

KES

Air Cylinder

KES G – R501B

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1. Scope of application

This standard shall be applied to oil-supply air cylinder (Called as cylinder below) used at air pressure system of measuring tools.

2. Type

The type of a cylinder is two kinds at table 1.

Table 1

Type	Type No.	Connecting method of rod front end	Using pressure kg / cm ²	Using condition		
				Environment temperature °C	Average speed mm/s	Stroke mm
Type 1	59943	Screw method	More than 7	5 ~ 60	50 ~ 300	10 ~ 150
Type 2	59944	Joint pin method				

3. Material

The material of parts composed of a cylinder follows table of component part.

4. Shape and dimension

The shape and dimension of parts composed of a cylinder follows additional table 1 ~ 7.

5. Screw

- (1) The mounting screw of a cylinder and the screw of a piston are 2 grade of KS B 0211 (Allowable limit value and tolerance of meter normal screw).
- (2) The screw of connection sphere of a pipe (pot hole) is A grade of KS B 0211 (Parallel screw for a pipe).

6. Appearance

It should have no harmful steel thorn, scratch and other flaws on using a cylinder.

7. Performance

7.1 Operation

After setting it on a cylinder horizontally and training it a few times, when operating it under following conditions, it should be operated smoothly and have no permanent deformation and other problem.

- (1) When applying air pressure of $1\text{kg} / \text{cm}^2$ without load and reciprocating more than 3 times for overall stroke at the average speed of 50 mm/sec.
- (2) When applying air pressure of $7\text{kgf} / \text{cm}^2$ with load of table 2 in the axial direction of a rod and reciprocating more than 3 times for overall stroke at the average speed of 100 mm/sec.

Table 2

Cylinder inner diameter mm	30	40	50	63	80
Load kgf	40	52	82	130	210

Remark : The load is equivalent to 60% of theoretical output for air pressure of $7\text{kgf} / \text{cm}^2$.

7.2 Pressure resistance

When applying air pressure of $14\text{kgf} / \text{cm}^2$ to a cylinder and leaving it for 12hrs, it should have no breakage, air pressure loss from the operation and other problem.

8. Inspection

Carr out inspection on a cylinder for 3 ~ 7 clauses and follow each regulations appropriately.

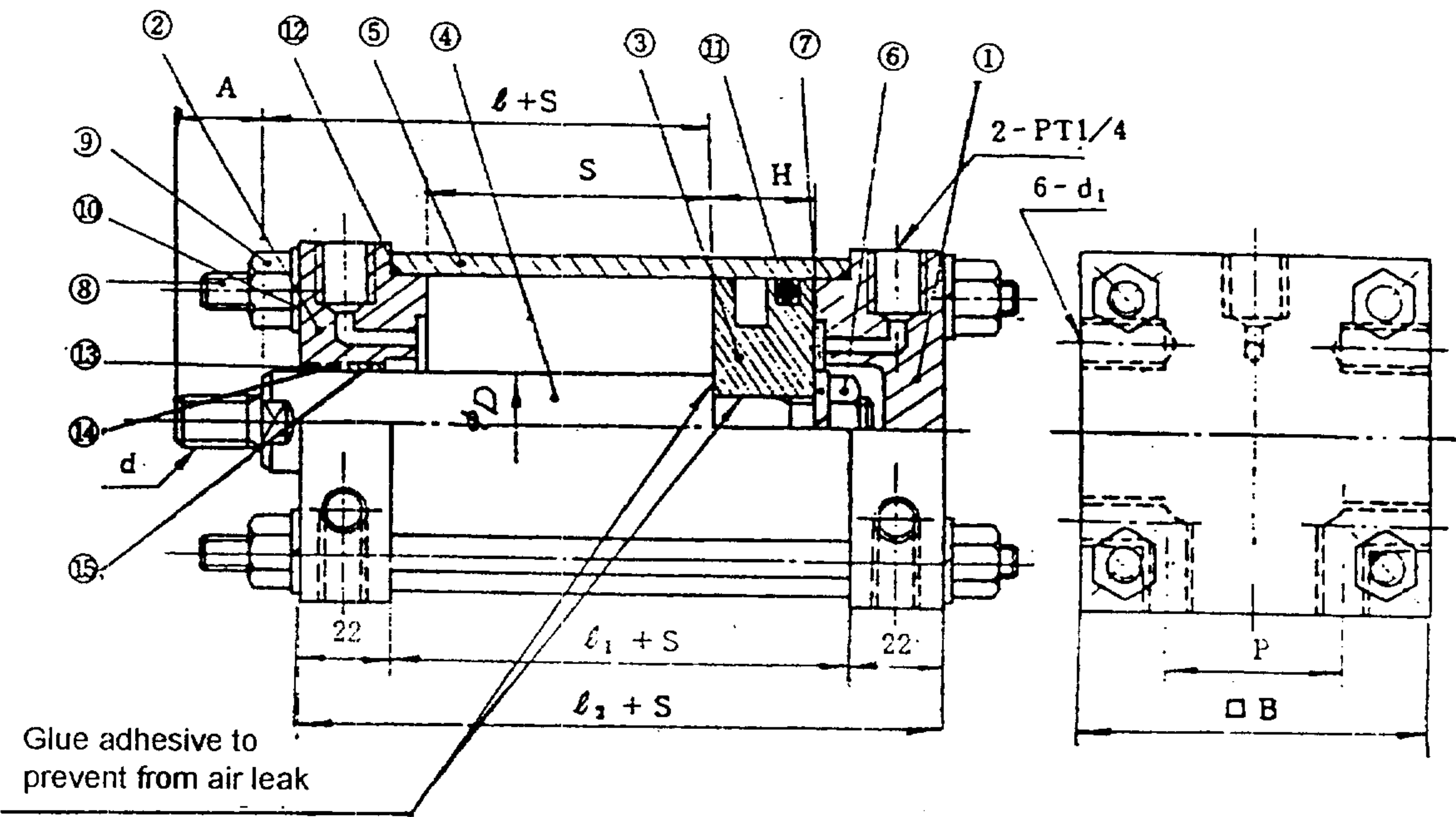
9. Composition of part number

The part number of a cylinder is composed of type number, calling number, stroke number and additional number.

Additional table 1 Composition part list of air cylinder

No	Name	Standard part Cylinder inner diameter (mm) Material	Part Number						Remark
			30	40	50	63	80		
1	Head Cover	AC4C-F (GC25)	59943 30001	59943 40001	59943 50001	59943 60001	59943 80001	1	
2	Rod Cover	AC4C-F (GC25)	59943 30002	59943 40002	59943 50002	59943 60002	59943 80002	1	
3	Piston	A2017 BE-T4	59943 30003	59943 40003	59943 50003	59943 60003	59943 80003	1	
4	Piston Rod	SM45C	59943 30××4	59943 40××4	59943 50××4	59943 60××4	59943 80××4	1	XX part is changed number according to the stroke
5	Cylinder Tube	STKM13C (A6063 TDS-T6)	59943 30××5	59943 40××5	59943 50××5	59943 60××5	59943 80××5	1	
6	Piston Nut	SS41C	59943 30006	59943 40006	59943 50006	59943 60006	59943 80006	1	
7	Spring Washer	HSWR	99971 0800	99971 1000	99971 1400	99971 1400	99971 1600	1	
8	Stud Bolt	SM20C	59943 30××7	59943 40××7	59943 50××7	59943 60××7	59943 80××7	4	XX part is changed number according to the stroke
9	Hexagon Nut	SM20C	99906 0800	99906 0800	99906 0800	99906 0800	99906 0800	8	KS B 1012
10	Spring Washer	HSWR	99971 0800	99971 0800	99971 0800	99971 0800	99971 0800	8	
11	"O" Ring	NBR	99541 0240 (P24)	99541 0340 (P34)	99541 0440 (P44)	99541 0530 (P53)	99541 0700 (P70)	1	KS B 2805
12	Tube Gasket	//	59943 30008	59943 40008	59943 50008	59943 60008	59943 80008	2	
13	Winer Ring	//		SER-16	SER-20	SER-20	SER-25	1	KS B 2805
14	"O" Ring	//	99541 0120 (P12)	99541 0160 (P16)	99541 0200 (P20)	99541 0200 (P20)	99541 0250 (P25)	1	
15	Bush	LS10 SPCE	59943 30009	59943 40009	59943 50009	59943 60009	59943 80009	1	

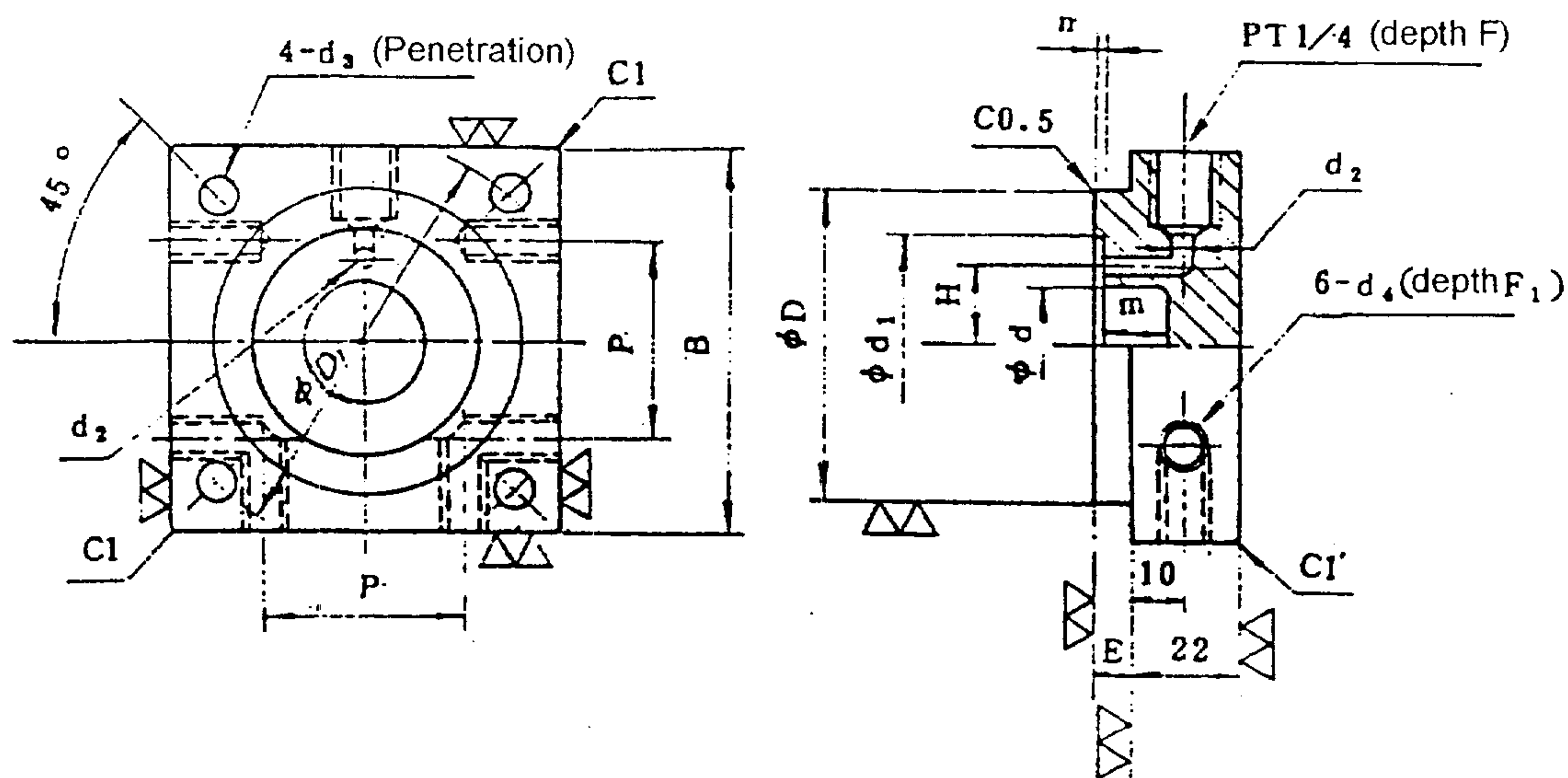
Additional table 2 Air cylinder



Unit : mm

Calling No.	3	4	5	6	8
Cylinder Inner D.	30	40	50	63	80
D	12	16	20		25
d	M8 × 1.25	M 10 × 1.25			M 12 × 1.5
d ₁	M8 × 1.25			M 10 × 1.25	
A	18			23	
B	52	60	70	80	95
H	18	20	21	24	26
ℓ	37			40	
ℓ ₁	30			40	
ℓ ₂	74			84	
P	20	27	33	38	50

Additional table 3 Head cover



Material : GC 25

Unit : mm

Calling No.		3	4	5	6	8
CYL . Inner D.		30	40	50	63	80
D	Base dimension	30	40	50	63	80
	Tolerance (h 8)	0 -0.039			0 -0.046	
D ₁		52	62	72	87	105
d		18	22	26		30
d ₁		28	34	46		52
d ₂		4		5		
d ₃		8.5				10.5
d ₄		M 8 × 1.25			M 10 × 1.25	
B	Base dimension	52	60	70	80	95
	Tolerance	± 0.05				
E		6	5	4.5	8	7
F		10	12			
F ₁		15			18	
H		12	14	19		22
m		14	18			22
n		2				3
p		20	27	33	38	50