

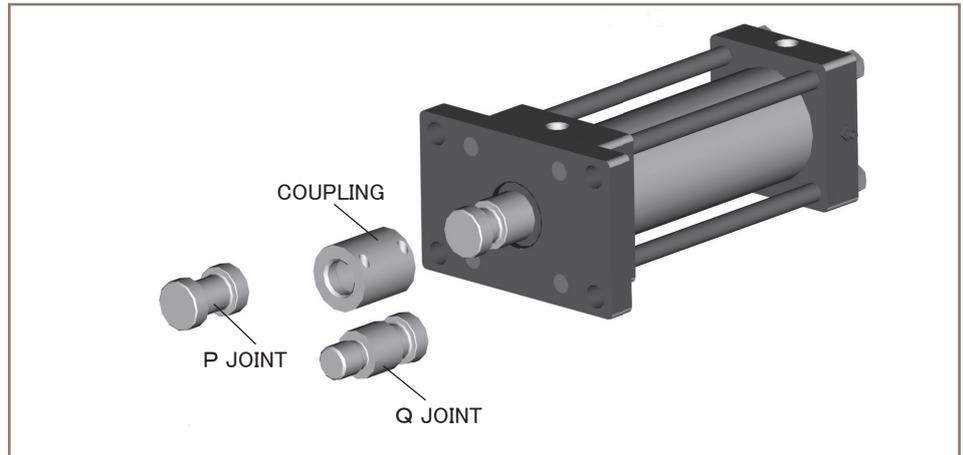
150HD-1 Series

15MPa Double Acting 2 stage Hydraulic Cylinder for MOLD Industries.

IDEAL FOR CORE REMOVAL IN DIE CASTING MOLDS

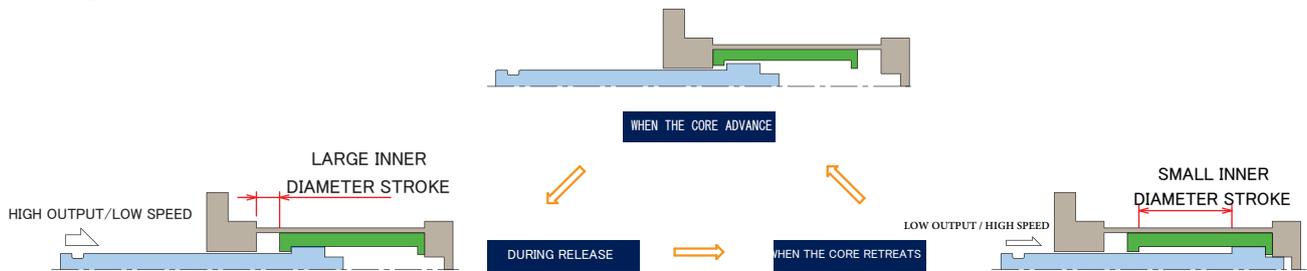


- After release, use the small internal cylinder cycle. Return structure allow cycle time can be shortened.
- The volume inside the cylinder can be reduced. The flow rate is reduced due to the entire item is compact.
- Couplings and joints for connection 2 types available. In addition, as an option thread the connection on the cylinder body side can be shaped.



Explanation of Cylinder Operation.

When used as a core for die-casting dies, a large output is required only when the mold is released and a large output is not required when the core is advanced or retracted. Therefore, a general cylinder requires a large flow rate to move the large bore to the forward end or the backward end. by incorporating a small-diameter cylinder in a two-stage punching cylinder, the range where no output is required can be increased or decreased by increasing or decreasing the flow rate or speed.



STANDARD SPECIFICATION

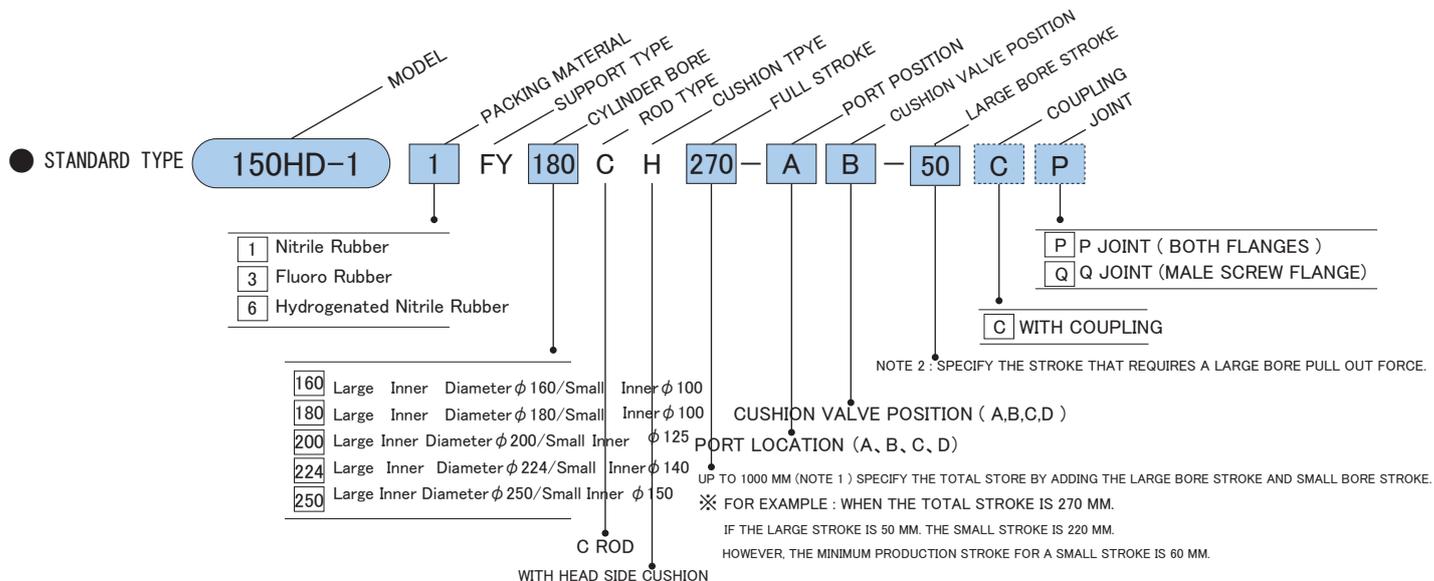
Series	150HD-1	
Nominal Pressure	15MPa	
Pressure Resistance	22.5MPa	
Minimum Operating Pressure	0.3MPa	
Operating Temperature Range	(Ambient Temperature)	-10°C ~ +120°C (Note 1)
Cushion Mechanism	Metal Fitting Method (Head side only)	
Applicable Hydraulic Oil	General mineral hydraulic fluid (if other hydraulic fluid is used, see compatibility with packing)	
Support Type	FY Type	
Related Parts	*Coupling * Double flange joint (P Joint) * Male thread / Flang Joint (Q Joint)	

Note 1) Operating Temperature range differs depending on the packing material.

CAT. S6-229



ENGINEERING YOUR SUCCESS.



* DUE TO THE STRUCTURE, A LARGE AMOUNT OF RESIDUAL OIL USED DURING FACTORY INSPECTION REMAINS IN THE CYLINDER.
PLEASE CONTACT US, IF YOU NEED MORE OUPUT THAN SMALL INNER DIAMETER WHEN PRESSING.

INNER DIAMETER/ROD DIAMETER

LARGE INNER DIAMETER	ϕ 160	ϕ 180	ϕ 200	ϕ 224	ϕ 250
SMALL INNER DIAMETER	ϕ 100	ϕ 100	ϕ 125	ϕ 140	ϕ 150
ROD DIAMETER	ϕ 70	ϕ 80	ϕ 90	ϕ 100	ϕ 112

STROKE PRODUCTION RANGE

MAXIMUM FULL STROKE	1000mm
SMALL BORE MINIMUM STROKE	60mm

HYDRAULIC OIL COMPATIBILITY OF PACKING MATERIAL AND OPERATING TEMPERATURE RANGE.

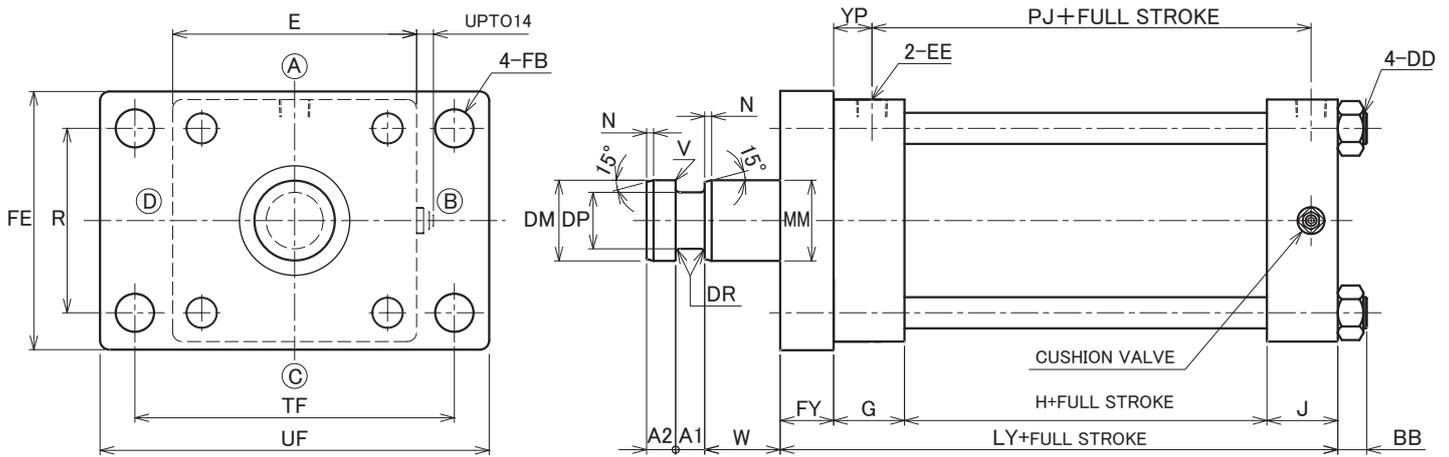
PACKING MATERIAL	GENERAL MINERAL HYDRAULIC OIL	WATER GLYCOL HYDRAULIC OIL	PHOSHATE ESTER HYDRAULIC OIL	OIL TEMPERATURE AND AMBIENT TEMPERATURE
1 NITRILE RUBBER	○	○	×	-10~+80°C
3 FLUORO RUBBER	○	×	○	0~+100°C
6 HYDROGENATED NITRILE RUBBER	○	◎	×	-10~+120°C

NOTE) 1.◎、○ INDICATE THAT THEY CAN BE USED AND X INDICATE THAT THEY CANNOT BE USED.
2.◎ INDICATES RECOMMENDED PACKING MATERIAL WHEN ABRASION RESISTANCE IS IMPORTANT.

THEORETICAL OUTPUT TABLE (100% LOAD FACTOR)

LARGE INNER DIAMETER (mm)	SMALL INNER DIAMETER (mm)	ROD DIAMETER (mm)	WHEN PULLING (LARGE INNER DIAMETER) (KN)	WHEN PULLING SMALL INNER DIAMETER (KN)	WHEN PRESSED SMALL INNER DIAMETER (KN)
160	100	70	243.87	60.08	117.81
180	100	80	306.31	42.41	117.81
200	125	90	375.81	88.65	184.08
224	140	100	473.31	113.10	230.91
250	150	112	588.53	117.29	265.07

● FY TYPE CYLINDER BODY

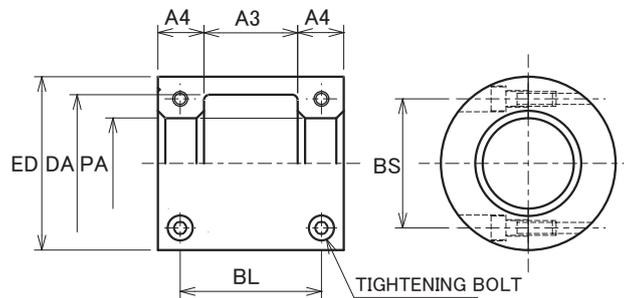


DIMENSIONS TABLE

INSIDE DIAMETER	A1	A2	BB	DD	DM	DP	DR	E	EE	FB	FE	FY	G
φ 160	25 ^{+0.5} _{+0.3}	25 ^{-0.2} _{-0.3}	25	M27X1.5	φ 70	φ 49 ^{-0.2} _{-0.3}	R3.5	□210	Rc3/4	φ 33	224	46	61
φ 180	25 ^{+0.5} _{+0.3}	25 ^{-0.2} _{-0.3}	27	M30X1.5	φ 80	φ 55 ^{-0.2} _{-0.3}	R4	□235	Rc3/4	φ 33	250	50	67
φ 200	30 ^{+0.5} _{+0.3}	30 ^{-0.2} _{-0.3}	29	M33X1.5	φ 90	φ 60 ^{-0.2} _{-0.3}	R5	□262	Rc3/4	φ 39	280	55	67
φ 224	35 ^{+0.5} _{+0.3}	35 ^{-0.2} _{-0.3}	34	M39X1.5	φ 100	φ 70 ^{-0.2} _{-0.3}	R5	□292	Rc3/4	φ 42	310	58	67
φ 250	35 ^{+0.5} _{+0.3}	35 ^{-0.2} _{-0.3}	37	M42X1.5	φ 110	φ 78 ^{-0.2} _{-0.3}	R5	□325	Rc3/4	φ 45	335	65	67

INSIDE DIAMETER	H	J	LY	MM	N	PJ	R	TF	UF	V	W	YP
φ 160	112	61	280	φ 70	3	178	160	275	335	C1	65	33
φ 180	116	62	295	φ 80	3	188	180	300	365	C1	65	31
φ 200	127	62	311	φ 90	6	199	210	335	405	C1	70	31
φ 224	137	72	334	φ 100	6	209	230	395	475	C2	80	31
φ 250	149	77	358	φ 112	6	221	250	425	515	C2	80	31

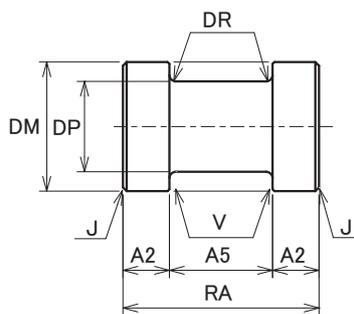
● COUPLING



DIMENSIONS TABLE AND COUPLING

INSIDE DIAMETER	A3	A4	BL	BS	DA	ED	PA	TIGHTENING BOLT
φ 160	50.4	24.8 ⁰ _{-0.2}	76	70	φ 74.5 ^{+0.4} ₀	φ 94	φ 49 ^{+0.1} ₀	M8x1.25xL25
φ 180	50.4	24.8 ⁰ _{-0.2}	76	80	φ 86.5 ^{+0.4} ₀	φ 104	φ 55 ^{+0.1} ₀	M8x1.25xL30
φ 200	60.6	29.7 ⁰ _{-0.2}	90	90	φ 96.5 ^{+0.4} ₀	φ 118	φ 60 ^{+0.1} ₀	M8x1.25xL30
φ 224	70.6	34.7 ⁰ _{-0.2}	116	92	φ 104.5 ^{+0.4} ₀	φ 134	φ 70 ^{+0.1} ₀	M12x1.75xL40
φ 250	70.6	34.7 ⁰ _{-0.2}	112	102	φ 116.5 ^{+0.4} ₀	φ 144	φ 78 ^{+0.1} ₀	M14x2xL40

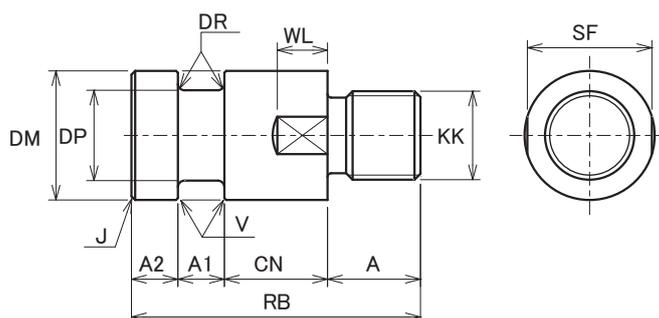
● P JOINT



DIMENSIONS TABLE / P JOINT

INSIDE DIAMETER	A2	A5	DM	DP	DR	J	RA	V
φ 160	25 ^{-0.2} _{-0.3}	55.5	φ 70	φ 49 ^{-0.2} _{-0.3}	R3.5	C2	105.5	C1
φ 180	25 ^{-0.2} _{-0.3}	55.5	φ 80	φ 55 ^{-0.2} _{-0.3}	R4	C2	105.5	C1
φ 200	30 ^{-0.2} _{-0.3}	65.5	φ 90	φ 60 ^{-0.2} _{-0.3}	R5	C2	125.5	C1
φ 224	35 ^{-0.2} _{-0.3}	75.5	φ 100	φ 70 ^{-0.2} _{-0.3}	R5	C2	145.5	C2
φ 250	35 ^{-0.2} _{-0.3}	75.5	φ 110	φ 78 ^{-0.2} _{-0.3}	R5	C2	145.5	C2

● Q JOINT



DIMENSIONS TABLE / Q JOINT

INSIDE DIAMETER	A	A1	A2	CN	DM	DP	DR	J	KK	RB	SF	V	WL
φ 160	50	25 ^{+0.5} _{+0.3}	25 ^{-0.2} _{-0.3}	55.5	φ 70	φ 49 ^{-0.2} _{-0.3}	R3.5	C2	M48x5	155.5	67	C1	27
φ 180	56	25 ^{+0.5} _{+0.3}	25 ^{-0.2} _{-0.3}	55.5	φ 80	φ 55 ^{-0.2} _{-0.3}	R4	C2	M56x5.5	161.5	77	C1	30
φ 200	60	30 ^{+0.5} _{+0.3}	30 ^{-0.2} _{-0.3}	65.5	φ 90	φ 60 ^{-0.2} _{-0.3}	R5	C2	M60x5.5	185.5	86	C1	20
φ 224	70	35 ^{+0.5} _{+0.3}	35 ^{-0.2} _{-0.3}	75.5	φ 100	φ 70 ^{-0.2} _{-0.3}	R5	C2	M70x2	215.5	95	C2	20
φ 250	80	35 ^{+0.5} _{+0.3}	35 ^{-0.2} _{-0.3}	75.5	φ 110	φ 78 ^{-0.2} _{-0.3}	R5	C2	M80x2	225.5	105	C2	20

株式会社 TAIYO

〒541-0051 大阪市中央区備後町2-6-8 サンライズビル12F URL:<http://www.taiyo-ltd.co.jp>

■ 東部エリア

東京営業所 TEL(03)4574-6600 FAX(03)4574-6604
 仙台営業所 TEL(022)238-1818 FAX(022)239-4486
 太田営業所 TEL(0276)46-5131 FAX(0276)46-1164

■ 西部エリア

大阪営業所 TEL(06)4967-1115 FAX(06)4967-1118
 広島営業所 TEL(082)243-3373 FAX(082)245-0069
 福岡営業所 TEL(092)452-3101 FAX(092)452-3107

■ 海外セクション

大阪営業2課 TEL(06)4967-1105 FAX(06)4967-1125

■ 中部エリア

名古屋営業所 TEL(052)482-1100 FAX(052)482-6352
 豊田営業所 TEL(0565)33-7170 FAX(0565)33-8255

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