MATED WITH:
PASSEND ZU:

CUT THROUGH THE FOT CAVITY

DELIVERY CONDITION
THE CLAMP (SPRING) AS EXAMPLE.

Protection cap

TX   RX

FORCE F   FORCE F

Surface for force admission and
bearing surface of the clamping system.
In lock-position clamp fingers must have
contact to the bearing surface,
no gap is permitted.

TX   RX

Pin-1 marker

max.16.5

max.8

Pick and place area

A-A
200:1

+ Z
direction

Min Ferrule
Nominal Ferrule
Max Ferrule

NOTE SMT IC-PACKAGE:

- SMT IC-package according JEDEC MS-013E [5] with
  following additional constraints and expansions
    - height is not applicable ([A] in MS-013E).
      The SMT IC-package with the protection cap
      on top shall be lower than 12.7 mm
    - co-planarity: < 0.1mm
    - Pin width: 0.4mm +/- 0.05mm ([b] in MS-013E)
- Includes the clamping system
- Pin 1 marker needs to be visible when mounted on pcb
- Weight shall be as low as possible
- The design must provide precautions for protecting the
  clamping system from being accidentally damaged

NOTE CLAMPING SYSTEM:

- Representation of the clamp (spring) as example.
- The clamping system is part of the transceiver
- The clamping system shall be designed to ensure
  the requirements for the optical coupling
- The clamping system shall be protected from accidentally damage by
  reasonable handling of the FOT
- The clamping system shall be designed or protected in a way that no
  damage to the light guide can occur by reasonable handling while
  assembling the light guide (ferrule)
- The min. / max. force is to be measured with biggest
  and smallest testferrules according ferrule drawings. Ferrules
  for this measurement have to be made from polished steel or nickel.

	min. FORCE	max. FORCE
FERRULE PRESSING IN FORCE OF EACH INTERFACE (RX AND TX)	1.5 N	8.5 N
FERRULE PRESS OUT FORCE OF EACH INTERFACE (RX AND TX)	4.0 N	20 N
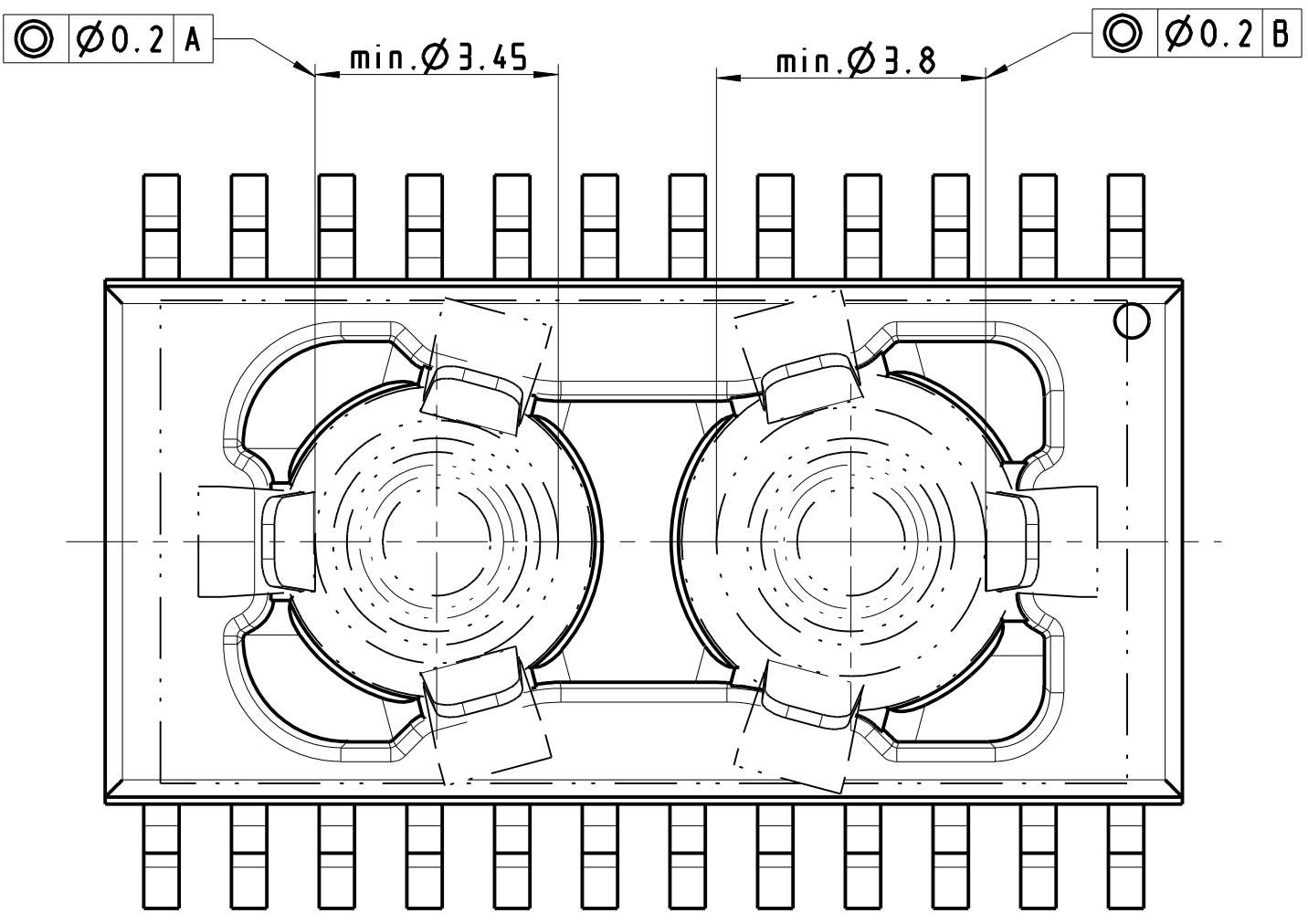
NOTE CAVITY:

The cone serves for self-centering of the ferrule in the cavity;
the Dimensional Verification of cone is realized with an
indirect measurement method. This method uses
min-/max-Ferrules as measurement gauges, detecting
difference of immersion depth dT / dR.

Measurement procedure for min-/max-Ferrules
1. determine axis [I] / [H]
2. determine datum plane [T] / [R] which is the location
    on the cone with a diameter of 3.05mm / 2.85mm
3. measure the distances T1, T2 , R1, R2 on the ferrules

Measurement procedure for dimensional verification of the cone
1. Determine axis [A] / [B]
2. Insert max-Ferrule for TX / RX and measure the top point
    location of the max_Ferrules (Heigth TX_max, Height RX_max);
    for this purpose, apply a measurement force of 1-2N,
    mass and gravity could be used (see example)
3. Determine datum plane [T] / [R] on the cavitys cone
    (Heigth TX_max. - T1 = [T] / Heigth RX_max. - R1 = [R])
4. Insert min-Ferrule for TX / RX and measure the top point
    location of the max_Ferrules (Heigth TX_min, Height RX_min)
5. Calculate difference in height of min/max top points according following formula:
    dT = (- T1 + T2 + Heigth TX_max - Heigth TX_min +0.03)
    with 0.01 < dT < 0.04
    dR = (- R1 + R2 + Heigth RX_max - Heigth RX_min +0.03)
    with 0.01 < dR < 0.04
6. Measure dimension 2.755 from datum plane [T] and dimension 2.93 from plane [R].

Notes:
Tolerance System for the location of a
/1\ ferrule in the cavity is based on [⊥ 0.02]

The tolerance range for dT / dR covers a
measurement uncertainty of 0.01 and a
/2\ possible mechanical stop at OT / OR when using the min Ferrule

OT and OR represent a mechanical stop;
/3\ all optical surfaces must be located below.

Maximum height for the SMT-IC; for RX- and TX-side, all elements of the
/4\ IC-package must be located below. This height also marks a boundary
surface for ferrules or components associated to ferrules. Beyond this boundary
maximum dimensions given for the upper cylinder of the ferrules may bee exceeded.
Tilting of ferrules and associated components need to be considered.

FOOTPRINT
- RECOMMENDATION -

PIN-1
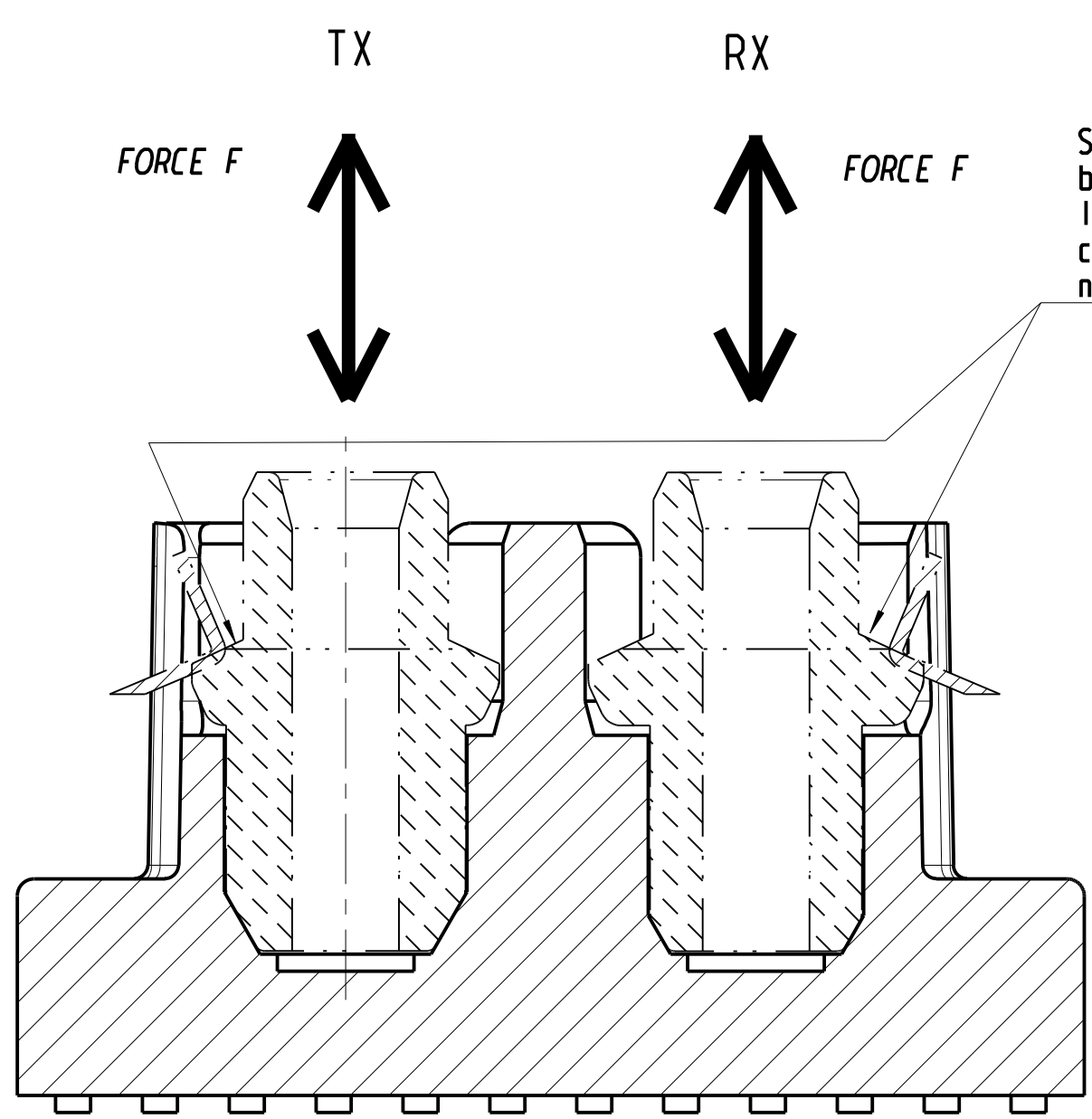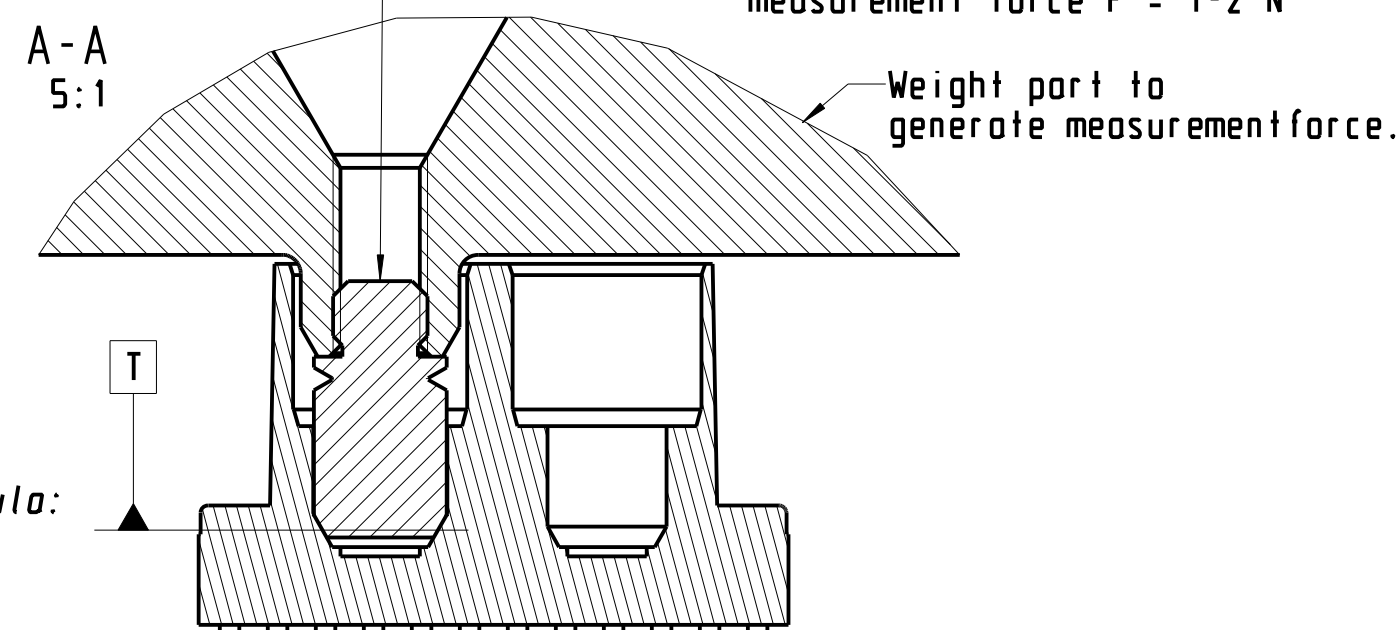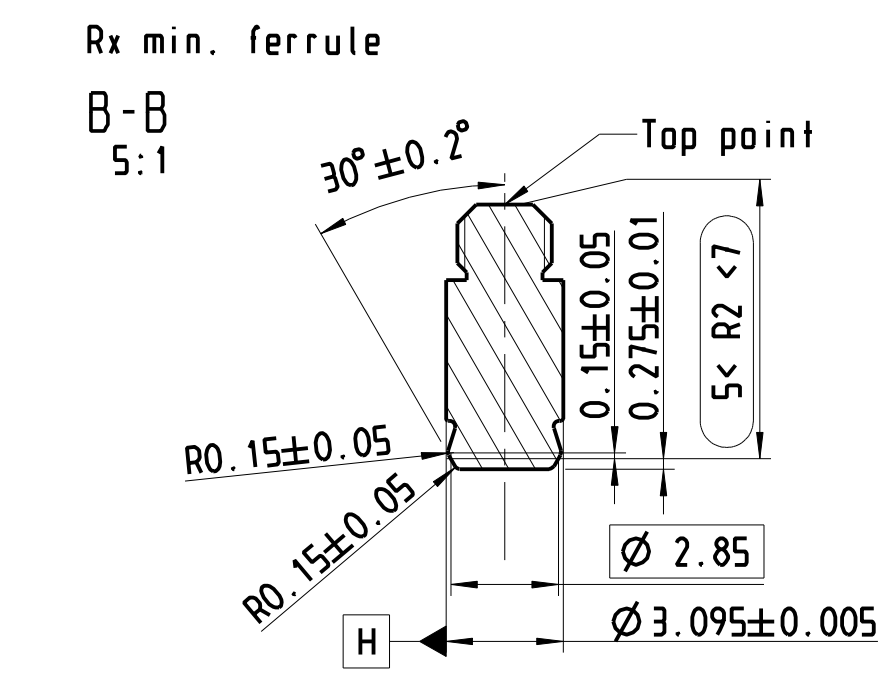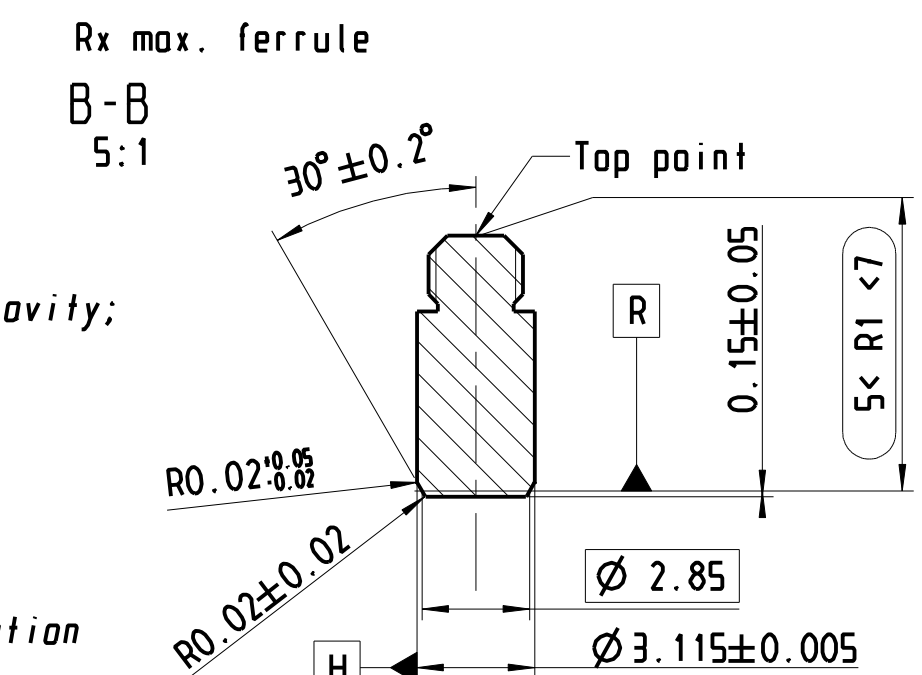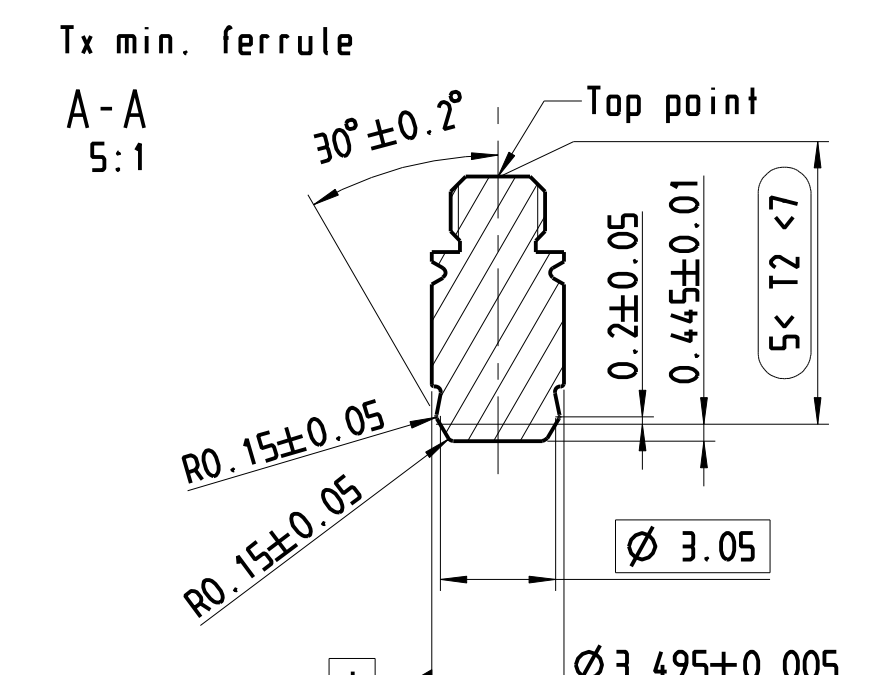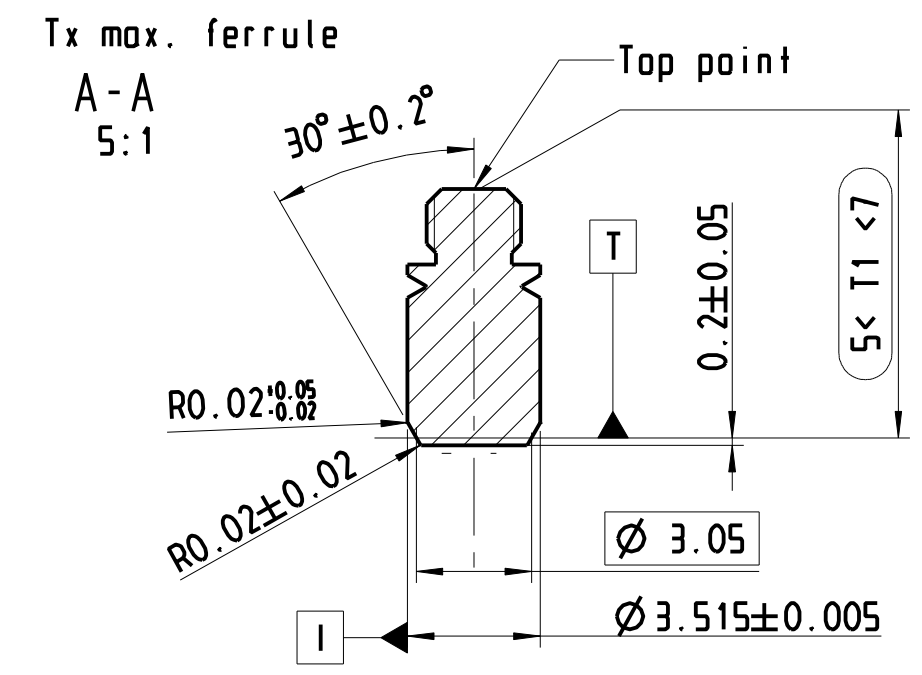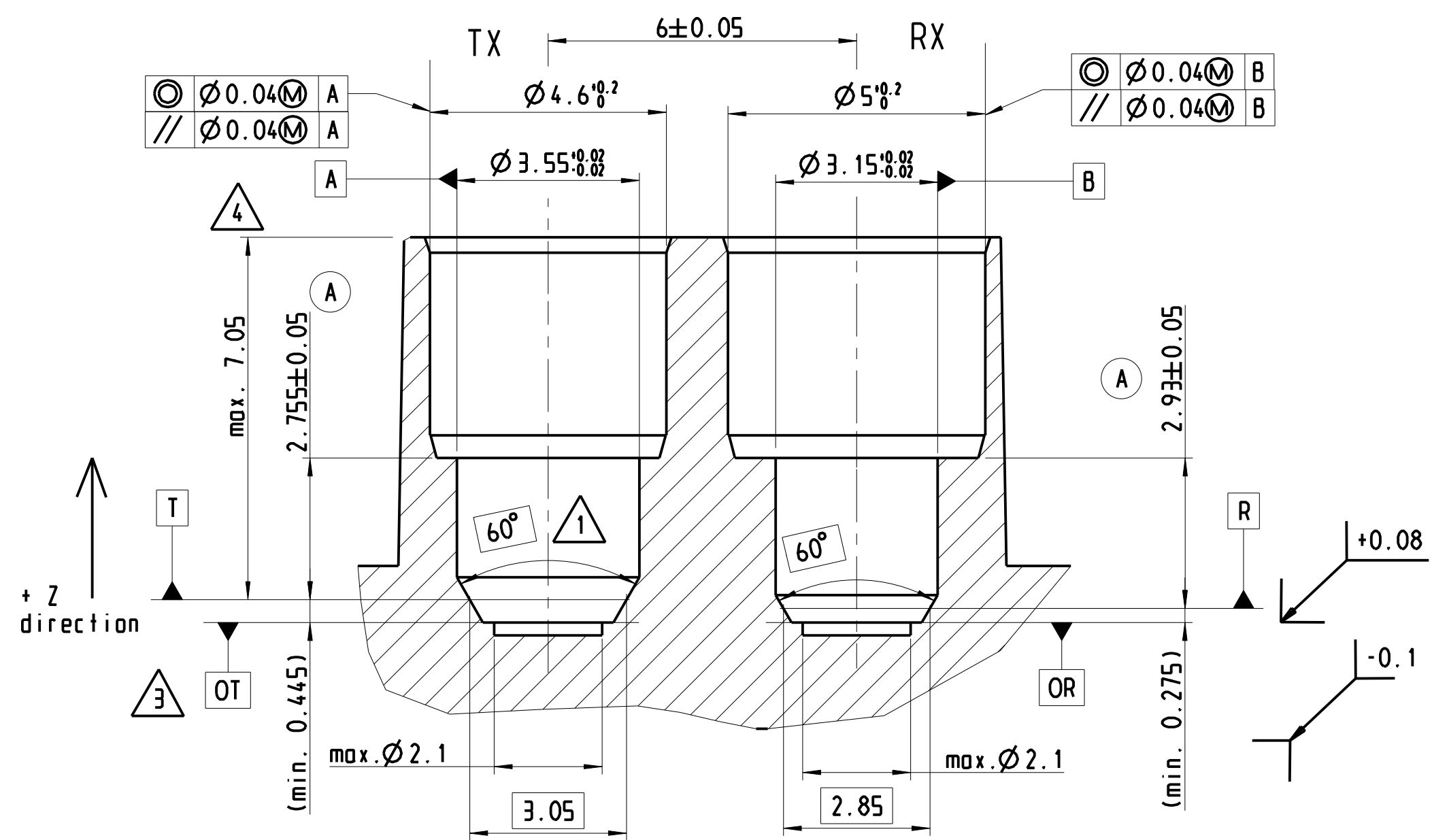
TX   RX

9.6

1.3

1.3

0.8 (24x)
1.27 (11x)

NOTE PICK AND PLACE AREA:

- Pick area on top of device,
  centered to the package body,
- flat area with diameter > 6mm,
- rigidly coupled to the package body,
- this surface must be suitable as
  suction surface.

The removable protection cap is
requested.
In parallel this cap could also provide
the pick area. The cap can be realized
as a separate plastic part, as a Kapton
tape or something else.
The protection cap must withstand the
reflow soldering.

min.Ø3.45   min.Ø3.8

Ø0.2 A   Ø0.2 B

NUMBER OF CLAMP (Spring)
of each interface   min. 2

Tx max. ferrule
A-A
5:1
30°±0.2°   Top point
T
0.2±0.05
5< T1 <7
RO.02 +0.05/-0.00
RO.02±0.02
Ø 3.05
Ø 3.515±0.005
I

Tx min. ferrule
A-A
5:1
30°±0.2°   Top point
0.2±0.05
0.445±0.01
5< T2 <7
RO.15±0.05
RO.15±0.05
Ø 3.05
Ø 3.495±0.005
I

Rx max. ferrule
B-B
5:1
30°±0.2°   Top point
R
0.15±0.05
5< R1 <7
RO.02 +0.05/-0.00
RO.02±0.02
Ø 2.85
Ø 3.115±0.005
H

Rx min. ferrule
B-B
5:1
30°±0.2°   Top point
0.15±0.05
0.275±0.01
5< R2 <7
RO.15±0.05
RO.15±0.05
Ø 2.85
Ø 3.095±0.005
H

measurement force F = 1-2 N

A-A
5:1
T

Weight part to
generate measurement force.

6±0.05

TX   RX

Ø0.04 M A   Ø0.04 M B
Ø0.04 M A   Ø0.04 M B

Ø4.6 +0.2/0   Ø5 +0.2/0

Ø3.55 +0.00/-0.02   Ø3.15 +0.02/-0.02

A   B

max. 7.05   2.93±0.05

2.755±0.05

60°   60°

(min. 0.445)   (min. 0.275)

max.Ø2.1   max.Ø2.1
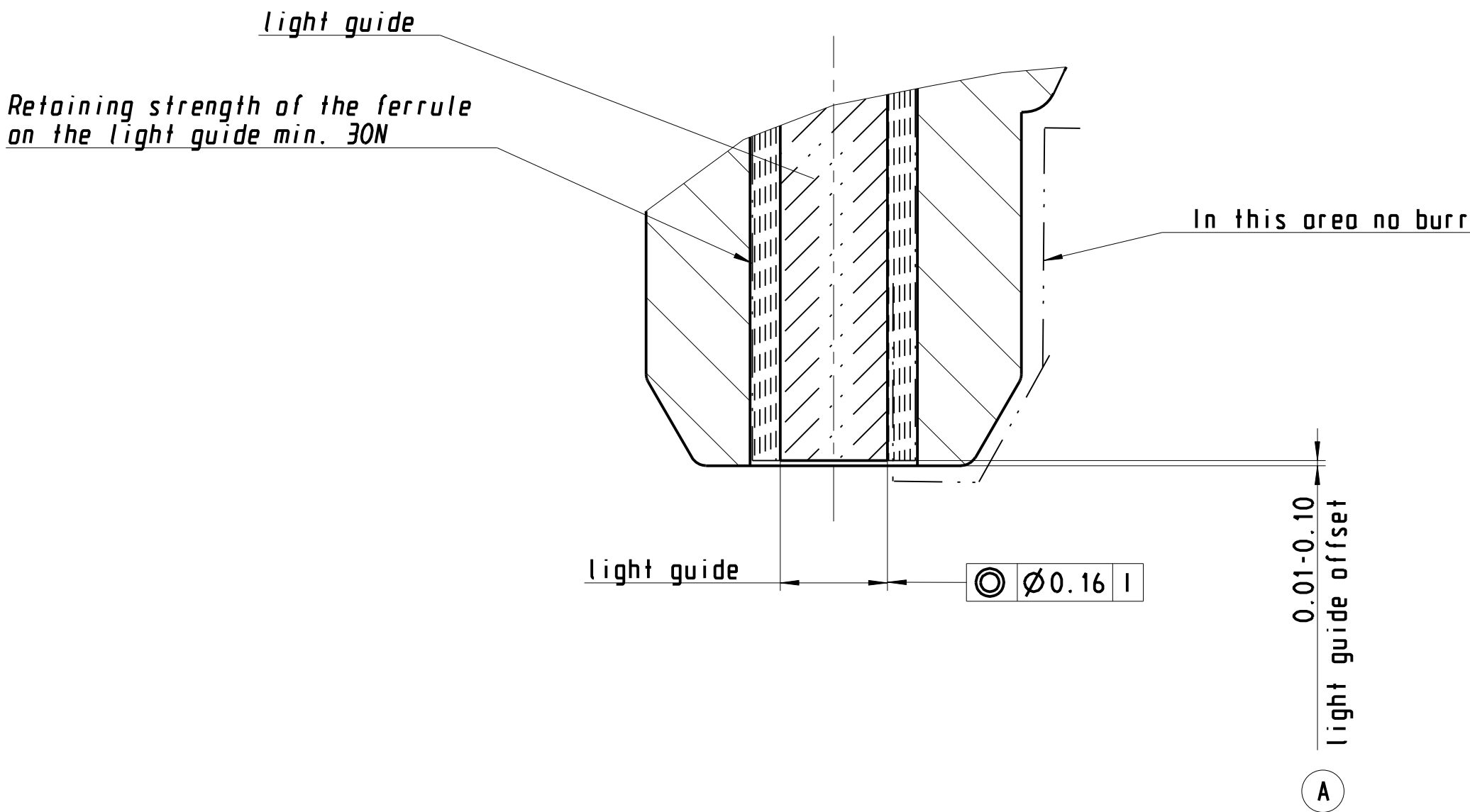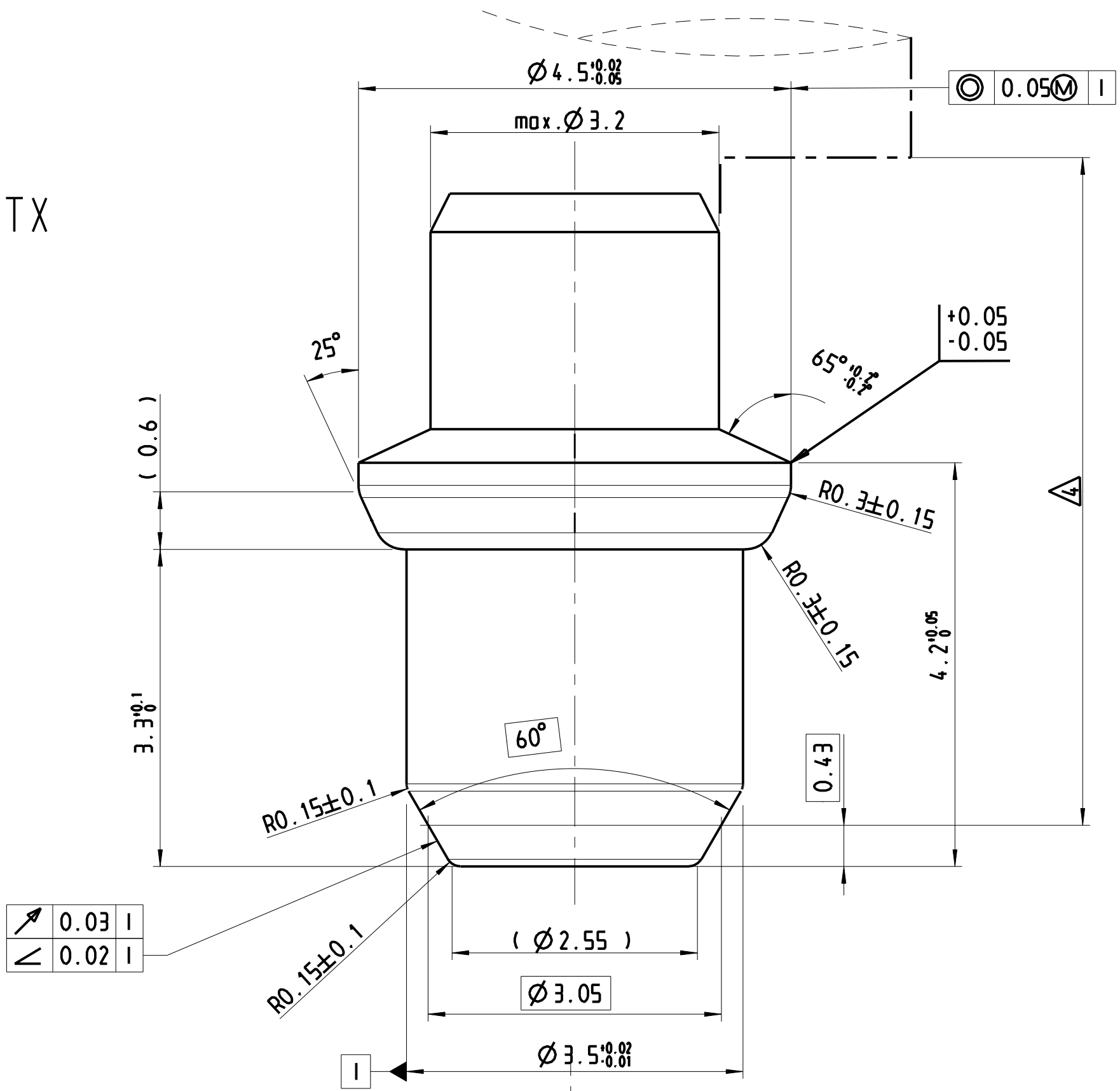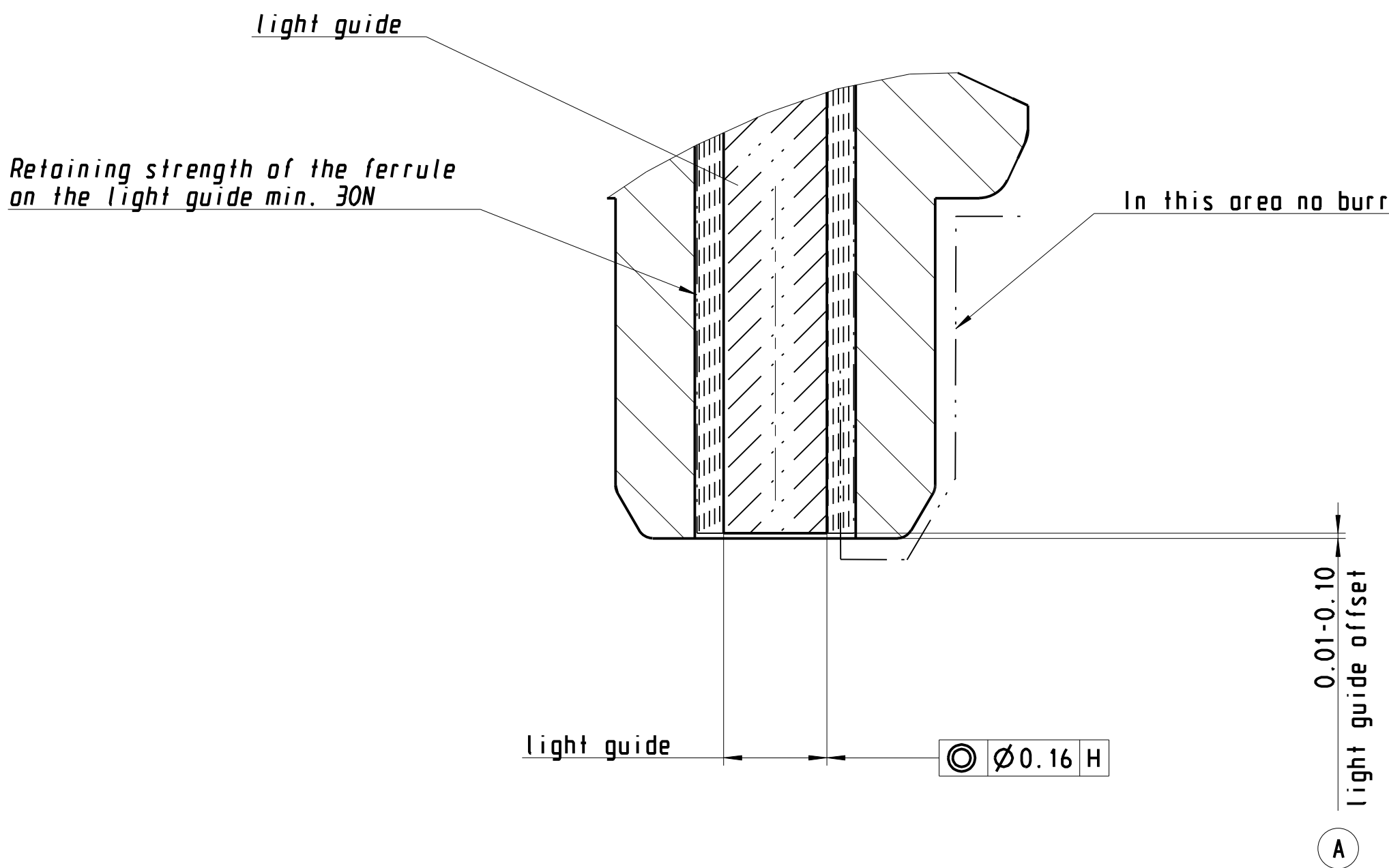
3.05   2.85

+0.08
-0.1

DIN ISO 2768 mK

C2	Change the force 2 to 1.5; 6 to 8.5; 5 to 4; 15 to 20; add testferrule sentence and the note 6.	29.06.11	Sto
B	Change to indirect cone measurment with procedure, views, notes, toleranceing; edge tolerance added	04.08.10	Sto
A1	formal change	27.08.08	cs
A	"standoff" in note SMT IC-package have been deleted	11.07.08	cs
A	tolerance have been changed (3.2-0.05 -> 3.2+-0.05)	11.07.08	cs
.	text change	07.01.08	cs

MOST150 FO-TRANSCEIVER

Maßstab/scale 5:1

Datum/date 20.12.07   Name/name CStrohmeier

Format/drawing size A1

0

MATED WITH:
PASSEND ZU:

A1

FERRULE TX

Ø4.5 +0.02 -0.05

⌀ 0.05 Ⓜ I

max.Ø3.2

25°

65° +0.2 -0.2

+0.05 -0.05

(0.6)

R0.3±0.15

R0.3±0.15

4.2 +0.05

3.3 +0.1 0

60°

0.43

R0.15±0.1

R0.15±0.1

(Ø2.55)

Ø3.05

↗ 0.03 I

∠ 0.02 I

Ø3.5 +0.02 -0.01

I

light guide

Retaining strength of the ferrule
on the light guide min. 30N

In this area no burr

light guide

⌀ Ø0.16 I

0.01-0.10
light guide offset

A

FERRULE RX

Ø4.9 +0.02 -0.05

⌀ 0.05 Ⓜ H

max.Ø3.2

25°

65° +0.2 -0.2

+0.05 -0.05

(0.6)

R0.3±0.15

R0.3±0.15

4.2 +0.05

3.3 +0.1 0

60°

0.26

R0.15±0.1

R0.15±0.1

Ø2.85

↗ 0.03 H

∠ 0.02 H

Ø3.1 +0.02 -0.01

H

light guide

Retaining strength of the ferrule
on the light guide min. 30N

In this area no burr

light guide

⌀ Ø0.16 H

0.01-0.10
light guide offset

A

+0.15

A1

C2		see page 1				29.06.11	Sta	
B		see page 1				04.08.10	Sta	
A1		formal change				27.08.08	cs	
A	.	tolerance changed by the light guide offset				15.07.08	cs	.
.	.	text change from fiber core to light guide				07.01.08	cs	.
Index/ Indexnr. Rev. Revnr.	mod/ mod.	Änderungs-Art/ type of change			And.-Nr/ chg.-nr.	And.-Datum/ date of chg.	bearb./ auth.	geprüft/ checked

Werkstoff/
material -

Oberflächel/
Finish -

Unlolerierte Maße nach/dim. without tol. accord. to
DIN ISO 2768 mK

MQST	Tolerierung/ tolerancing ISO 8015	Fertiggewicht in g/ weight in g	Maßstab/scale 20:1		Datum/date	Name/name
				erstellt/created	20.12.07	CStrohmeier
				geprüft/checked		

Benennung/description
MOST150 FO-TRANSCEIVER

Blatt/sheet 2	Blätter/of 2	Format/drawing size A1
Typ-Nr./mod.No.	Ident-Nr./ P/N	
		0

CAD