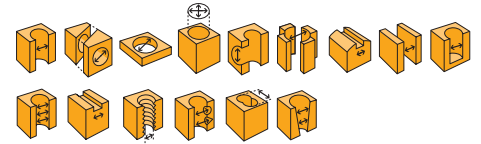


Indicating Plug Gauge OD

FOR MEASURING INTERNAL DIAMETERS,
APPLICATION RANGE 2,0 - 800 MM

SERIES 300-326



Assembly complete set:

Measuring sleeve with two radially movable contact pins, offset by 180° +
OD holder (see page 24) + indication unit of choice. Standard measuring range s:
0,2 mm for $\varnothing \geq 6$ mm. Standard design of the measuring sleeve: hardened steel,
alternatively hard chromed, measuring contacts tungsten carbide.

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

Example: measuring sleeve OD No. 304 00000 35 H7
measuring sleeve OD No. 304 00000 35 + 0,15/-0,01
measuring sleeve OD No. 304 00000 34,990/35,005

* nominal \varnothing 6,1 - 9 mm: h = 6 mm; nominal \varnothing 9,1 - 12 mm: h = 10 mm

OD MEASURING SLEEVES - IN HARDENED STEEL DESIGN

nominal- \varnothing [mm]	H = STANDARD					DESIGN OF THE MEASURING CONTACTS IN			
						FOR THROUGH BORES			
	h [mm]	carbide Code	hardchromed Code	ruby Code	diamond Code	h [mm]	carbide Code	hardchromed Code	
2,0 - 2,5	1	300 00015				-			
2,6 - 6,0	1,5	300 00000		300 00003		6	300 00002		
6,1 - 12,0	2,5	301 00000	301 00010	301 00003	301 00025	6/10*	301 00002	301 00026	
12,1 - 20,0	2,5	302 00000	302 00007	302 00003	302 00017	10	302 00002	302 00018	
20,1 - 30,0	3,5	303 00000	303 00007	303 00003	303 00022	10	303 00002	303 00023	
30,1 - 40,0	3,5	304 00000	304 00006	304 00003	304 00029	10	304 00002	304 00030	
40,1 - 60,0	3,5	305 00000	305 00006	305 00003	305 00020	10	305 00002	305 00021	
60,1 - 80,0	4,0	306 00000	306 00006	306 00003	306 00022	10	306 00002	306 00023	
80,1 - 100,0	4,0	307 00000	307 00006	307 00003	307 00016	10	307 00002	307 00017	
100,1 - 110,0	4,0	308 00000	308 00021	308 00022	308 00023	10	308 00002	308 00024	
110,1 - 120,0	4,0	309 00010	309 00006	309 00007	309 00008	10	309 00012	309 00009	
120,1 - 130,0	4,0	310 00010	310 00006	310 00007	310 00008	10	310 00012	310 00009	
130,1 - 140,0	4,0	311 00500	311 00503	311 00504	311 00505	10	311 00502	311 00506	
140,1 - 150,0	4,0	312 00500	312 00503	312 00504	312 00505	10	312 00502	312 00506	
150,1 - 160,0	4,0	313 00500	313 00503	313 00504	313 00505	10	313 00502	313 00506	
160,1 - 170,0	4,0	314 00500	314 00503	314 00504	314 00505	10	314 00502	314 00506	
170,1 - 180,0	4,0	315 00500	315 00503	315 00504	315 00505	10	315 00502	315 00506	
180,1 - 190,0	4,0	316 00500	316 00503	316 00504	316 00505	10	316 00502	316 00506	
190,1 - 200,0	4,0	317 00500	317 00503	317 00504	317 00505	10	317 00502	317 00506	

OD MEASURING SLEEVES - HARDCHROMED

nominal- \varnothing [mm]	H = STANDARD					DESIGN OF THE MEASURING CONTACTS IN			
						FOR THROUGH BORES			
	h [mm]	carbide Code	hardchromed Code	ruby Code	diamond Code	h [mm]	carbide Code	hardchromed Code	
2,0 - 2,5	1	300 00019	-		-	-			
2,6 - 6,0	1,5	300 00004		300 00034		6	300 00009		
6,1 - 12,0	2,5	301 00004	301 00032	301 00033	301 00034	6/10*	301 00009	301 00035	
12,1 - 20,0	2,5	302 00004	302 00024	302 00025	302 00026	10	302 00009	302 00027	
20,1 - 30,0	3,5	303 00004	303 00029	303 00030	303 00031	10	303 00009	303 00032	
30,1 - 40,0	3,5	304 00004	304 00036	304 00037	304 00038	10	304 00009	304 00039	
40,1 - 60,0	3,5	305 00004	305 00027	305 00028	305 00029	10	305 00010	305 00030	
60,1 - 80,0	4,0	306 00004	306 00029	306 00030	306 00031	10	306 00015	306 00032	
80,1 - 100,0	4,0	307 00004	307 00023	307 00024	307 00025	10	307 00011	307 00026	
100,1 - 110,0	4,0	308 00004	308 00030	308 00031	308 00032	10	308 00016	308 00033	
110,1 - 120,0	4,0	309 00004	309 00022	309 00023	309 00024	10	309 00016	309 00025	
120,1 - 130,0	4,0	310 00004	310 00022	310 00023	310 00024	10	310 00025	310 00026	
130,1 - 140,0	4,0	311 00512	311 00513	311 00514	311 00515	10	311 00516	311 00517	
140,1 - 150,0	4,0	312 00512	312 00513	312 00514	312 00515	10	312 00516	312 00517	
150,1 - 160,0	4,0	313 00512	313 00513	313 00514	313 00515	10	313 00516	313 00517	
160,1 - 170,0	4,0	314 00512	314 00513	314 00514	314 00515	10	314 00516	314 00517	
170,1 - 180,0	4,0	315 00512	315 00513	315 00514	315 00515	10	315 00516	315 00517	
180,1 - 190,0	4,0	316 00512	316 00513	316 00514	316 00515	10	316 00516	316 00517	
190,1 - 200,0	4,0	317 00512	317 00513	317 00514	317 00515	10	317 00516	317 00517	

SURCHARGE

design	Ø-range	Code
surcharge 3-point-design	4,0 - 8,0	319 00509
	8,1 - 40,1	319 00502
	40,1 - 60,0	319 00538
	60,1 - 100,0	319 00510
surcharge extended measuring travel 0,4 mm	2,5 - 6,0	319 00512
surcharge extended measuring travel 0,6 mm	6,1 - 20,0	319 00539
surcharge extended measuring travel 0,6 mm	> 20,1	319 00540
surcharge reduced undersize for tolerance <10 µ	2,5 - 20,0	319 00506
surcharge reduced undersize for tolerance <10 µ	> 20,0 - 100,0	319 00504
surcharge protection cover (not available for blind bore design)	> 4,0 - 20,0	319 00507
	> 20,1	319 00508

Note: These special versions are not available in every combination!
 measuring contacts hard chromed and diamond are available from Ø 8 mm;
 ruby measuring contacts from Ø 3 mm



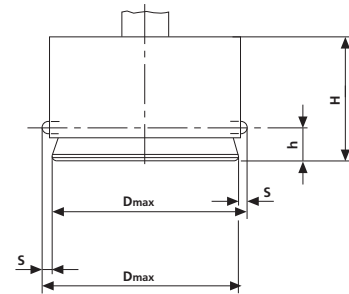
plug gauges OD for various bore diameters

FOR BLIND BORES					
ruby Code	diamond Code	h [mm]	carbide Code	hardchromed Code	ruby Code
		0,7	300 00016		
300 00026		1	300 00001		300 00028
301 00027	301 00028	1	301 00001	301 00029	301 00030
302 00019	302 00020	1	302 00001	302 00021	302 00022
303 00024	303 00025	1,2	303 00001	303 00026	303 00027
304 00031	304 00032	1,2	304 00001	304 00033	304 00034
305 00022	305 00023	1,2	305 00001	305 00024	305 00025
306 00024	306 00025	1,2	306 00001	306 00026	306 00027
307 00018	307 00019	1,2	307 00001	307 00020	307 00021
308 00025	308 00026	1,2	308 00001	308 00027	308 00028
309 00017	309 00018	1,2	309 00011	309 00019	309 00020
310 00017	310 00018	1,2	310 00011	310 00019	310 00020
311 00507	311 00508	1,2	311 00501	311 00509	311 00510
312 00507	312 00508	1,2	312 00501	312 00509	312 00510
313 00507	313 00508	1,2	312 00501	313 00509	313 00510
314 00507	314 00508	1,2	314 00501	314 00509	314 00510
315 00507	315 00508	1,2	315 00501	315 00509	315 00510
316 00507	316 00508	1,2	316 00501	316 00509	316 00510
317 00507	317 00508	1,2	317 00501	317 00509	317 00510

FOR BLIND BORES					
ruby Code	diamond Code	h [mm]	carbide Code	hardchromed Code	ruby Code
		0,7	300 00020	-	
300 00032	-	1	300 00008	-	300 00037
301 00036	301 00037	1	301 00008	301 00038	301 00039
302 00028	302 00029	1	302 00008	302 00030	302 00013
303 00033	303 00034	1,2	303 00008	303 00035	303 00036
304 00040	304 00041	1,2	304 00008	304 00042	304 00043
305 00031	305 00032	1,2	305 00009	305 00033	305 00034
306 00033	306 00034	1,2	306 00009	306 00035	306 00037
307 00027	307 00028	1,2	307 00010	307 00029	307 00030
308 00034	308 00035	1,2	308 00005	308 00036	308 00037
309 00026	309 00027	1,2	309 00005	309 00028	309 00029
310 00027	310 00028	1,2	310 00005	310 00029	310 00030
311 00518	311 00519	1,2	311 00520	311 00521	311 00522
312 00518	312 00519	1,2	312 00520	312 00521	312 00522
313 00518	313 00519	1,2	313 00520	313 00521	313 00522
314 00518	314 00519	1,2	314 00520	314 00521	314 00522
315 00518	315 00519	1,2	315 00520	315 00521	315 00522
316 00518	316 00519	1,2	316 00520	316 00521	316 00522
317 00518	317 00519	1,2	317 00520	317 00521	317 00522

Floating contacting principle:

- H: sleeve length
- h: front distance, distance of measuring axis to bottom of the bore
- D_{max}: maximum Ø to be measured
- s: measuring range = 0,2 mm



OD dimensions



OD measuring sleeve Ø 60 mm



OD measuring sleeves in special design

Indicating Plug Gauge OD

SERIES 300-326

OD CROSS SLEEVE [WITH RUNNERS]

nominal-Ø [mm]	h [mm]	cross sleeve with runners Code	h [mm]	cross sleeve with runners Code	h [mm]	cross sleeve Code
130,1 - 150	7	311 00001	18	311 00000	6	311 00002
150,1 - 200	7	312 00001	18	312 00000	6	312 00002
200,1 - 250	7	313 00001	18	313 00000	6	313 00002
250,1 - 300	7	314 00001	18	314 00000	6	314 00002
300,1 - 350	10	315 00001	25	315 00000	9	315 00002
350,1 - 400	10	316 00001	25	316 00000	9	316 00002
400,1 - 450	10	317 00001	25	317 00000	9	317 00002
450,1 - 500	10	318 00001	25	318 00000	9	318 00002

ESU setting master therefore see page 15



cross sleeve with runners from Ø 130 mm for through and deep bores

SPECIAL DESIGN ON INQUIRY

- with integrated inductive measuring probes from Ø 25 mm
- measuring contact and/or sleeve out of delrin for scratch-sensitive surfaces or polished workpieces
- front distance „h“ non standard
- measuring sleeve for automatic measuring
- multiple measuring axes
- OD measuring sleeve for parallel distances
- special profiles for extruders or for housing of toothed wheel pumps
- measuring contacts in wedge-design
- taper measurement

OD HOLDER

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

OD HOLDER

length [mm]	Code
50	320 00000
105	320 00001
235	320 00002
greater length on inquiry	
holder F, especially for electronic length measuring probes with fine adjustment, 110 mm long	320 00004
strengthened holder with tube Ø 18 mm, recommended for sleeve Ø > 60 mm	
145	320 00038
235	320 00039
holder with retraction, 70 mm long, recommended for blind bore sleeves	320 00042

different threads on inquiry



OD holders

MEASURING DEPTH EXTENSION

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

MEASURING DEPTH EXTENSION

length [mm]	Ø 4,0 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 ab Ø 12 mm	Ø 18 mm for OD ab Ø 60 mm
50	323 00100	323 00110	323 00008	-
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 know the diameter of the corresponded OD sleeve with your order. Extensions for measuring sleeves < 4 mm: on inquiry.



OD measuring depth extensions

Accessories for Plug Gauge OD

SERIES 300-326

FLOATING HOLDER

for the use in measuring devices with automatic measuring gauge feeding

FLOATING HOLDER

	Code
for OD holder 105	629 0003

ANGLE PIECE

	Code
90° with thread M11 x 0,75	324 00000
90° for strengthened OD holder, tube Ø 18 mm	324 00002
90° in short design	324 00001

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 measuring sleeve [mm]	Code
3,0 - 40	322 00000
40,1 - 60	322 00001

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

3-POINT DEPTH STOP [CLAMPED ON SHAFT]

diameter measuring sleeve [mm]	Code
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]

diameter measuring sleeve [mm]	Code
3 - 50	322 00007
50,1 - 80	322 00008
80,1 - 100	322 00009
> 100	on inquiry

STAND

	Code
with clamping-Ø 12 mm for holder OD 105	325 00000
with clamping-Ø 18 mm for strengthened holder OD 145	325 00004



stand for OD with angle piece, plug gauge OD, depth stop, holder and precision indicator



depth stops for OD plug gauge



OD plug gauge with two measuring axes