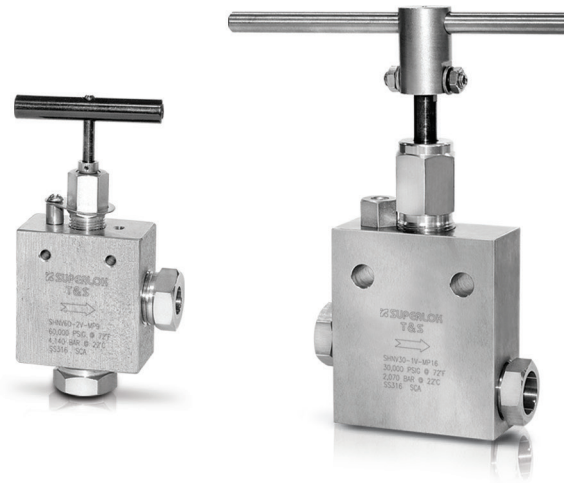


High Pressure Needle Valves

SHNV60 Series 60,000 psi (4,140 bar)

Features

- Pressures to 60,000 psi (4,140 bar)
- Non-rotating stem tips.
- Available sizes : 1/4", 3/8", 9/16", 1".
- 316 stainless steel high tensile bodies.
- Choice of VEE or Regulating stem tip.
- Packing set consists of multiple Teflon packing with nylon back up.



Specifications

- Maximum Working Pressure rating: 60,000psig (4,140bar) @72 F°(22 C°)
- Temperature rating: 0 to 450 F°(-17.8 to 232 C°) with Teflon packing and up to 1200 F°(648 C°) with optional grafoil packing.

Technical Data

Valve Flow Coefficient

Tube O.D	Connection	Orifice, In. (mm)	*Cv	Pressure / Temperature Rating @72 F°(22 C°)
1/4"	HP4	0.094 (2.39)	0.12	30,000 psi (2,070 bar)
3/8"	HP6	0.125 (3.18)	0.23	30,000 psi (2,070 bar)
9/16"	HP9	0.187 (4.74)	1.33	30,000 psi (2,070 bar)
1"	HP16	0.438 (11.12)	2.80	30,000 psi (2,070 bar)

*Cv values listed are for 2-way straight pattern valves. For 2-way angle pattern valves, increase Cv value by 50%.

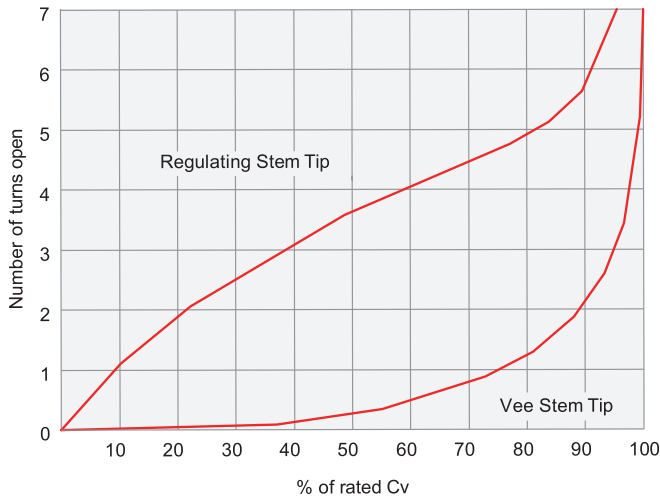
Valve Flow Coefficient

Tube O.D	Connection	Orifice, In. (mm)	*Cv	Pressure / Temperature Rating @72 F°(22 C°)
9/16"	HP9	0.109 (2.76)	0.28	40,000 psi (2,760 bar)
1/4"	HP4	0.062 (1.57)	0.08	60,000 psi (4,140 bar)
3/8"	HP6	0.062 (1.57)	0.09	60,000 psi (4,140 bar)
9/16"	HP9	0.078 (1.98)	0.14	60,000 psi (4,140 bar)

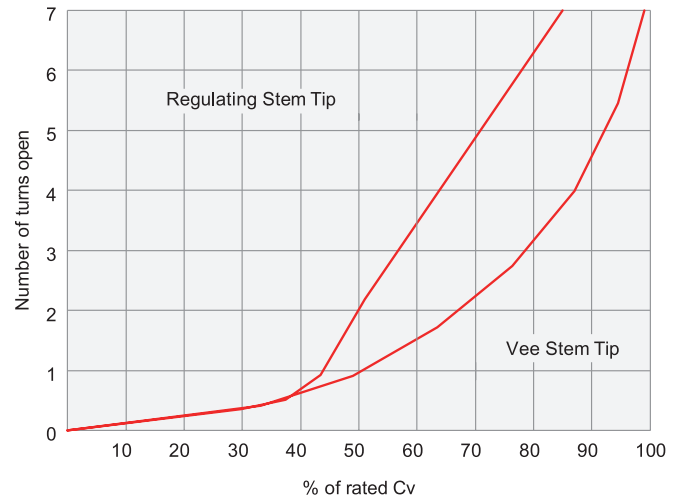
*Cv values listed are for 2-way straight pattern valves. For 2-way angle pattern valves, increase Cv value by 50%.

Technical Data

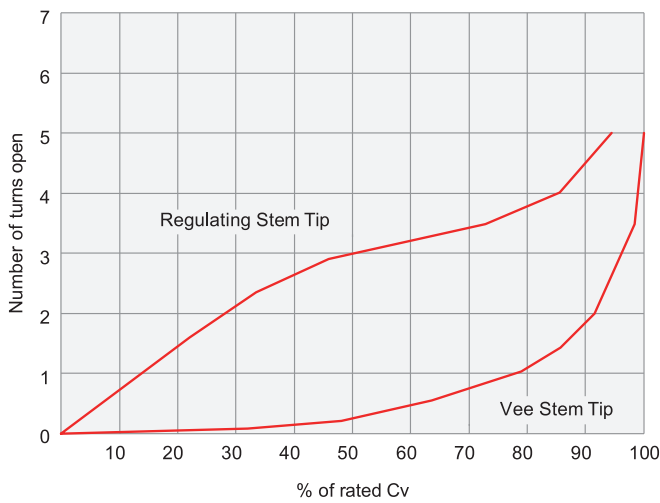
Coefficient Curves (Cv) 30,000psi - 1/4", 3/8", 9/16"



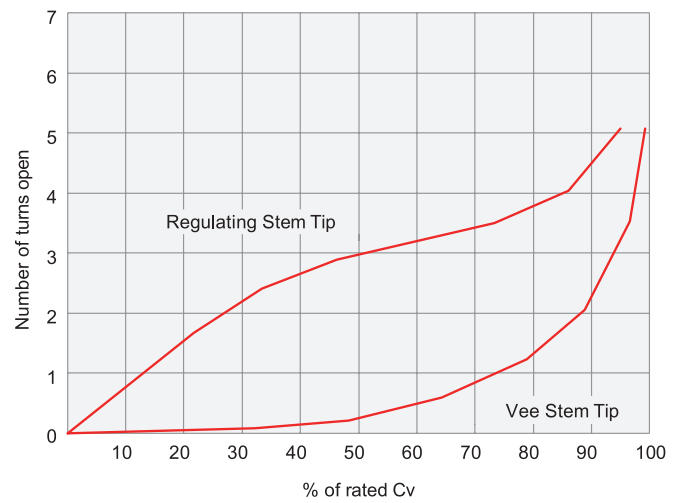
Coefficient Curves (Cv) 30,000psi - 1"



Coefficient Curves (Cv) 40,000psi - 9/16"



Coefficient Curves (Cv) 60,000psi - 1/4", 3/8", 9/16"



Ordering Information

Example :	SHNV30		-	1V		-	HP4		-	GR		-	625	
	1			2 3			4			5			6	

- 316 stainless steel is standard body material.

1. Valve Series

- SHNV30** = 30,000 psi valve
- SHNV40** = 40,000 psi valve
- SHNV60** = 60,000 psi valve

2. Body Pattern

- 1** = 2-way straight
- 2** = 2-way angle
- 3** = 3-way, two pressure connections
- 4** = 3-way, one pressure connection
- 5** = 3-way, two stem connection valve
- 6** = Replaceable seat valve

3. Stem Type

- V** = Vee stem
- R** = Regulating stem

4. Connection Size & Type

Size (inch)	1/4	3/8	9/16	1
High Pressure	HP4	HP6	HP9	HP16

5. Packing Material

- (Blank)** = PTFE (Standard)
- GR** = Grafoil

6. Body Material

- (Blank)** = 316 Stainless Steel
- 276** = Hastelloy
- 625** = Inconel 625

Table of Dimensions



Two Way Straight Valves

Part No.	Tube OD, in.(mm)	Orifice, in.(mm)	Dimensions, in. (mm)								Thickness, in.(mm)
			D	E	F	G	H	J	K	L	
SHNV30-1V-HP4	1/4 (6.35)	0.094 (2.39)	4.62 (117.35)	2.00 (50.80)	0.50 (12.70)	0.88 (22.35)	2.00 (50.80)	0.38 (9.65)	1.38 (35.05)	0.22 (5.59)	1.00 (25.40)
SHNV30-1V-HP6	3/8 (9.53)	0.125 (3.18)	4.68 (118.87)	2.00 (50.80)	0.50 (12.70)	0.88 (22.35)	2.00 (50.80)	0.38 (9.65)	1.38 (35.05)	0.22 (5.59)	1.00 (25.40)
SHNV30-1V-HP9	9/16 (14.29)	0.187 (4.74)	5.06 (128.52)	2.62 (66.55)	0.88 (22.35)	1.32 (33.52)	2.44 (61.98)	0.38 (9.65)	1.38 (35.05)	0.28 (7.11)	1.50 (38.10)
SHNV30-1V-HP16	1 (25.4)	0.438 (11.13)	8.42 (213.86)	4.13 (104.90)	0.94 (23.87)	1.69 (42.92)	4.44 (112.77)	1.12 (28.44)	2.50 (63.50)	0.56 (14.22)	1.75 (44.45)
SHNV40-1V-HP9	9/16 (14.29)	0.109 (2.76)	5.06 (128.52)	2.62 (66.55)	0.75 (19.05)	1.19 (30.22)	2.50 (63.50)	0.38 (9.65)	1.38 (35.05)	0.28 (7.11)	1.50 (38.10)
SHNV60-1V-HP4	1/4 (6.35)	0.062 (1.57)	4.75 (120.65)	2.00 (50.80)	0.43 (10.92)	0.81 (20.57)	2.12 (53.85)	0.38 (9.65)	1.38 (35.05)	0.22 (5.59)	1.00 (25.40)
SHNV60-1V-HP6	3/8 (9.53)	0.062 (1.57)	4.87 (123.70)	2.00 (50.80)	0.56 (14.22)	0.94 (23.87)	2.25 (57.15)	0.38 (9.65)	1.38 (35.05)	0.22 (5.59)	1.00 (25.40)
SHNV60-1V-HP9	9/16 (14.29)	0.078 (1.98)	5.13 (130.30)	2.62 (66.55)	0.75 (19.05)	1.19 (30.22)	2.50 (63.50)	0.38 (9.65)	1.38 (35.05)	0.28 (7.11)	1.50 (38.10)

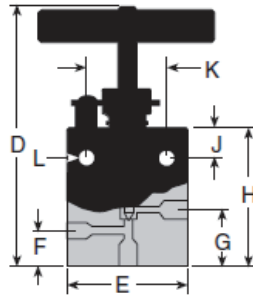
Two Way Angle Valves

Part No.	Tube OD, in.(mm)	Orifice, in.(mm)	Dimensions, in. (mm)							Thickness, in.(mm)
			D	E	G	H	J	K	L	
SHNV30-2V-HP4	1/4 (6.35)	0.094 (2.39)	4.62 (117.35)	2.00 (50.80)	0.88 (22.35)	2.00 (50.80)	0.38 (9.65)	1.38 (35.05)	0.22 (5.59)	1.00 (25.40)
SHNV30-2V-HP6	3/8 (9.53)	0.125 (3.18)	4.74 (120.40)	2.00 (50.80)	1.00 (25.40)	2.12 (53.85)	0.38 (9.65)	1.38 (35.05)	0.22 (5.59)	1.00 (25.40)
SHNV30-2V-HP9	9/16 (14.29)	0.187 (4.74)	5.06 (128.52)	2.62 (66.55)	1.32 (33.52)	2.44 (61.98)	0.38 (9.65)	1.38 (35.05)	0.28 (7.11)	1.50 (38.10)
SHNV30-2V-HP16	1 (25.4)	0.438 (11.13)	9.35 (237.49)	4.13 (104.90)	2.37 (60.20)	5.12 (130.04)	1.12 (28.44)	2.50 (63.50)	0.56 (14.22)	1.75 (44.45)
SHNV40-2V-HP9	9/16 (14.29)	0.109 (2.76)	5.37 (136.40)	2.62 (66.55)	1.50 (38.10)	2.81 (71.37)	0.38 (9.65)	1.38 (35.05)	0.28 (7.11)	1.50 (38.10)
SHNV60-2V-HP4	1/4 (6.35)	0.062 (1.57)	5.00 (127.00)	2.00 (50.80)	1.07 (27.17)	2.38 (60.45)	0.38 (9.65)	1.38 (35.05)	0.22 (5.59)	1.00 (25.40)
SHNV60-2V-HP6	3/8 (9.53)	0.062 (1.57)	5.25 (133.35)	2.00 (50.80)	1.31 (33.27)	2.62 (66.55)	0.38 (9.65)	1.38 (35.05)	0.22 (5.59)	1.00 (25.40)
SHNV60-2V-HP9	9/16 (14.29)	0.078 (1.98)	5.44 (138.18)	2.62 (66.55)	1.50 (38.10)	2.81 (71.37)	0.38 (9.65)	1.38 (35.05)	0.28 (7.11)	1.50 (38.10)

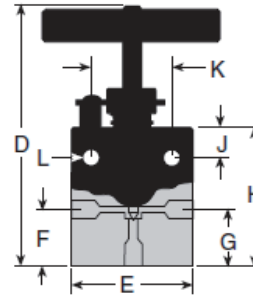
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Table of Dimensions

Three Way Valves / Two Pressure Connections



Three Way Valves / One Pressure Connection



Three Way Valves / Two Pressure Connections

Part No.	Tube OD, in.(mm)	Orifice, in.(mm)	Dimensions, in.(mm)								Thickness, in.(mm)
			D	E	F	G	H	J	K	L	
SHNV30-3V-HP4	1/4 (6.35)	0.094 (2.39)	4.74 (120.40)	2.00 (50.80)	0.62 (15.74)	1.00 (25.40)	2.12 (53.85)	0.38 (9.65)	1.38 (35.05)	0.22 (5.59)	1.00 (25.40)
SHNV30-3V-HP6	3/8 (9.53)	0.125 (3.18)	5.12 (130.05)	2.00 (50.80)	1.00 (25.40)	1.38 (35.05)	2.50 (63.50)	0.38 (9.65)	1.38 (35.05)	0.22 (5.59)	1.00 (25.40)
SHNV30-3V-HP9	9/16 (14.29)	0.187 (4.74)	5.49 (139.45)	2.62 (66.55)	1.32 (33.52)	1.76 (44.70)	2.88 (73.15)	0.38 (9.65)	1.38 (35.05)	0.28 (7.11)	1.50 (38.10)
SHNV30-3V-HP16	1 (25.4)	0.438 (11.13)	9.71 (246.63)	4.13 (104.90)	2.38 (60.45)	2.81 (71.37)	5.56 (141.22)	1.12 (28.44)	2.50 (63.50)	0.56 (14.22)	1.75 (44.45)
SHNV40-3V-HP9	9/16 (14.29)	0.109 (2.76)	6.06 (153.92)	2.62 (66.55)	1.43 (36.32)	1.88 (47.75)	3.31 (84.07)	0.38 (9.65)	1.38 (35.05)	0.28 (7.11)	1.50 (38.10)
SHNV60-3V-HP4	1/4 (6.35)	0.062 (1.57)	4.74 (120.40)	2.00 (50.80)	0.65 (17.52)	1.07 (27.17)	2.38 (60.45)	0.38 (9.65)	1.38 (35.05)	0.22 (5.59)	1.00 (25.40)
SHNV60-3V-HP6	3/8 (9.53)	0.062 (1.57)	4.87 (123.70)	2.00 (50.80)	1.06 (26.92)	1.44 (36.57)	2.75 (69.85)	0.38 (9.65)	1.38 (35.05)	0.22 (5.59)	1.00 (25.40)
SHNV60-3V-HP9	9/16 (14.29)	0.078 (1.98)	5.13 (130.30)	2.62 (66.55)	1.28 (32.51)	1.72 (43.68)	3.03 (76.96)	0.38 (9.65)	1.38 (35.05)	0.28 (7.11)	1.50 (38.10)

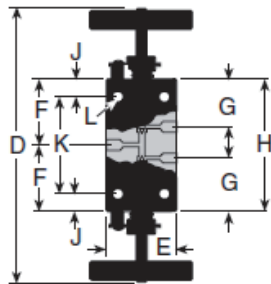
Three Way Valves / One Pressure Connection

Part No.	Tube OD, in.(mm)	Orifice, in.(mm)	Dimensions, in.(mm)								Thickness, in.(mm)
			D	E	F	G	H	J	K	L	
SHNV30-4V-HP4	1/4 (6.35)	0.094 (2.39)	4.62 (117.35)	2.00 (50.80)	0.88 (22.35)	0.88 (22.35)	2.00 (50.80)	0.38 (9.65)	1.38 (35.05)	0.22 (5.59)	1.00 (25.40)
SHNV30-4V-HP6	3/8 (9.53)	0.125 (3.18)	4.74 (120.40)	2.00 (50.80)	1.00 (25.40)	1.00 (25.40)	2.12 (53.85)	0.38 (9.65)	1.38 (35.05)	0.22 (5.59)	1.00 (25.40)
SHNV30-4V-HP9	9/16 (14.29)	0.187 (4.74)	5.12 (130.05)	2.62 (66.55)	1.32 (33.52)	1.32 (33.52)	2.44 (61.98)	0.38 (9.65)	1.38 (35.05)	0.28 (7.11)	1.50 (38.10)
SHNV30-4V-HP16	1 (25.4)	0.438 (11.13)	9.35 (237.49)	4.13 (104.90)	2.37 (60.20)	2.37 (60.20)	5.12 (130.04)	1.12 (28.44)	2.50 (63.50)	0.56 (14.22)	1.75 (44.45)
SHNV40-4V-HP9	9/16 (14.29)	0.109 (2.76)	5.37 (136.40)	2.62 (66.55)	1.50 (38.10)	1.50 (38.10)	2.81 (71.37)	0.38 (9.65)	1.38 (35.05)	0.28 (7.11)	1.50 (38.10)
SHNV60-4V-HP4	1/4 (6.35)	0.062 (1.57)	5.00 (127.00)	2.00 (50.80)	1.07 (27.17)	1.07 (27.17)	2.38 (60.45)	0.38 (9.65)	1.38 (35.05)	0.22 (5.59)	1.00 (25.40)
SHNV60-4V-HP6	3/8 (9.53)	0.062 (1.57)	5.25 (133.35)	2.00 (50.80)	1.31 (33.27)	1.31 (33.27)	2.62 (66.55)	0.38 (9.65)	1.38 (35.05)	0.22 (5.59)	1.00 (25.40)
SHNV60-4V-HP9	9/16 (14.29)	0.078 (1.98)	5.44 (138.18)	2.62 (66.55)	1.50 (38.10)	1.50 (38.10)	2.81 (71.37)	0.38 (9.65)	1.38 (35.05)	0.28 (7.11)	1.50 (38.10)

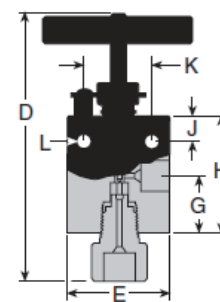
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Table of Dimensions

Three Way / Two Stem Connection Valves



Replaceable Seat Valves



Three Way / Two Stem Connection Valves

Part No.	Tube OD, in.(mm)	Orifice, in.(mm)	Dimensions, in.(mm)								Thickness, in.(mm)
			D	E	F	G	H	J	K	L	
SHNV30-5V-HP4	1/4 (6.35)	0.094 (2.39)	5.68 (144.27)	2.00 (50.80)	1.53 (38.86)	1.12 (28.45)	3.06 (77.72)	0.38 (9.65)	2.30 (58.42)	0.22 (5.59)	1.00 (25.40)
SHNV30-5V-HP6	3/8 (9.53)	0.125 (3.18)	5.87 (149.10)	2.00 (50.80)	1.62 (41.27)	1.12 (28.45)	3.25 (82.55)	0.38 (9.65)	2.49 (63.24)	0.22 (5.59)	1.00 (25.40)
SHNV30-5V-HP9	9/16 (14.29)	0.187 (4.74)	6.37 (161.80)	2.62 (66.55)	1.87 (47.62)	1.12 (28.45)	3.75 (95.25)	0.38 (9.65)	2.99 (75.94)	0.28 (7.11)	1.50 (38.10)
SHNV30-5V-HP16	1 (25.4)	0.438 (11.13)	11.81 (299.97)	4.13 (104.90)	3.87 (98.42)	2.75 (69.85)	7.75 (196.85)	1.12 (28.44)	5.51 (139.95)	0.56 (14.22)	1.75 (44.45)
SHNV40-5V-HP9	9/16 (14.29)	0.109 (2.76)	9.12 (231.65)	2.62 (66.55)	2.06 (52.32)	1.31 (33.27)	4.12 (104.65)	0.38 (9.65)	3.36 (85.34)	0.28 (7.11)	1.50 (38.10)
SHNV60-5V-HP4	1/4 (6.35)	0.062 (1.57)	6.07 (154.18)	2.00 (50.80)	1.72 (43.68)	1.31 (33.27)	3.44 (87.38)	0.38 (9.65)	2.68 (68.07)	0.22 (5.59)	1.00 (25.40)
SHNV60-5V-HP6	3/8 (9.53)	0.062 (1.57)	6.37 (161.80)	2.00 (50.80)	1.87 (47.62)	1.31 (33.27)	3.75 (95.25)	0.38 (9.65)	2.99 (75.94)	0.22 (5.59)	1.00 (25.40)
SHNV60-5V-HP9	9/16 (14.29)	0.078 (1.98)	6.37 (161.80)	2.62 (66.55)	2.06 (52.32)	1.31 (33.27)	4.12 (104.65)	0.38 (9.65)	3.36 (85.34)	0.28 (7.11)	1.50 (38.10)

Replaceable Seat Valves

Part No.	Tube OD, in.(mm)	Orifice, in.(mm)	Dimensions, in.(mm)							Thickness, in.(mm)
			D	E	G	H	J	K	L	
SHNV30-6V-HP4	1/4 (6.35)	0.094 (2.39)	5.80 (147.32)	2.00 (50.80)	1.26 (32.00)	2.38 (60.45)	0.38 (9.65)	1.38 (35.05)	0.22 (5.59)	1.00 (25.40)
SHNV30-6V-HP6	3/8 (9.53)	0.125 (3.18)	6.05 (153.67)	2.00 (50.80)	1.26 (32.00)	2.38 (60.45)	0.38 (9.65)	1.38 (35.05)	0.22 (5.59)	1.00 (25.40)
SHNV30-6V-HP9	9/16 (14.29)	0.187 (4.74)	6.45 (163.83)	2.62 (66.55)	1.25 (31.75)	2.44 (61.98)	0.38 (9.65)	1.38 (35.05)	0.28 (7.11)	1.50 (38.10)
SHNV30-6V-HP16	1 (25.4)	0.438 (11.13)	10.56 (268.22)	4.13 (104.90)	2.31 (58.67)	5.12 (130.04)	1.12 (28.44)	2.50 (63.50)	0.56 (14.22)	1.75 (44.45)
SHNV40-6V-HP9	9/16 (14.29)	0.109 (2.76)	6.45 (163.83)	2.62 (66.55)	1.25 (31.75)	2.44 (61.98)	0.38 (9.65)	1.38 (35.05)	0.28 (7.11)	1.50 (38.10)
SHNV60-6V-HP4	1/4 (6.35)	0.062 (1.57)	6.28 (159.51)	2.00 (50.80)	1.31 (33.27)	2.62 (66.55)	0.38 (9.65)	1.38 (35.05)	0.22 (5.59)	1.00 (25.40)
SHNV60-6V-HP6	3/8 (9.53)	0.062 (1.57)	6.52 (165.60)	2.00 (50.80)	1.31 (33.27)	2.62 (66.55)	0.38 (9.65)	1.38 (35.05)	0.22 (5.59)	1.00 (25.40)
SHNV60-6V-HP9	9/16 (14.29)	0.078 (1.98)	6.90 (175.26)	2.62 (66.55)	1.31 (33.27)	2.62 (66.55)	0.38 (9.65)	1.38 (35.05)	0.28 (7.11)	1.50 (38.10)

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