

# MIL 35500 - V Notch Segmental Ball Control Valve

- Excellent flow control
- High capacity & rangeability
- Smooth valve operation
- Low and high temperature capability
- Excellent shearing action in fibrous fluid mediums



## Applications

- Paper & Pulp Industry
- Chemical & Fertilizer Industries
- Sewage treatment plants
- Petroleum refineries
- Clean / dirty corrosive liquids & gases, erosive and abrasive slurries

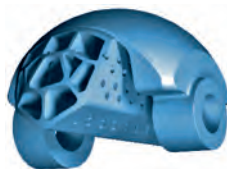
More information: [www.ksb-mil.com](http://www.ksb-mil.com)



With Scotch Yoke Spring Return Actuator



With Diaphragm Actuator



Anti-cavitation / Low noise V-Notch Segmental Ball Valve trim

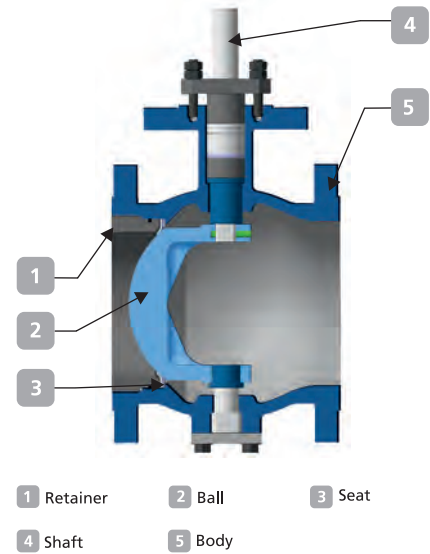
Your contact:

Form area for contact information, consisting of a large empty rectangular box with corner brackets.

# MIL 35500 - V Notch Segmental Ball Control Valve

MIL 35000 V-Notched segmental ball valves are designed for on/off and throttling applications. These valves have an unrestricted straight through flow design, and provide high capacity for gas, steam, fibrous slurries, or liquids. This Series is designed with a splined shaft valve body that matches with a variety of actuators to form a dependable high performance control valve ideal for many applications in various processing industries. These valves are designed to overcome the problems of harsh, particle entrained processes, and they also provide accurate, reliable control in a

broad range of applications, such as chemical, power and petroleum. They are available in sizes 2 inch to 24 inches, ANSI Classes 150, 300, 600, 900, 1500 and 2500 and in stainless steel, carbon steel and other alloys.



## Model Decodification

1 <sup>st</sup> -	2 <sup>nd</sup> -	3 <sup>rd</sup> 3	4 <sup>th</sup> 5	5 <sup>th</sup> 5	6 <sup>th</sup> -	7 <sup>th</sup> -
Actuator Type		Body Series		Design Variant	Body Type	Seat Type
20. Hand operated 37. Spring diaphragm for fail close and open 67. Direct piston cylinder 68. Reverse piston cylinder 75. Rack and Pinion Double Acting 76. Rack and Pinion Spring Return 85. Scotch Yoke Double Acting 86. Scotch Yoke Spring Return 90. Electrical actuator 95. Link actuator, double acting 96. Link actuator, spring return		35. Ball Valve		5. V Notch Segmental Ball Control Valve	0. Undefined 1. Single Piece, Side Entry	0. Undefined 1. Soft seated 2. PMSS* 3. PSSM** 4. Metal

\*Primary Metal Secondary Soft as special seat

\*\*Primary Soft Secondary Metal as Fire safe seat

## General Data

### Materials

Body	WCB carbon steel / 316 stainless steel (SS)
Ball	Stainless Steel, Nickel-plated, Stellite & Specials on request
Stem	Hardened 17-4 PH, Stainless steel
Seat	Stainless Steel / PTFE
Gland / Gland Flange	Stainless Steel

### Actuator Options

Diaphragm Actuators
Single / Double acting Rack & Pinion Actuators
Electrical Actuators
Hydraulic Actuators
Single / Double Acting Scotch Yoke Actuators
Single / Double Acting Link Actuators

### Note

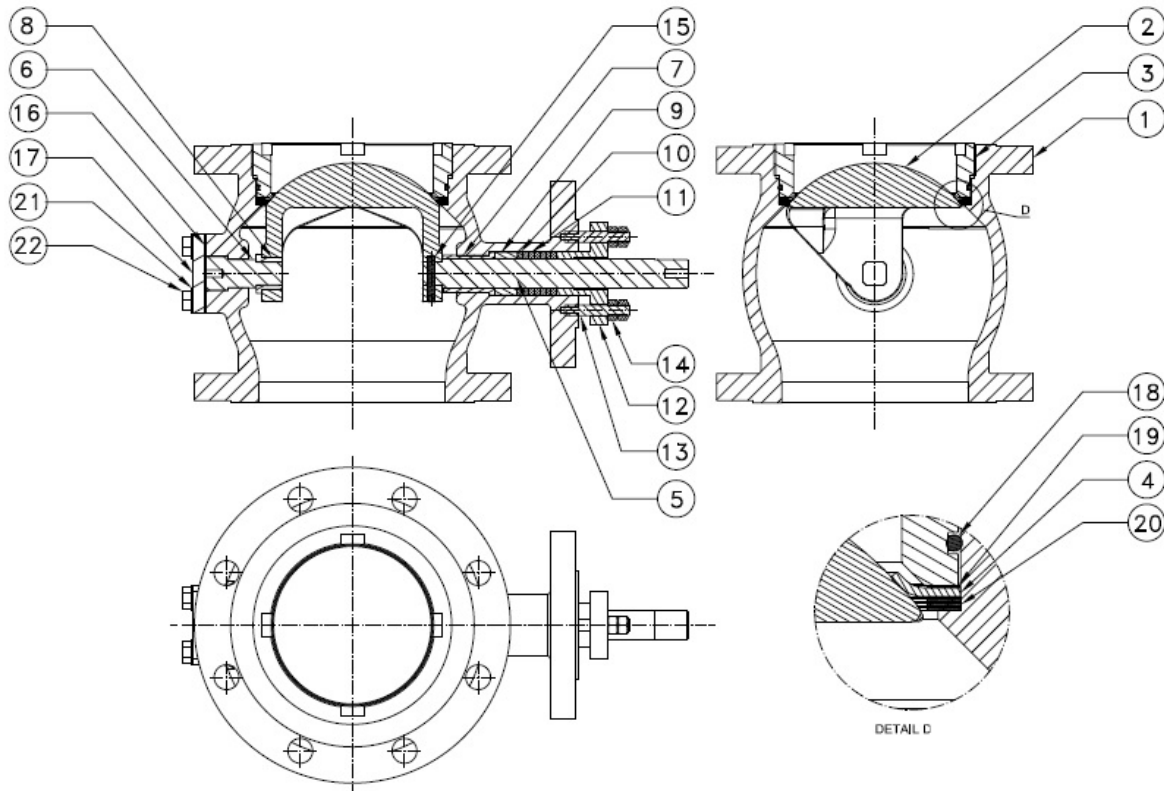
Additional accessories or Instruments like Solenoid Valve, Limit Switches, Air Filter Regulator & Positioner (Pneumatic / Electro-Pneumatic / Smart) can be supplied along with valve depending upon the requirement.

## Technical Data

Size	1" to 24" (DN 25 to 600)
Pressure class	ASME 150# to 1500#
Temperature	-196°C to 550°C
End Connection	Wafer, Flanged & RTJ
Leakage class	Class IV (Metal seal) Class VI (PTFE seal) as per FCI 70.2
Flow Direction	FTO - Normal flow is into the convex side of the valve  FTC - Reverse flow with Anti-cavitation / Low noise trim
Flow Characteristics	Modified Equal % (Inherent)
Angle of Rotation	90 Degrees
Inherent Rangeability	300:1
Disc Orientation	Clockwise - Close Anticlockwise - Open
Design Standard	ASME B16.34, B16.5

# MIL 35500 V Notch Segmental Ball Control Valves

## Cross Section and Material of Construction (Design A)



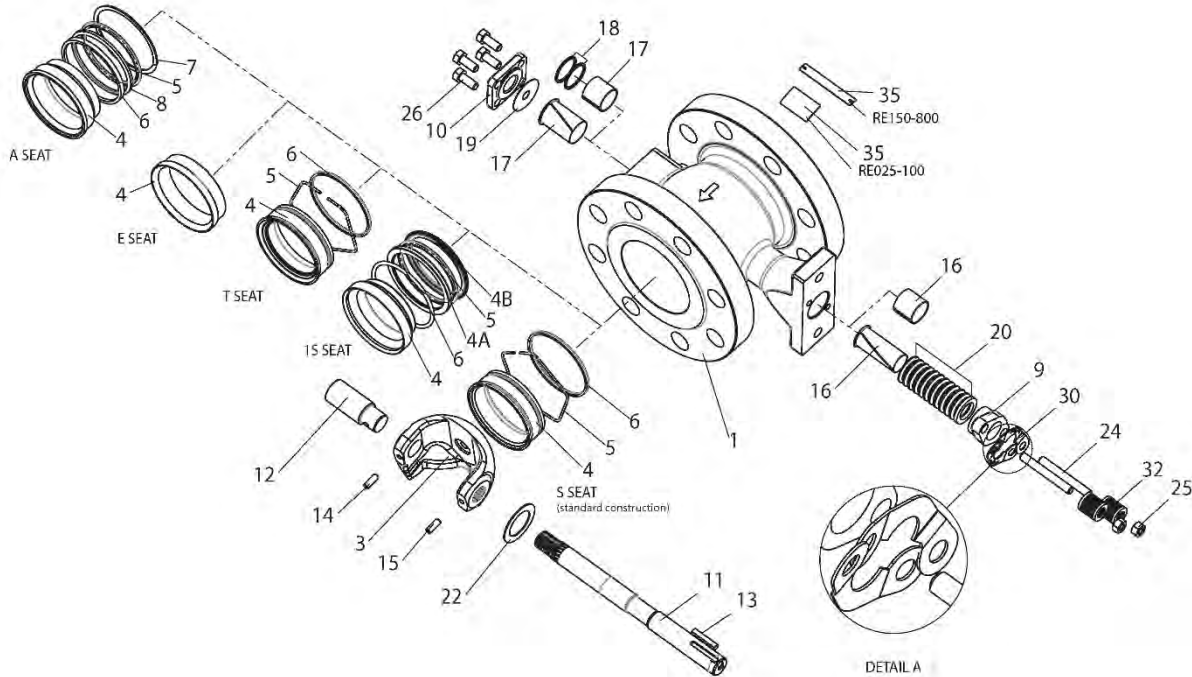
Sr.No	Part Name	Material
1	Valve Body	ASTM A 216 Gr.WCB / ASTM A 351 Gr.CF8M/CF3M etc (Others on request)
2	Ball	ASTM A 351 Gr.CF8M/CF3M + Chrome Plated
3	Seat Retainer	SS316 / SS 316L
4	Metal Seal	SS 316+Stellite, Inconel 625,17-4 PH depending upon requirement
5	Shaft 1	SS316 / 17-4 PH etc (Others on request)
6	Shaft 2	SS316 / 17-4 PH etc (Others on request)
7	Bearing Bush 1	SS316+PTFE / SS316+Stellite (Others on request)
8	Bearing Bush 2	SS316+PTFE / SS316+Stellite (Others on request)
9	Packing Spacer	SS316
10	Packing Washer	SS316
11	Packing Set	Chevron PTFE / Graphite / Braided Graphite etc
12	Gland Flange	SS 316 / CF8M
13	Gland Stud	SS 316
14	Gland Nut	SS 316
15	Shaft Pin	17-4 PH / SS 420
16	End Cover Gasket	Graphite
17	End Cover Plate	ASTM A 105 / SS 316
18	O-Ring	Nitrile / Viton
19	Seat Gasket	SS316L + Graphite / SS 316+Graphite
20	Metal Shims	SS 316
21	Spring Washer	SS 316
22	Hex Bolt	SS 316

\*\*\* Others special grade castings or trim material available on request



# MIL 35500 – V Notch Segmental Ball Control Valve

## Cross section and Material of Construction (Design B)



Part	Name	BODY MATERIAL	
		Stainless steel	Carbon steel
1	Body	ASTM A351 gr. CF8M	ASTM A216 gr. WCB
3	V-port segment	AISI 329 + chromium / CG8M + chromium <sup>1)</sup>	AISI 329 + chromium / CG8M + chromium <sup>1)</sup>
4	Seat	AISI 316 + Cobalt based alloy / PTFE <sup>1)</sup>	AISI 316 + Cobalt based alloy / PTFE <sup>1)</sup>
4A	Back ring	AISI 316	AISI 316
4B	Support ring	AISI 316	AISI 316
5	Lock spring	INCONEL 625	INCONEL 625
6	Back seal	Stainless steel + PTFE / Viton GF / Graphite	Stainless steel + PTFE / Viton GF / Graphite
7	Retaining ring	EN 10028-1.4571	EN 10028-1.4571
8	Support ring	AISI 316	AISI 316
9	Gland follower	ASTM A351 gr. CF8M	ASTM A351 gr. CF8M
10	Blind flange	ASTM A351 gr. CF8M	ASTM A351 gr. CF8M
11	Drive shaft	AISI 329 / 17-4PH <sup>1)</sup>	AISI 329 / 17-4PH <sup>1)</sup>
12	Shaft	AISI 329 / 17-4PH <sup>1)</sup>	AISI 329 / 17-4PH <sup>1)</sup>
13	Key	AISI 329	AISI 329
14	Cylindrical pin	AISI 329 / 17-4PH <sup>1)</sup>	AISI 329 / 17-4PH <sup>1)</sup>
15	Cylindrical pin	AISI 329 / 17-4PH <sup>1)</sup>	AISI 329 / 17-4PH <sup>1)</sup>
16	Bearing	PTFE + SS net / cobalt based alloy <sup>1)</sup>	PTFE + SS net / cobalt based alloy <sup>1)</sup>
17	Bearing	PTFE + SS net / cobalt based alloy <sup>1)</sup>	PTFE + SS net / cobalt based alloy <sup>1)</sup>
18	Thrust bearing	Cobalt based alloy <sup>1)</sup>	Cobalt based alloy <sup>1)</sup>
19	Sealing plate	Graphite / PTFE	Graphite / PTFE
20	Packing	Graphite / PTFE	Graphite / PTFE
22	Filling ring (only low Cv 1"/DN 25)	Stainless Steel AISI 316	Stainless Steel AISI 316
24	Stud	ISO 3506 A4-80/B8M	ISO 3506 A4-80/B8M
25	Hexagon nut	ISO 3506 A4-80/B8M	ISO 3506 A4-80/B8M
26	Hexagon bolt	ISO 3506 A4-80/B8M	ISO 3506 A4-80/B8M
30	Retainer plate	AISI 316	AISI 316
32	Spring stack	SIS 2324 & CrMo Steel + ENP	SIS 2324 & CrMo Steel + ENP
35	Identification plate	AISI 316	AISI 316

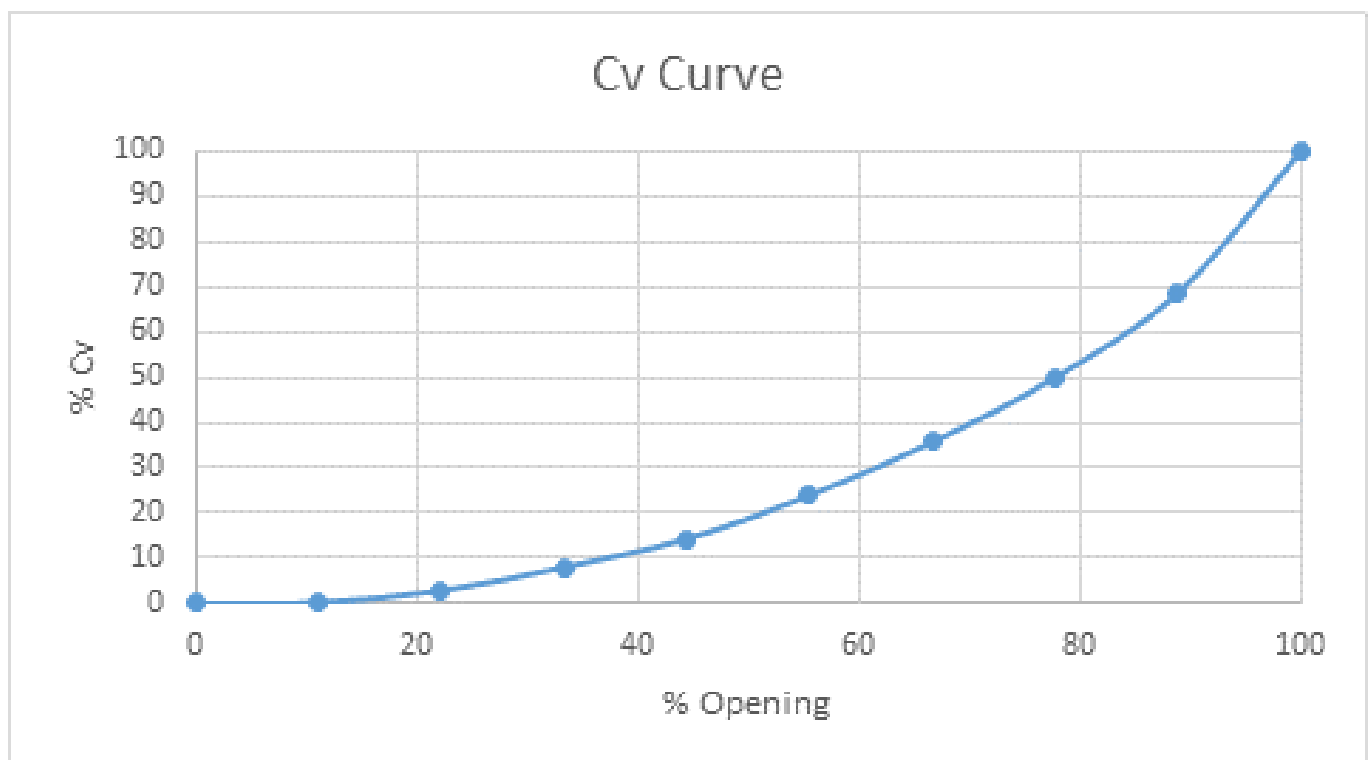
# MIL 35500 – V Notch Segmental Ball Control Valves

## Flow Data

Cv Values for 33500				
SI No.	Valve Size (inch)	Cv		
		Class 150	Class 300	Class 600
1	1	31.5	31.5	**
2	1.5	103	103	**
3	2	163	163	**
4	3	321	321	**
5	4	565	565	**
6	6	1180	1180	**
7	8	1980	1980	**
8	10	3360	3360	**
9	12	4910	4910	**
10	14	**	**	**
11	16	**	**	**
12	18	**	**	-
13	20	**	**	-
14	22	**	**	-
15	24	**	**	-

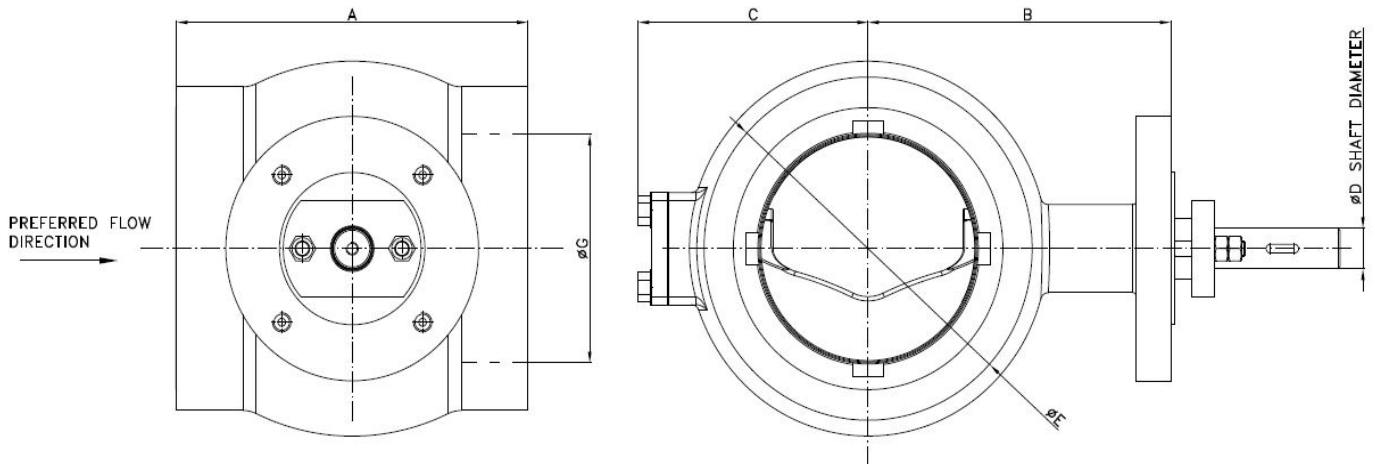
\*\* Consult KSB MIL

## Cv Curve



# MIL 35500 V Notch Segmental Ball Control Valves

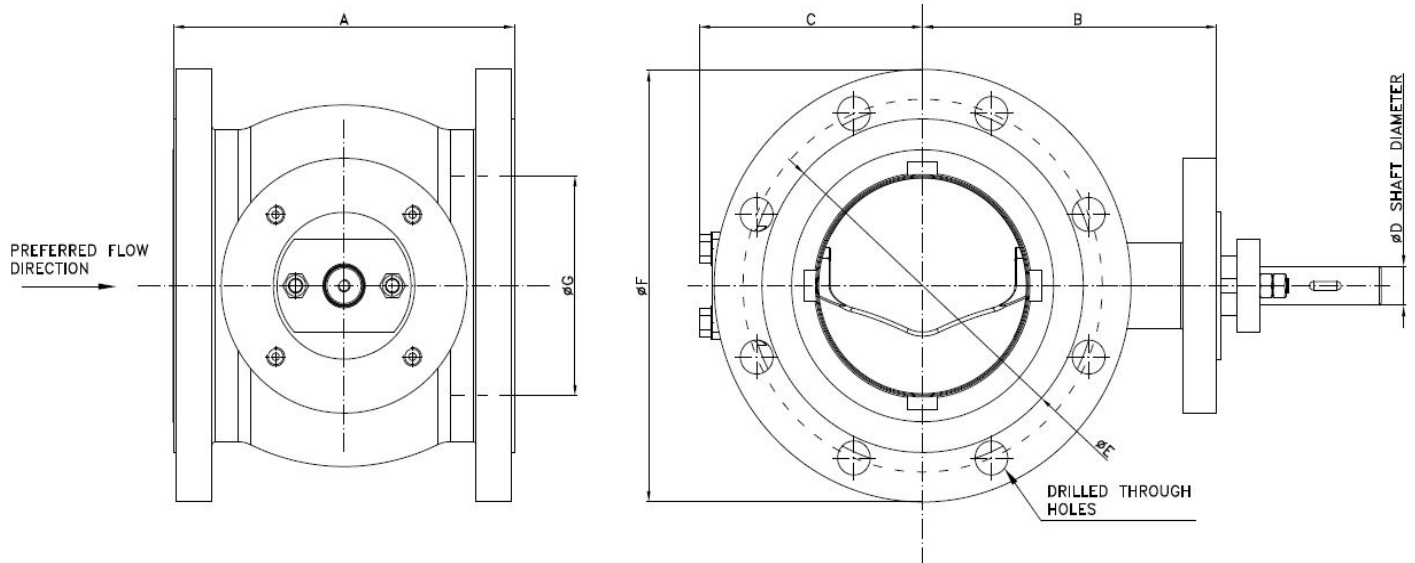
## Dimensional Data - ANSI 150#-600# Wafer type V-Notch Ball Valve



VALVE SIZE		DIMENSIONS					
in	mm	A	B	C	ΦD	ΦE	ΦG
1	25	102	93.5	52	5/8"	50.8	37
1.5	40	114	128	69	5/8"	73	55
2	50	124	128	79	5/8"	92.1	65
3	80	165	148	98	3/4"	127	92
4	100	194	173	115	3/4"	157.2	126
6	150	229	198	150	1"	215.9	165
8	200	243	235	200	1 1/4"	269.9	215
10	250	297	275	250	1 1/2"	323.8	265
12	300	338	300	270	1 1/2"	381	320

# MIL 35500 V Notch Segmental Ball Control Valves

## Dimensional Data - ANSI 150#-600# Flanged type V-Notch Ball Valve



VALVE SIZE		DIMENSIONS								
in	mm	A	B	C	ΦD	ΦE	ΦF			ΦG
							150#	300#	600#	
1	25	102	93.5	52	5/8"	50.8	110	125	125	37
1.5	40	114	128	69	5/8"	73	125	155	155	55
2	50	124	128	79	5/8"	92.1	150	165	165	65
3	80	165	148	98	3/4"	127	190	210	210	92
4	100	194	173	115	3/4"	157.2	230	255	275	126
6	150	229	198	150	1"	215.9	280	320	355	165
8	200	243	235	200	1 1/4"	269.9	345	380	420	215
10	250	297	275	250	1 1/2"	323.8	405	445	510	265
12	300	338	300	270	1 1/2"	381	485	520	560	320



Technology that **makes its mark**

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