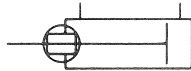


NON-ROTATING BLOCK CYLINDERS

DOUBLE ACTING TYPE

SYMBOL

Double Acting, Non-rotating (HJDAL)



SPECIFICATIONS

Item	Nominal bore size inch (mm)					
	3/4 (20)	1 (25)	1 1/4 (32)	1 1/2 (40)	2 (50)	2 1/2 (63)
Operation	All double acting types					
Media	Air					
Pressure – PSI (kgf/cm ²)	15 ~ 100 (1 ~ 7)					
Temperature °F (°C)	32 ~ 140 (0 ~ 60)					
Operating speeds in./sec. (mm/sec)	1 ~ 20 (30 ~ 500)					1 ~ 13.5 (30 ~ 350)
Bumpers	Not available			Optional		
Lubrication	Not required					
Maximum rod rotation (degrees)	± 1.5		± 0.8		± 0.6	
Maximum torque lb. • in. (kgf • cm)	0.17 (0.2)	0.22 (0.25)		0.39 (0.45)		
Port size	10-32		1/8 NPT		1/4 NPT	

NOTE: Refer to page 56 for mounting and handling information.

HOW TO ORDER INFORMATION

HJ **DA** **L** **25 x 1/4** — **Blank** — **Blank**

BORE 1 x STROKE
 OPTION₂
 Blank: No option
 S: Magnet₃
 Blank: No bumper
 R: Bumper₄
 Non-rotating cylinder
 TYPE
 DA: Double acting
 ROD OPTIONS
 Blank: Female rod
 B: Male rods₅
 SERIES: Block cylinder

NOTE : Ordering strokes over 1", use ___" / ___. Examples: 1" 1/4, 2" 1/8.

NOTE 1: When ordering bore size, specify by using actual mm bore size.

NOTE 2: Fluoroelastomer option not available.

NOTE 3: Refer to Sensor Section for sensor switch selection and information.

NOTE 4: Bumper option only available in bore sizes 1 1/2 (40) thru 2 1/2 (63) .

NOTE 5: Refer to page 50 for male rod thread (B) information.
Rod nuts sold separately.

SQUARE ROD TYPE

The square rod style accomplishes the non-rotating function in an extremely simplified design. The square rod eliminates the need for rod end guide blocks or internal guide pins common to double acting, non-rotating cylinders.

BORES AND STROKES

Nominal bore in. (mm)	Standard Strokes – in.		Maximum stroke
	w/o magnet	w/magnet	
3/4 (20)	1/4, 3/8, 1/2, 5/8, 3/4, 1, 1 1/4	1/2, 5/8, 3/4, 1	1 1/4
1 (25)	1/4, 1/2, 3/4, 1	1/2, 3/4, 1, 1 1/4, 1 1/2, 2	2
1 1/4 (32)	1 1/4, 1 1/2, 2, 2 1/4	1 1/2, 2	
1 1/2 (40)	1/4, 3/8, 1/2, 5/8, 3/4, 1, 1 1/4, 1 1/2, 2, 3, 4	1/2, 5/8, 3/4, 1, 1 1/4, 1 1/2, 2, 3, 4	4 (3 1/2)*
2 (50)	1/2, 3/4, 1, 1 1/4, 1 1/2, 3, 4	1/2, 3/4, 1, 1 1/4, 1 1/2, 3, 4	4 (3 1/2)*
2 1/2 (63)			

• Maximum stroke (in parenthesis) for cylinders with magnet.

NOTES:

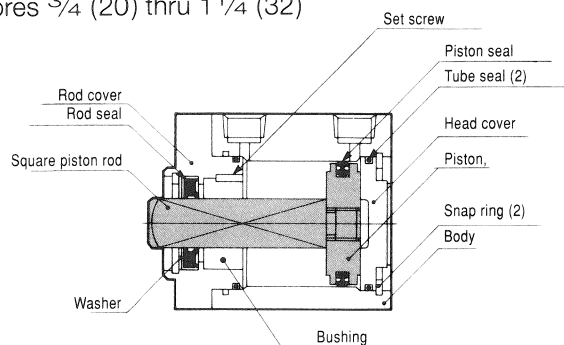
See page 56 for non-standard strokes.

Stroke tolerance: +.040"/–.000".

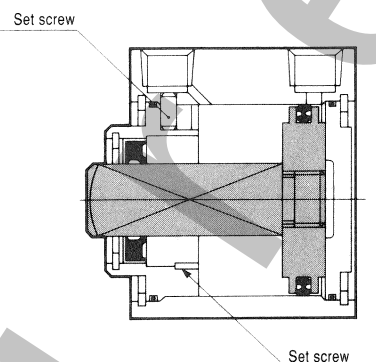
INNER CONSTRUCTION AND MAJOR PARTS

DOUBLE ACTING, NON-ROTATING (HJDAL)

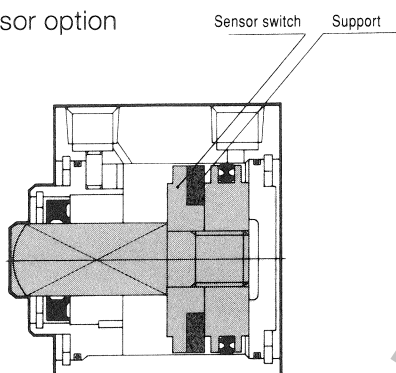
Bores $\frac{3}{4}$ (20) thru $1\frac{1}{4}$ (32)



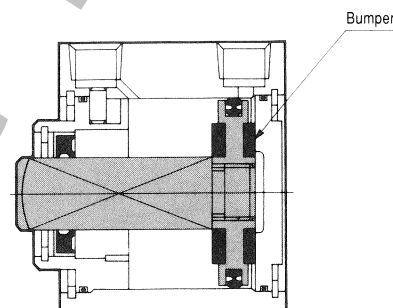
Bores $1\frac{1}{2}$ (40) thru $2\frac{1}{2}$ (63)



Magnet/sensor option



Bumper: Bores $1\frac{1}{2}$ (40) thru $2\frac{1}{2}$ (63)



MATERIALS OF MAJOR PARTS

Item	Nominal bore size inch (mm)					
	$\frac{3}{4}$ (20)	1 (25)	$1\frac{1}{4}$ (32)	$1\frac{1}{2}$ (40)	2 (50)	$2\frac{1}{2}$ (63)
Body	Aluminum (anodized)					
Piston	Aluminum (anodized)					
Piston rod	Hard steel (chrome plated)					
Seals (piston, tube)	Buna N					
Rod seal	Polyurethane					
Set screw	Hard steel					
Washer	Hard steel					
Rod cover	Aluminum (anodized)					
Head cover	Aluminum (anodized)					
Snap ring	Hard steel					
Magnet	Resinous magnet					
Support	Aluminum (anodized)					
Bumper	Not available		Buna N			

NOTE: Piston and piston rod are stainless steel for 1" (25) bore size with magnet option (S).

WEIGHT

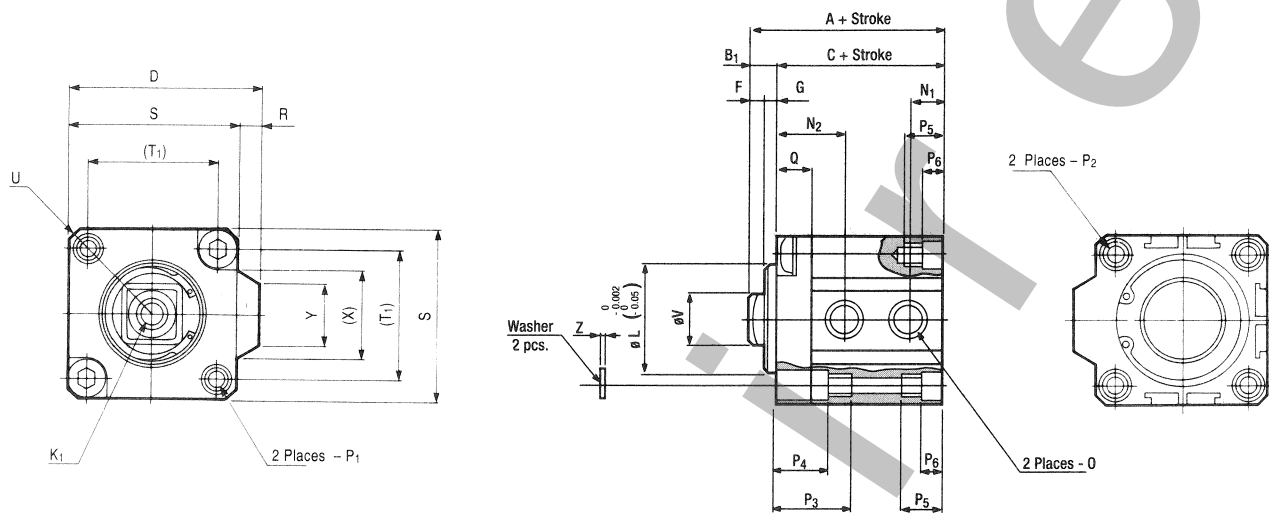
oz. (gf)

Bore Nominal (mm)	Base weight	Add-on weight		Sensor switches	
		Stroke per $\frac{1}{4}$	Magnet option	CS9H	CS3H, CS4H, CS5H
$\frac{3}{4}$ (20)	2.8 (80)	.49 (14)	1.02 (29)	1.41 (40)	1.06 (30)
1 (25)	3.9 (110)	.63 (17.9)	1.41 (40)		
$1\frac{1}{4}$ (32)	5.9 (166)	.94 (26.7)	1.66 (47)		
$1\frac{1}{2}$ (40)	8.3 (235)	1.12 (31.8)	2.40 (68)		
2 (50)	15.3 (434)	1.61 (45.7)	3.88 (110)		
$2\frac{1}{2}$ (63)	21.9 (620)	2.33 (66)	5.47 (155)		

NOTE: The chart depicts standard strokes.

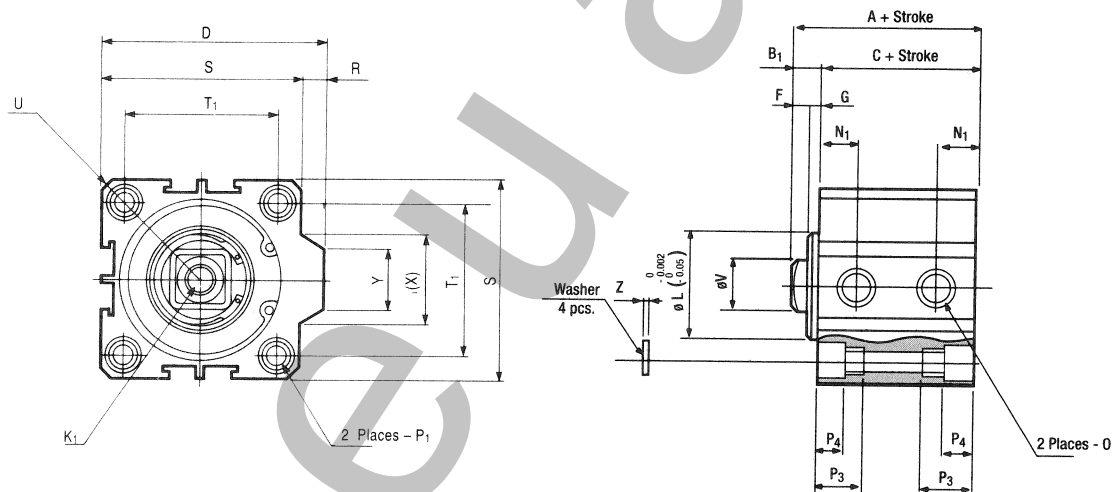
DOUBLE ACTING, NON-ROTATING (HJDAL)
DOUBLE ACTING, NON-ROTATING WITH MAGNET (HJDALS)

Bores $\frac{3}{4}$ (20) thru $1\frac{1}{4}$ (32)



Refer to page 56 for non-standard strokes.

Bores 1 1/2 (40) thru 2 1/2 (63)



Refer to page 56 for non-standard strokes.

Bore Nominal in. (mm)	Dimension - inch (mm)										
	HJDAL (without magnet)			HJDALS (with magnet)			D	F	G	K ₁	L
	A	B ₁	C	A	B ₁	C					
3/4 (20)	1.260 (32)	.236 (6)	1.024 (26)	1.634 (41.5)	.236 (6)	1.398 (35.5)	1.417 (36)	.157 (4)	.079 (2)	8-32 UNC x .236 (6) dp.	.709 (18)
1 (25)	1.319 (33.5)	.236 (6)	1.083 (27.5)	1.693 (43)	.236 (6)	1.457 (37)	1.654 (42)	.157 (4)	.079 (2)	8-32 UNC x .394 (10) dp.	.709 (18)
1 1/4 (32)	1.595 (40.5)	.276 (7)	1.319 (33.5)	1.969 (50)	.276 (7)	1.693 (43)	1.969 (50)	.157 (4)	.118 (3)	5/16-18 UNC x .472 (12) dp.	1.102 (28)
1 1/2 (40)	1.693 (43)	.276 (7)	1.417 (36)	2.067 (52.5)	.276 (7)	1.792 (45.5)	2.303 (58.5)	.157 (4)	.118 (3)	5/16-18 UNC x .472 (12) dp.	1.102 (28)
2 (50)	1.917 (48.7)	.422 (10.7)	1.496 (38)	2.291 (58.2)	.422 (10.7)	1.870 (47.5)	2.815 (71.5)	.197 (5)	.225 (5.7)	3/8-16 UNC x .591 (15) dp.	1.496 (38)
2 1/2 (63)	2.016 (51.2)	.362 (9.2)	1.654 (42)	2.390 (60.7)	.362 (9.2)	2.028 (51.5)	3.327 (84.5)	.197 (5)	.165 (4.2)	3/8-16 UNC x .591 (15) dp.	1.575 (40)

Bore Nominal in. (mm)	Dimension - inch (mm)									
	M	N ₁	N ₂	O	P ₁ - thru hole x C bore x thru hole thread		P ₃	P ₄	P ₅	P ₆
3/4 (20)	.118 (3)	.296 (7.5)	.551 (14)	10-32	.138 (3.5) x .256 (6.5) x 10-32 UNF		.630 (16)	.433 (11)	.374 (9.5)	.177 (4.5)
1 (25)	.118 (3)	.315 (8)	.571 (14.5)	10-32	.181 (4.6) x .315 (8) x 1/4-20 UNC		.709 (18)	.472 (12)	.453 (11.5)	.217 (5.5)
1 1/4 (32)	.118 (3)	.354 (9)*	.709 (18)**	1/8 NPT	.181 (4.6) x .315 (8) x 1/4-20 UNC		.807 (20.5)	.571 (14.5)	.453 (11.5)	.217 (5.5)
1 1/2 (40)	.118 (3)	.394 (10)	-	1/8 NPT	.225 (5.7) x .374 (9.5) x 5/16-18 UNC		.611 (15.5)	.296 (7.5)	-	-
2 (50)	.118 (3)	.394 (10)	-	1/4 NPT	.276 (7) x .433 (11) x 3/8-16 UNC		.650 (16.5)	.335 (8.5)	-	-
2 1/2 (63)	.118 (3)	.472 (12)	-	1/4 NPT	.276 (7) x .433 (11) x 3/8-16 UNC		.650 (16.5)	.335 (8.5)	-	-

Bore Nominal in. (mm)	Dimension - inch (mm)								
	Q	R	S	T ₁	U (Radius)	V	X	Y	Z
3/4 (20)	.256 (6.5)	.079 (2)	1.339 (34)	.945 (24)	.866 (22)	.292 (7.4)	.484 (12.3)	.394 (10)	.039 (1)
1 (25)	.256 (6.5)	.079 (2)	1.575 (40)	1.102 (28)	.984 (25)	.292 (7.4)	.484 (12.3)	.394 (10)	.039 (1)
1 1/4 (32)	.256 (6.5)	.236 (6)	1.732 (44)	1.339 (34)	1.162 (29.5)	.513 (13)	.512 (13)	.630 (16)	.039 (1)
1 1/2 (40)	-	.256 (6.5)	2.047 (52)	1.575 (40)	1.378 (35)	.513 (13)	.512 (13)	.630 (16)	.063 (1.6)
2 (50)	-	.374 (9.5)	2.441 (62)	1.890 (48)	1.614 (41)	.710 (18)	.709 (18)	.787 (20)	.063 (1.6)
2 1/2 (63)	-	.374 (9.5)	2.953 (75)	2.362 (60)	1.969 (50)	.710 (18)	.709 (18)	.787 (20)	.063 (1.6)

*Dimension is .276 (7) for 1 1/4 (32) bore with 1/4" stroke.

**Dimension is .630 (16) for 1 1/4 (32) bore with 1/4" stroke.

NOTE 1: Please refer to page 50 for male rod thread information.

NOTE 2: Please refer to page 50 for sensor switch dimensional information.