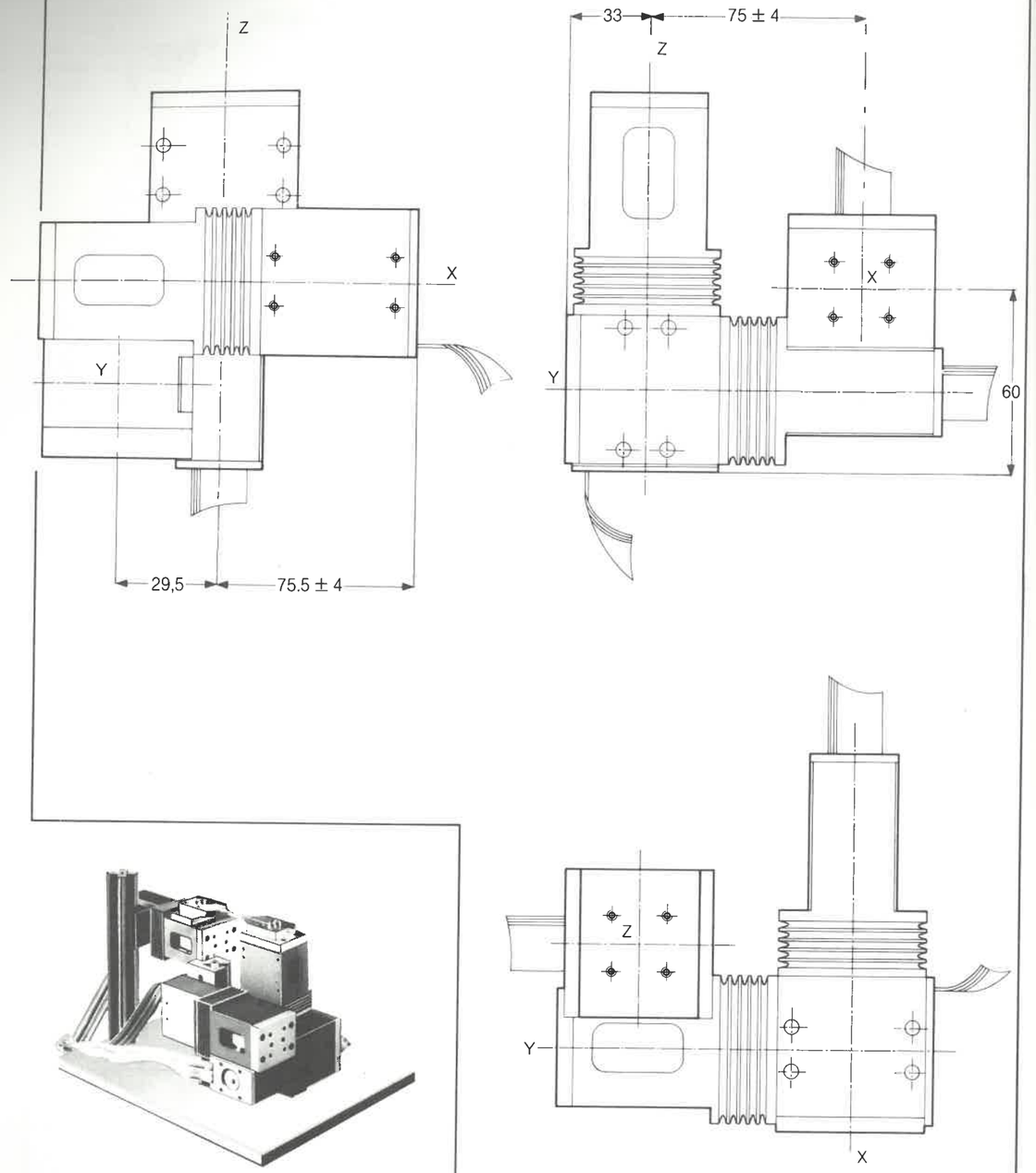
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Cat. No.

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30015
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40010
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080125
080126
080127

MF 08 PP

X Y Z
dimensional reference



Fiber alignment assembly
XYZ+X

354 243

UT 50.20

The UT 50.20 are high accuracy miniature translators (50 mm width) offered only with one range of motion (20 mm). The following versions can be provided:

- manually driven - 3 versions
- manually driven + incremental encoder
- DC motor driven
- DC motor driven + incremental encoder
- DC motor driven + potentiometer
- stepping motor, 1 step = 1 μm
- stepping motor, 1 step = 0.1 μm

options

The UT 50 class stages can be supplied with:

ENCODER - provides position information and verification of proper motor operation. See page 15 for detail.

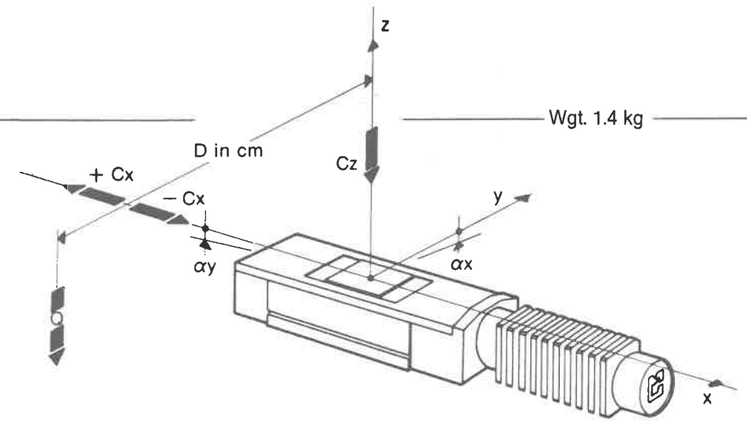
ORIGIN SEARCH - allows the stage to be returned to a pre-determined home position.

accuracy

Typical accuracy: 1 μm (see page 8)
Resolution: 0.1 μm
(except UT 50.20 PP 1 μm)
Straightness of trajectory:
pitch αy : 2×10^{-5} rad.
yaw αz : 10^{-5} rad.

load capacity

Wgt. 1.4 kg



C = Q (1 + 1/3 D) must be ⩽ Cz, with :

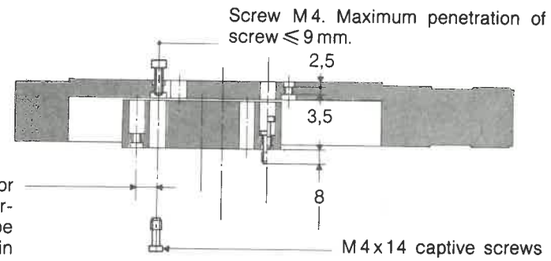
Cz =	nominal load capacity equivalent to the vertical load capacity	5	KgF
C =	load capacity		
Q =	actual load		
D =	distance from center of carriage in cm		
transversal deviation (roll). For Q × D = 1 cmN, αx =		0.5	10^{-5} rad.
longitudinal deviation (pitch). For Q × D = 1 cmN, αy =		1	10^{-5} rad.
load capacity + Cx direction		5	KgF
load capacity – Cx		0.5	KgF

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assembly detail
UT 100

There are two sets of mounting holes on UT 100 stages with spacing compatible for module 80 and module 120 stages. Intermodular adapter plates are available for assembling other modules.

The special design of the tapped M 4 / ⌀ 63 holes on the UT 100 stages and the use of captive screws permits these holes to be used as tapped holes or holes which are counterbored on the interior of the stage. Access to these holes is provided by clearance holes on the carriage and the body.

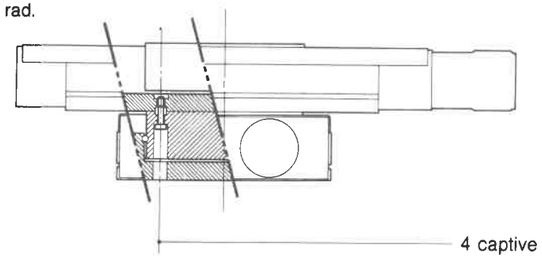


Note: When using captive screws for assembly of two UT stages, the clearance holes in the carriage must be aligned with the counterbored holes in the body of the stage.

CODE
354 305

XY assembly - UT 100/UT 100

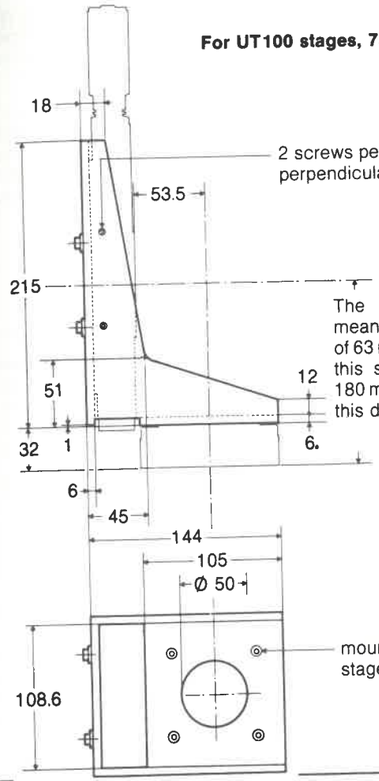
Factory mounted high accuracy
Orthogonality: 90° $\pm 5 \times 10^{-5}$ rad.



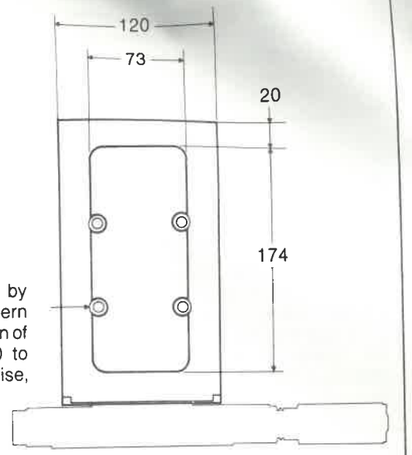
CODE
354 017

brackets for UT 100

For UT 100 stages, 75 to 150 mm travel



The vertical stage is mounted by means of 4 bridles on a square pattern of 63 mm. Therefore, the mid position of this stage is adjustable from 100 to 180 mm. Unless specified otherwise, this dimension is set at 140 mm.

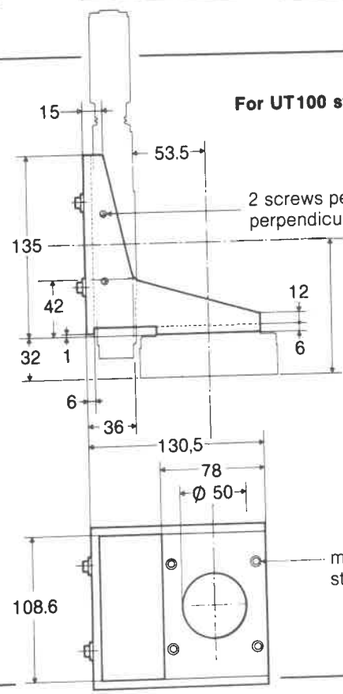


mounted on the horizontal stage by 4 M 4 screws ⌀ 63

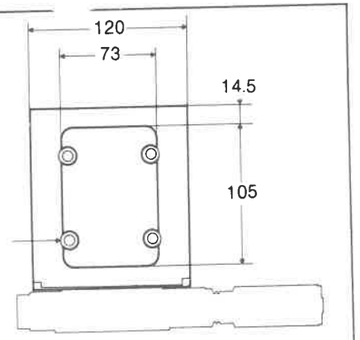


354 308

For UT 100 stages, 25 to 50 mm travel



The vertical stage is mounted by means of 4 bridles on a square pattern of 63 mm. Therefore, the mid position of this stage is adjustable from 92 to 108 mm. Unless specified otherwise, this dimension is set at 100 mm.



mounted on the horizontal stage by 4 M 4 screws

354 309

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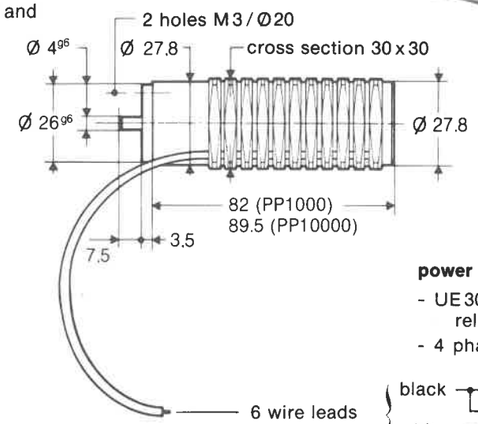
gearhead stepping motor — UE 30 PP

The UE 30 PP is a 4-phase variable reluctance stepping motor. The motor is supplied with an integral planetary gear reduction system for output of either 1,000 or 10,000 steps per revolution. This motor/gearhead system is used on many of our UT, UR, UZ and BG stages.

The optional encoder described below is mounted to the second shaft at the rear of the motor. As with all Klinger motors, the UE 30 is supplied in a radiator type housing for dissipation of heat.

These motors are not intended for use in mini-step operation, but can be controlled with either our CC-1 or MC 4 programmable controllers described on pages 135-140.





power supply information

- UE 30 PP motors are variable reluctance type stepping motors
- 4 phase

black — 6 — 1 – white/red
6 — 2 – red
white — 5 — 3 – green,
5 — 4 – white/green

- switching sequence: 1, 3, 2, 4
- resistance per phase: 160 Ω

characteristics:

- voltage: 28 V
- mechanical power: ≃ 3 W
- speed (start/stop): 400 Hz
- speed (saturation): 2000 Hz
- motor 48 steps per rev without gearing
- resistance: 160 Ω per phase
- inductance: 100 mH

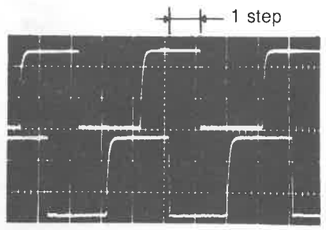
The maximum torque on the UE 30 PP 1000 is limited to 25 Ncm (limited by gear reduction)

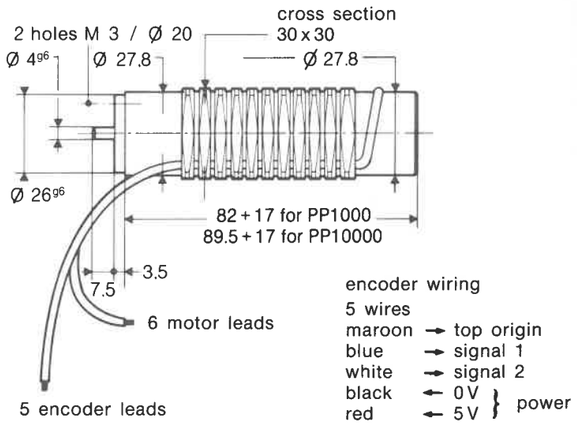
CODE NO.	
UE 30 PP 1000	385 707
UE 30 PP 10000	385 708

encoder option GS

The optical incremental encoder is offered on the UE 30 PP motors for position verification. When encoders are mounted on motor, the length of the motor housing is increased as shown.

The output of the encoder is provided in quadrature format.

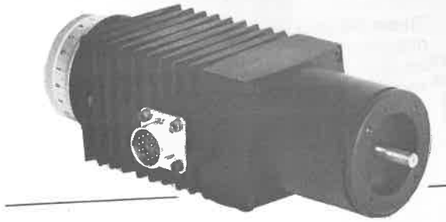




encoder wiring
5 wires
maroon → top origin
blue → signal 1
white → signal 2
black ← 0 V } power
red ← 5 V }

CODE **385 900**

UE 70 Series gearhead motors



UE 7 - PP drive units, consisting of a stepping or DC motor with an optional gearhead, are available in several power and speed versions with the additional option of an optical encoder (+ GS).

A graduated drum with 2 x 100 divisions provides a visual indication of motor operation. The position of the mark can be adjusted on the output shaft (by loosening the locking screw on the back cover).
When the motor is off, the knurled knob can be used as a manual drive.

UE 70 Series PP gearhead stepping motors

Motors permanent magnet, 4 phase:

black 6 — 1 white - red
2 red
white 5 — 3 green
4 white - green

The 4 - 2 - 3 - 1 switching order produces counterclokwise rotation of the motor and the output shafts of the different gearheads, as seen from the rear.

The number of steps per rotation of the gear motor is equal to the number of steps of the motor multiplied by the inverse of the motor's reduction ratio (e.g. 200 x 5 = 1,000).

characteristics

		UE 71 PP**	UE 72 PP**	UE 73 PP**
Inductance per phase	mH	10	8.6	2.9
Resistance per phase	Ω	5.1	3.4	1.16
Nominal current	A	1.2	1.8	3,2
Power	W	6	9	11
Number of steps/rev.		200	200	200
Torque — without gear	cm N	25	47	72
Torque — with gear				
1/3	cm N	70	130	200
1/5	cm N	120	200	300
< 1/5***	cm N	300	300	300
Maximum speed	steps/sec^{-1}	2 000	2 000	2 000
Maximum acceleration	steps/sec^{-2}	8 000	8 000	8 000

**Typical performance values for units UE 72 and 73 used with CC1 controller.
Contact factory for values with CD 4 and MC/MD controllers.

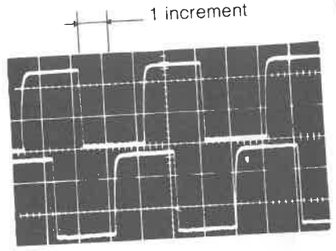
***Gear reduction limit of resistance.

different types

without reduction gear	385 730	385 740	385 750
with reduction gear 1/3	385 731	385 741	385 751
with reduction gear 1/5	385 732	385 742	385 752
with reduction gear 1/30	385 733	385 743	385 753
with reduction gear 1/50	385 734	385 744	385 754

option + GS

The + GS option involves the addition of an incremental encoder connected the motor shaft, and delivering :
- 2 signals out-of-phase by one increment.
- One extra signal every 100 increments for the GS 200 and every 2,000 increments for the GS 2000.



+ GS 200	+385 919
+ GS 2000	+385 920

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