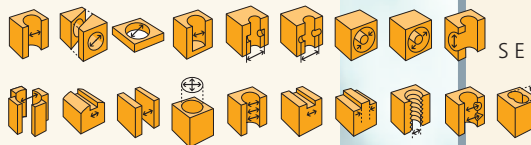


# Indicating Plug Gauge OD

for measuring internal diameters, application range 2,0 - 800 mm



SERIES 300-326

Assembly complete set: 1 measuring sleeve with two radially movable contact pins, offset by 180° + OD holder (see page 23) + indicating unit of choice.

Standard meas. range: 0,2 mm for  $\varnothing \geq 6$  mm

Standard design of the meas. sleeve: tool steel w. tungsten carbide meas. contacts

## OD MEASURING SLEEVES, STANDARD

Nominal- $\varnothing$ [mm]	h [mm]	standard Art.-No.	h [mm]	for through bores Art.-No.	h [mm]	for blind bores Art.-No.
2,0 - 3,0	1,0	300 00015	-	-	0,7	300 00016
3,1 - 6	1,5	300 00000	6	300 00002	1	300 00001
6,1 - 12	2,5	301 00000	6/10*	301 00002	1	301 00001
12,1 - 20	2,5	302 00000	10	302 00002	1	302 00001
20,1 - 30	3,5	303 00000	10	303 00002	1,2	303 00001
30,1 - 40	3,5	304 00000	10	304 00002	1,2	304 00001
40,1 - 60	3,5	305 00000	10	305 00002	1,2	305 00001
60,1 - 80	4,0	306 00000	10	306 00002	1,2	306 00001
80,1 - 100	4,0	307 00000	10	307 00002	1,2	307 00001
100,1 - 110	4,0	308 00000	10	308 00002	1,2	308 00001
110,1 - 120	4,0	309 00010	10	309 00012	1,2	309 00011
120,1 - 130	4,0	310 00010	10	310 00012	1,2	310 00011
> 130			on inquiry			

\*nom. -  $\varnothing$  6,1-9 mm, h=6 mm; nom. -  $\varnothing$  9,1-12 mm, h=10 mm

Please let us know the exact bore tolerance with your order:

Example: Meas. sleeve OD No. 304 00000 35 H7

Meas. sleeve OD No. 304 00000 35 + 0,15 /-0,01

Meas. sleeve OD No. 304 00000 34,990/35,005

## OD MEASURING SLEEVES, HARDCHROMED

Nominal- $\varnothing$ [mm]	h [mm]	Standard Art.-No.	h [mm]	for through bores Art.-No.	h [mm]	for blind bores Art.-No.
2,0 - 3,0	1,0	300 00019	-	-	0,7	300 00020
3,1 - 6	1,5	300 00004	6	300 00009	1	300 00008
6,1 - 12	2,5	301 00004	6/10*	301 00009	1	301 00008
12,1 - 20	2,5	302 00004	10	302 00009	1	302 00008
20,1 - 30	3,5	303 00004	10	303 00009	1,2	303 00008
30,1 - 40	3,5	304 00004	10	304 00009	1,2	304 00008
40,1 - 60	3,5	305 00004	10	305 00010	1,2	305 00009
60,1 - 80	4,0	306 00004	10	306 00015	1,2	306 00009
80,1 - 100	4,0	307 00004	10	307 00011	1,2	307 00010
100,1 - 110	4,0	308 00004	10	308 00016	1,2	308 00005
110,1 - 120	4,0	309 00004	10	309 00006	1,2	309 00005
120,1 - 130	4,0	310 00004	10	310 00006	1,2	310 00005
> 130			on inquiry			

\*nom. -  $\varnothing$  6,1-9 mm, h=6 mm; nom. -  $\varnothing$  9,1-12 mm, h=10 mm

## OD CROSS SLEEVES [WITH RUNNERS]

Sleeve- $\varnothing$ [mm]	h [mm]	cross sleeve w. runners Art.-No.	h [mm]	cross sleeve w. runners Art.-No.	h [mm]	cross sleeve Art.-No.
130,1 - 140	7	311 00001	18	311 00000	6	311 00002
140,1 - 150	7	312 00001	18	312 00000	6	312 00002
150,1 - 160	7	313 00001	18	313 00000	6	313 00002
160,1 - 170	7	314 00001	18	314 00000	6	314 00002
170,1 - 180	7	315 00001	18	315 00000	6	315 00002
180,1 - 190	7	316 00001	18	316 00000	6	316 00002
190,1 - 200	7	317 00001	18	317 00000	6	317 00002
200,1 - 300	7	318 00001	18	318 00000	6	318 00002

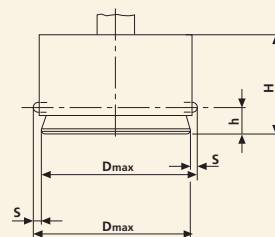
ESU Setting master therefore see Series 125



Plug gauges OD for various bore diameters and in open design

### Floating contacting principle:

- H: Sleeve length
- h: Front distance; distance of meas. axis to bottom of the bore
- $D_{max}$ : maximum  $\varnothing$  to be measured
- s: Measuring range = 0,2 mm



OD Dimensions



Cross sleeve from  $\varnothing$  130 mm for centring shoulders or measuring with depth stop



Cross sleeve with runners from  $\varnothing$  130 mm for through and deep bores

# Indicating Plug Gauge OD

Measuring sleeves in open design for high surface roughness.  
Measuring contacts with enlarged radii, to ensure filter effects with unpolished surfaces; tungsten carbide tipped, easy cleaning.

## OD MEASURING SLEEVES WITH LARGE CONTACT RADIUS

Nominal-Ø [mm]	h Standard [mm]	Art.-No.	h blind bores [mm]	Art.-No.
3 - 6	6	300 00007	-	-
6,1 - 12	6/10*	301 00011	2	301 00012
12,1 - 20	10	302 00010	1,5	302 00011
20,1 - 30	10	303 00010	1,5	303 00011
30,1 - 40	10	304 00016	4	304 00019
40,1 - 60	10	305 00008	4	305 00011
60,1 - 80	10	306 00013	4	306 00016
80,1 - 100	10	307 00009	4	307 00012
> 100	10	on inquiry	4	on inquiry

\*nom. - Ø 6,1-9 mm, h=6 mm; nom. - Ø 9,1-12 mm, h=10 mm

## SPECIAL DESIGNS ON INQUIRY:

- with integrated inductive meas. probes, from Ø 25 mm
- Contact pins and/or sleeve out of Delrin for scratch sensible, polished workpieces
- Front distance „h“ non-standard
- Meas. sleeves for automatic measuring
- Three-point design
- Contact pins ruby, ceramic, diamond or hardchromed
- Two or more measuring axes
- Special sleeves for plane parallel distances
- Special profiles for extruders or for housings of toothed wheel pumps
- Blind bores design with  $h \leq 1$  mm
- Extended meas. range > 0,2 mm
- Taper measurement - see illustration

Technical details regarding the Series OD can be found in our technical documentation 300 T

## OD HOLDER

with thread connection M11 x 0,75 for direct connection to all OD meas. sleeves

### OD HOLDER

Length [mm]	Art.-No.
50	320 00000
105	320 00001
235	320 00002
<i>greater length on inquiry</i>	
<i>Holder F, especially for electronic length meas. probes, w. fine adjustment, 110 mm long</i>	
	320 00004
<i>Strengthened holder w. tube Ø 18 mm, recommended for sleeve-Ø &gt; 60 mm</i>	
145	320 00038
235	320 00039
<i>Holder with retraction, 70 mm long, recommended for blind bore sleeves</i>	
	320 00042

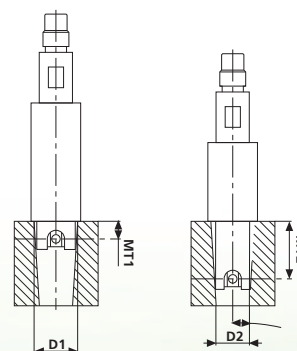
## SERIES 300-326



OD measuring sleeve  
Ø 60 mm



OD measuring sleeves in special design



Taper measurement



OD Holders

# Accessories for Plug Gauge OD

SERIES 300-326

## MEASURING DEPTH EXTENSION

for measuring also in large depth,  
interchangeable, therefore very flexible  
for different measuring depth

### MEAS. DEPTH EXTENSION

Length [mm]	Ø 3,9 mm for OD Ø 4,0-6,5 mm	Ø 6,5 mm for OD Ø 6,5-12 mm	Ø 12 mm for OD from Ø 12 mm	Ø 18 mm for OD from Ø 60 mm
50	323 00100	323 00110	-	-
100	323 00101	323 00111	323 00000	323 00004
250	323 00103	323 00113	323 00001	323 00005
500	-	-	323 00002	323 00006
1000	-	-	-	323 00007

Please let us have the Ø of the corresp. OD sleeve with your order.  
Extensions for measuring sleeves <4 mm: on inquiry.

## DEPTH STOP

for measuring in reproducible measuring  
depths and for eliminating the tilting error.  
Please indicate with your order:  
minimum/maximum measuring depth

### SET COLLAR [CLAMPED ON SLEEVE]

Diameter meas. sleeve [mm]	Art.-No.
3,0 - 40	322 00000
40,1 - 60	322 00001

(due to the weight only reasonable up to max. Ø 60 mm)

### 3-POINT DEPTH STOP [CLAMPED ON SHAFT]

30 - 50	322 00019
50,1 - 80	322 00020
80,1 - 100	322 00021
100,1 - 150	322 00022

### BRIDGE DEPTH STOP FOR DEEP BORES# [CLAMPED ON SHAFT]

3 - 50	322 00007
50,1 - 80	322 00008
80,1 - 100	322 00009
> 100	on inquiry

## FLOATING HOLDER

for the use in measuring devices with  
automatic meas. instrument feeding

### FLOATING HOLDER

for OD holder 105	Art.-No.
	629 00003



Depth stops for OD plug gauge



OD plug gauge with two measuring axes

## Accessories for Plug Gauge OD

### ANGLE PIECE

	Art.-No.
<i>90° with thread M11 x 0,75</i>	324 00000

### STAND

	Art.-No.
<i>with clamping-Ø 12 mm OD holder 105</i>	325 00000
<i>with clamping-Ø 18 mm for strengthened OD holder 145</i>	325 00004

### Wooden box

for secure storage of one standard OD holder,  
one dial gauge and one measuring sleeve

### WOODEN BOX

Sleeve-Ø [mm]	Art.-No.
<i>3 - 50</i>	326 00000
<i>50,1 - 100</i>	326 00001
<i>100,1 - 150</i>	326 00002
<i>150,1 - 200</i>	326 00003

SERIES 300-326



Stand for OD with angle piece,  
plug gauge OD, depth stop (set collar),  
holder and precision indicator