Features

- Through holes in body enable simple mounting.
- Body manufactured from high tensile, anodised aluminium giving good resistance to corrosion.
- Available with sensors.

Specification

Type		DSHT								
Bore		Φ16	Φ25	Φ32	Φ40	Φ50	Φ63	Φ80	Φ100	Φ125
Power fluid		Filtered air with or without lubrication								
The range of pressure		Φ16 ~ 25 : 2 ~ 6 kgf/cm^2		Φ32 ~ 125 : 1 ~ 6kgf/cm^2						
The range of temperature		-10 ~ +60 ℃ (No freezing)								
Max. operating frequency		Φ16 ~ 25 : 120 c.p.m		Φ32 ~ 63 : 60 c.p.m			Φ80 ~ 125 : 30 c.p.m			
Repeatability		±0.01								
Effective gripping force	External	14 (13.1)	42 (9.4)	74 (16.6)	118(26.6)	187 (42)	335 (75)	500 (112)	750 (169)	1270(285)
N(lbf) at (5.0 kgf/cm^2)	Internal	16 (3.6)	47 (10.6)	82 (18.2)	130 (29)	204 (46)	359 (81)	525 (118)	780 (175)	1320(297)

Note 1 : Values for Φ16 to 25 are with gripping point L=20 mm, for Φ32 to 63 with gripping point L=30mm, and for Φ80 to 125 with gripping point L=50mm, Refer to the "Effective Holding force" data on pages 5 through 6 for the gripping force at each gripping position.

Note 2 : Open and closed diameter values apply for extermal gripping of work pieces.

How to order

DSHT	50	–	RT	1
Type	Bore		Sensor switch	Quantity
 DSHT	16 : Φ16 20 : Φ20 25 : Φ25 32 : Φ32 40 : Φ40 50 : Φ50 63 : Φ63 80 : Φ80 100 : Φ100 125 : Φ125		Perpendicular: RTV, RTNV, RTPV In-line: RT, RTN, RTP Style: Reed switch (RK), NPN (RKN), PNP (RKP) for Φ32 ~ 125 for Φ16 ~ 25	1 : 1pc 2 : 2pcs

Stroke table

Bore	Stroke (mm)	Weight (g)
Φ16	4	80
Φ25	6	150
Φ32	8	240
Φ40	8	400
Φ50	12	540
Φ63	16	1020
Φ80	20	1880
Φ100	24	3300
Φ125	32	6200

Multiples of gripping force by work piece weight

Number of fingers : When n=3
If us performs calculations allowing for impacts which occur during normal transfer, etc., using a safely margin of a = 4.

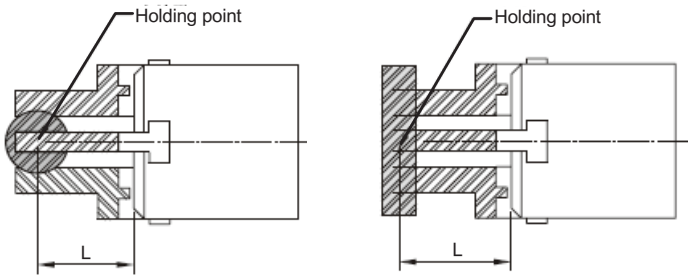
6.67 x work piece weight	13.33 x work piece weight
When μ = 0.2 F = (mg / (3 x 0.2)) x 4 = 6.67 x mg	When μ = 0.1 F=(mg / (3 x 0.1)) x 4 = 13.33 x mg

Note : Even in cases where the coefficient of friction is greater than μ = 0.2, for safety resons, we recommends selecting a gripping force which is at least 6.67 to 13.33 times the work place weight. It is necessary to allow a greter safety margin for hight accelerations and strong impacts,etc.

Effective holding force

Holding point

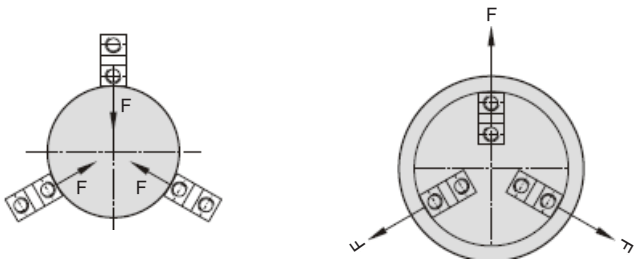
・Although the condition biffers according to the coefficient of friction between the attachment and work, select a model that can produce a holding force of 10 to 20 times the work.
・Work should be held at a point within the range for a given pressure indicated in the effective holding force holding force table shown below.



External hold　　Internal hold
L : Holding point distance

Effecitve holding force

・Indication of effective holding force The holding force shown in the tables represents the holding force of one finger when all fingers and attachments are in contact with the work



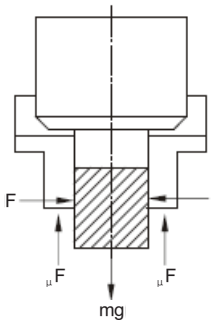
External hold　　Internal hold

Model selection illustration

When gripping a work piece as in the figure to the left, and with the following definitions.
n : Number of fingers
F : Gripping force(N)
μ : Coefficient of friction between the attachments and the work piece
m : Wrok piece mass(Kg)
g : Gravitational acceleration(= 9.8 m/s^2)
mg : Work piece weight(N)

The conditions under which the work piece will no drop

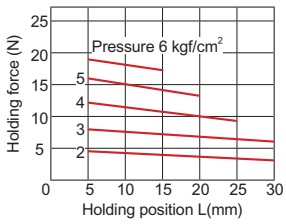
n x μ F > mg
And thereforce, F > mg / (n x μ)
With "a" representing the extra margin, F is determined by the following formula :
F = a x mg / (n x μ)



DSHT Capacity

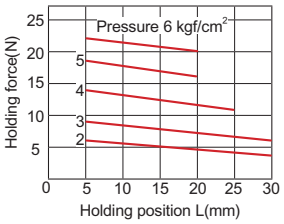
External hold

DSHT16



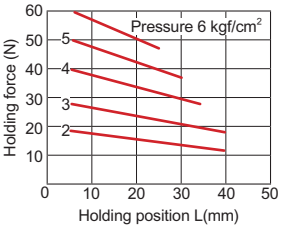
Internal hold

DSHT16



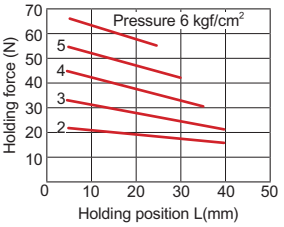
External hold

DSHT25

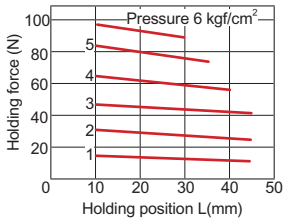


Internal hold

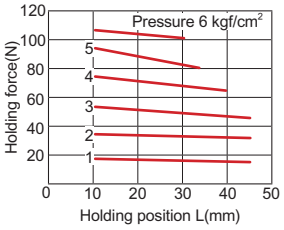
DSHT25



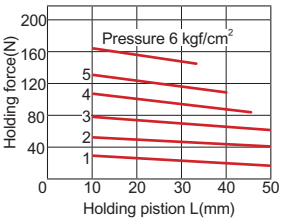
DSHT32



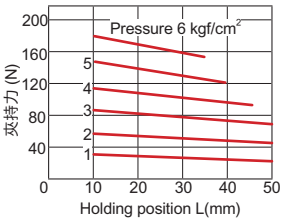
DSHT32



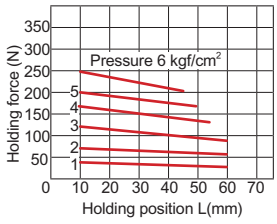
DSHT40



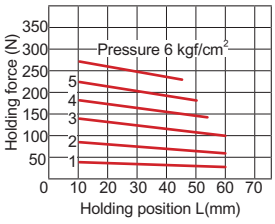
DSHT40



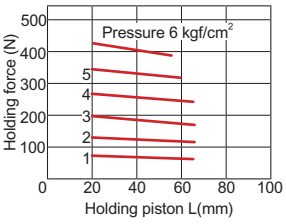
DSHT50



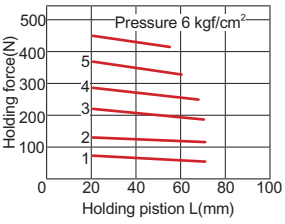
DSHT50



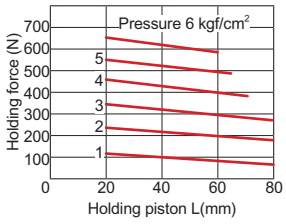
DSHT63



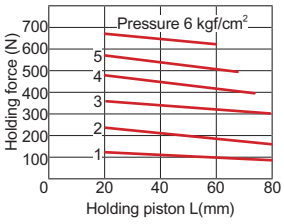
DSHT63



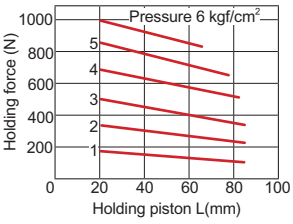
DSHT80



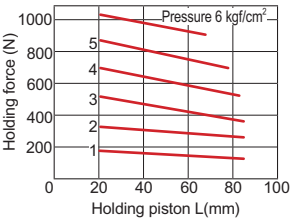
DSHT80



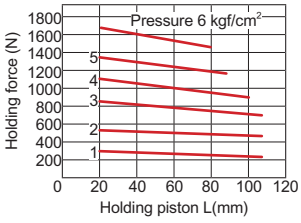
DSHT63



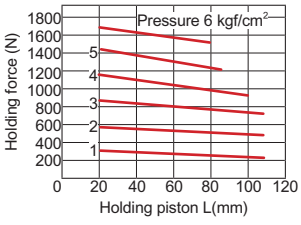
DSHT63



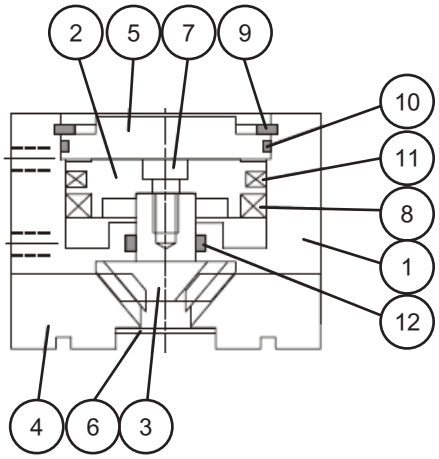
DSHT125



DSHT125



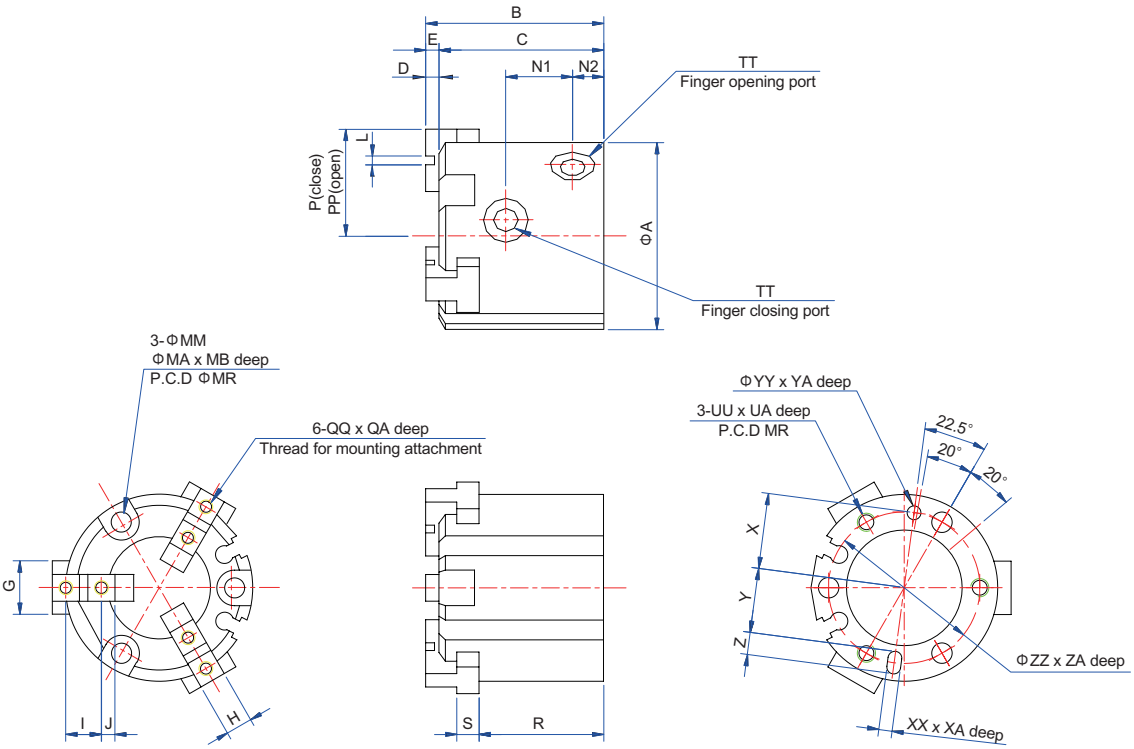
DSHT Inside structure



Parts list

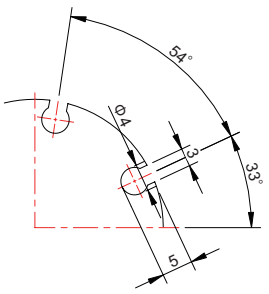
No.	Part name	Material
1	Body	Aluminium alloy
2	Piston	Aluminium alloy
3	Cam	Carbon steel
4	Finger	Carbon steel
5	Cap	Aluminium alloy
6	End plate	Stainless steel
7	Piston bolt	Stainless steel
8	Magnet ring	Magnet material
9	Snap ring	Carbon steel
10	Cover ring	NBR
11	Piston packing	NBR
12	Rod packing	NBR

DSHT Bore Φ16 ~ 25 / Dimensional featuers

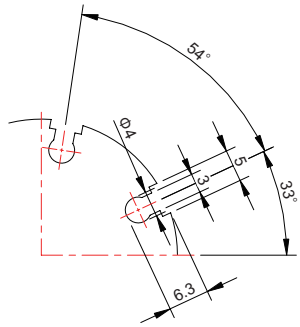


Auto switch mounting groove position

● Bore Φ16



● Bore Φ25

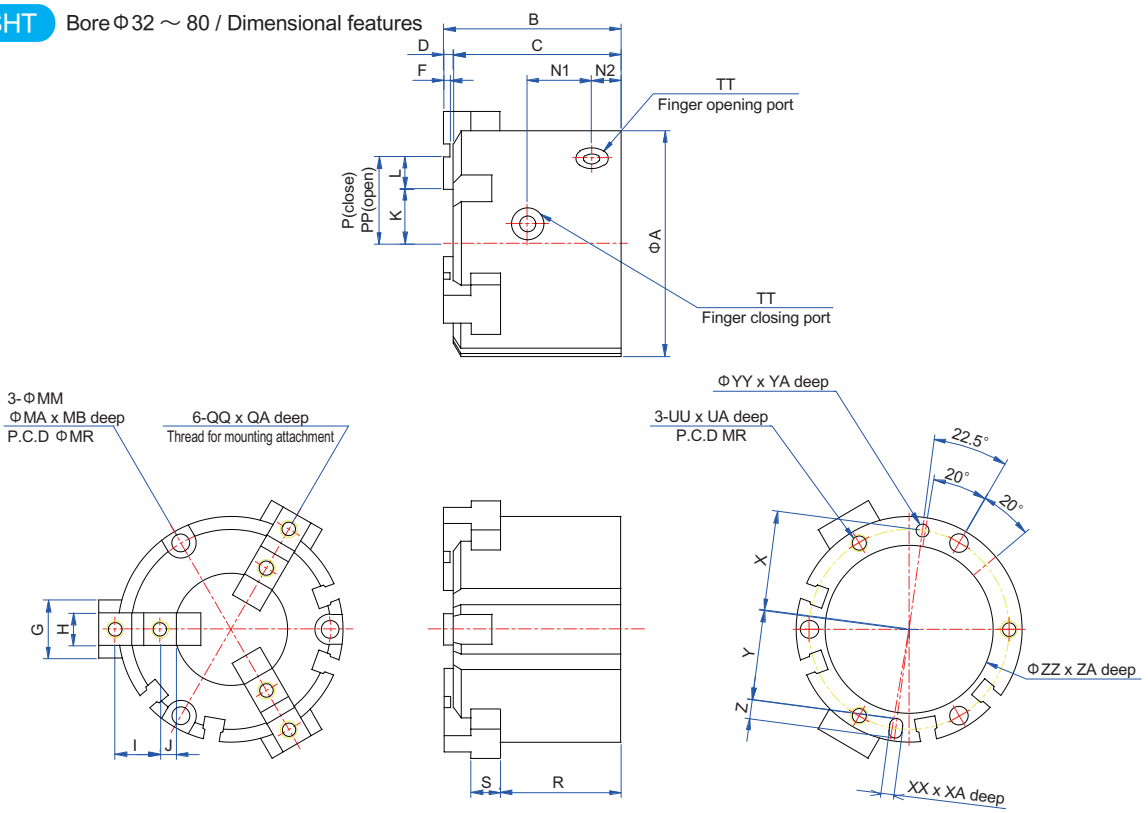


Dimensional table

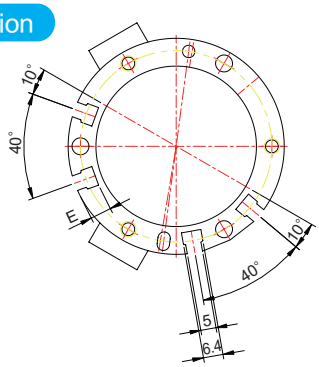
Mark / Bore	A	B	C	D	E	G	H	I	J	L	MA	MB	MM	MR	N1	N2	P	PP	QA	QQ
Φ16	30	35	32	2	3	8	5h9 $^{+0}_{-0.030}$	6	2	2H9 $^{+0.025}_{-0}$	6.5	8	3.4	25	11	7	15	17.5	5	M3x0.5
Φ25	42	40	37	2	3	12	6h9 $^{+0}_{-0.036}$	8	3	2H9 $^{+0.025}_{-0}$	8	10	4.5	34	15	7	21	24	6	M3x0.5

Mark / Bore	R	S	TT	UA	UU	X	XA	XX	Y	YY	Z	ZA	ZZ
Φ16	25	4	M3x0.5	4.5	M3x0.5	12.5	2	2H9 $^{+0.025}_{-0}$	11	2H9 $^{+0.025}_{-0}$	3	1.5	17H9 $^{+0.043}_{-0}$
Φ25	28	5	M5x0.8	6	M4x0.7	17	3	2H9 $^{+0.025}_{-0}$	14.5	3H9 $^{+0.025}_{-0}$	5	1.5	26H9 $^{+0.043}_{-0}$

DSHT Bore Φ32 ~ 80 / Dimensional features



Auto switch mounting groove position

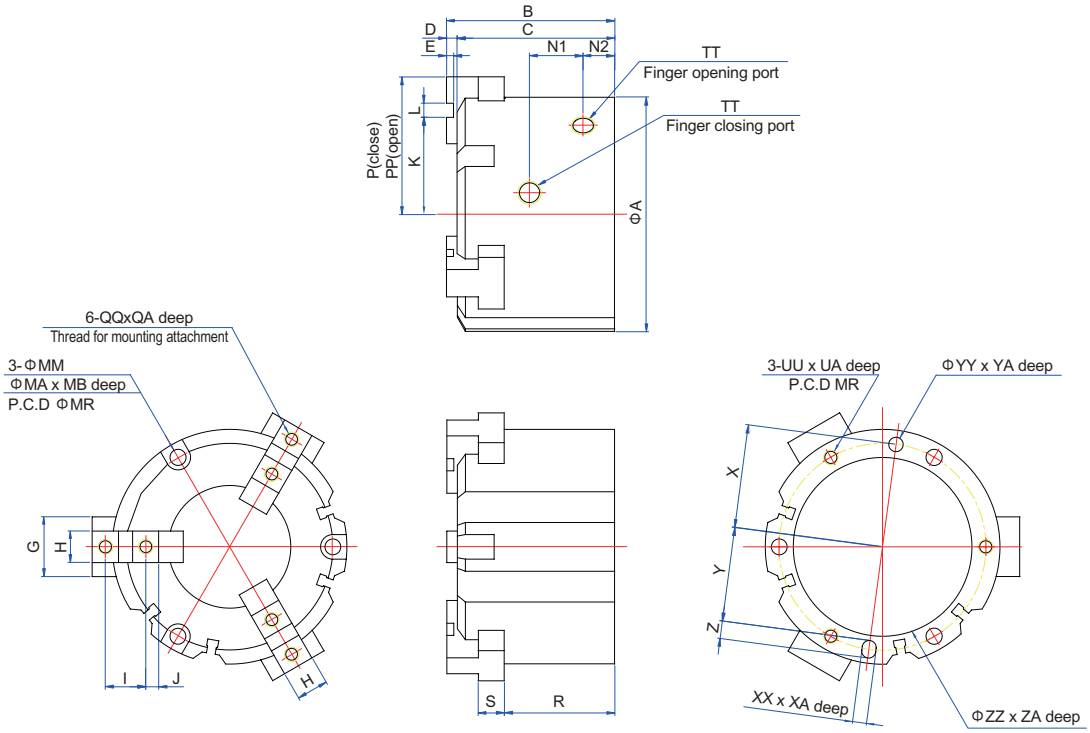


Dimensional table

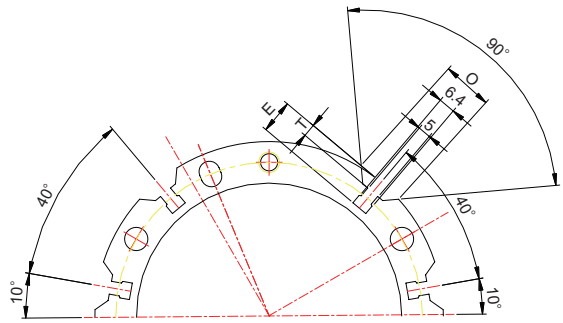
Mark / Bore	A	B	C	D	E	F	G	H	I	J	K	L	MA	MB	MM	MR	N1	N2	P	PP	QA
Φ32	52	44	41	3	6	2	14	8h9 $^{+0}_{-0.036}$	11	4.5	21	2H9 $^{+0.025}_{-0}$	8	9	4.5	44	16	8	28	32	8
Φ40	62	47	44	3	8	2	16	8h9 $^{+0}_{-0.036}$	12	4.5	23	3H9 $^{+0.030}_{-0}$	9.5	9	5.5	53	17	9	31	35	8
Φ50	70	55	52	3	7	2	18	10h9 $^{+0}_{-0.043}$	14	5	27	4H9 $^{+0.030}_{-0}$	9.5	12	5.5	62	20	9	35	41	10
Φ63	86	66	62	4	7.5	3	24	12h9 $^{+0}_{-0.043}$	17	5.5	34	6H9 $^{+0.036}_{-0}$	11	14	6.6	76	22	12	43	51	10
Φ80	106	82	77	5	9	4	28	14h9 $^{+0}_{-0.043}$	20	6	44	8H9 $^{+0.036}_{-0}$	11	19	6.6	95	27	13.5	53.5	63.5	12

Mark / Bore	QQ	R	S	TT	UA	UU	X	XA	XX	Y	YY	Z	ZA	ZZ
Φ32	M4x0.7	30.5	6	M5x0.8	6	M4x0.7	22	3	3H9 $^{+0.030}_{-0}$	19.5	3H9 $^{+0.030}_{-0}$	5	2	34H9 $^{+0.062}_{-0}$
Φ40	M4x0.7	32	7	M5x0.8	7.5	M5x0.8	26.5	4	4H9 $^{+0.030}_{-0}$	23.5	4H9 $^{+0.030}_{-0}$	6	2	42H9 $^{+0.062}_{-0}$
Φ50	M5x0.8	37.5	9	M5x0.8	9	M5x0.8	31	4	4H9 $^{+0.030}_{-0}$	28	4H9 $^{+0.030}_{-0}$	6	2	52H9 $^{+0.074}_{-0}$
Φ63	M5x0.8	44	11	M5x0.8	10	M6x1.0	38	5	5H9 $^{+0.030}_{-0}$	34.5	5H9 $^{+0.030}_{-0}$	7	2.5	65H9 $^{+0.074}_{-0}$
Φ80	M6x1.0	56	12	Rc1/8	12	M6x1.0	47.5	6	6H9 $^{+0.036}_{-0}$	43.5	6H9 $^{+0.036}_{-0}$	8	3	82H9 $^{+0.087}_{-0}$

DSHT Bore Φ100 ~ 125 / Dimensional features



Auto switch mounting groove position (4 places)



Dimensional table

Mark / Bore	A	B	C	D	E	F	G	H	I	J	L	MA	MB	MM	MR	N1	N2	P	PP	QA	K
Φ100	134	96	90	6	13	4	34	18h9 $^{+0}_{-0.052}$	23	7.5	8H9 $^{+0.036}_{-0}$	14	21	9	118	30.6	18	66	78	16	42.5
Φ125	166	122	114	8	15	6	40	22h9 $^{+0}_{-0.052}$	31	10.5	10H9 $^{+0.043}_{-0}$	17.5	34	11	148	38	23.5	82	98	20	50

Mark / Bore	QQ	R	S	T	TT	UA	UU	X	XA	XX	Y	YY	Z	ZA	ZZ
Φ100	M8x1.25	63	15	5	Rc1/4	16	M8x1.25	59	6	8H9 $^{+0.036}_{-0}$	54	8H9 $^{+0.036}_{-0}$	10	4	102H9 $^{+0.087}_{-0}$
Φ125	M10x1.5	64	18	7	Rc3/8	20	M10x1.5	74	8	10H9 $^{+0.043}_{-0}$	68	10H9 $^{+0.043}_{-0}$	12	6	103H9 $^{+0.100}_{-0}$