MACHINING

NPT, 3 Flute

33ZL63

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슎 CLE-LINE.

CLEVELAND

Interrupted-Thread Pipe and Conduit Thread Taps WIDIA GTD

Right-hand thread direction

Taps have an interrupted thread pattern in which every other tooth has been removed from the cutting edge. They offer more space for chip evacuation than taps with a standard thread pattern, which allows large chips to be cleared from the taps during threading tasks.

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Thread Size	Thread Length	Overall Length	Tap Chamfer	Brand	item No.	Thread Size	Thread Length	Overall Length	Tap Chamfer	Brand	ltem No.
NPT. 3 Flutes	Lengin	Lengin	Tap Gildiller	Diallu	NU.	3/4"-14	1 3/8 in	3 % in	Semi-Bottoming	Cle-Line	50AP69
1/8"-27	3⁄4 in	2 7/64 in	Modified Bottom, Semi-Bottoming	OSG	33ZL63	1"-11 ½	1 3/4 in	3 3/4 in	Modified Bottom, Semi-Bottoming	OSG	33ZM32
1/8"-27	3/4 in	2 7/64 in	Modified Bottom, Semi-Bottoming	ÖSG	33ZL64	1"-11 1/2	1 3/4 in	3 3/4 in	Modified Bottom, Semi-Bottoming	ÖSG	2WCD3
1⁄4"-18	1 3⁄64 in	2 7/16 in	Modified Bottom, Semi-Bottoming	OSG	33ZL65	1"-11 1/2	1 3⁄4 in	3 3/4 in	Modified Bottom, Semi-Bottoming	OSG	2WCD5
NPT, 4 Flutes						1" -11 1/2	1 3⁄4 in	3 ¾ in	Plug	Widia GTD	4CPN2
3⁄4 *-14	1 ¾ in	3 1⁄8 in	Plug	Widia GTD	4CPL9	1"-11 1/2	1 ¾ in	3 ¾ in	Semi-Bottoming	Greenfield	15K052
NPT, 5 Flutes	04.1	0.7()		000	011/050					Threading	
1⁄8"-27 1⁄8"-27	3/4 in 3/4 in	2 7/64 in 2 7/64 in	Modified Bottom, Semi-Bottoming Modified Bottom, Semi-Bottoming	OSG OSG	2WCE2 2WCD8	1"-11 ½ 1¼"-11 ½	1 ³ ⁄4 in 1 ³ ⁄4 in	3 ¾ in	Semi-Bottoming Modified Bottom, Semi-Bottoming	Cleveland OSG	435W84 4CYJ2
1/8"-27	3/4 in	2 7/64 III 2 7/64 in	Modified Bottom, Semi-Bottoming	OSG	33ZM31	11/4"-11 1/2	1 3/4 in	4 in 4 in	Plua	Widia GTD	401J2
1/8"-27	3/4 in	2 7/64 in	Modified Bottom, Semi-Bottoming	OSG	4CYH8	11/4"-11 1/2	1 ³ / ₄ in	4 in	Semi-Bottoming	Cle-Line	50AP63
1/8=-27	3/4 in	2 7/64 in	Modified Bottom, Semi-Bottoming	OSG	2WCD7	NPT. 7 Flutes		7 111	Ocini Dottonning	OIC LINC	00/11/00
1/8"-27	3/4 in	2 1/8 in	Plug	Widia GTD	4CPK9	11/2"-11 1/2	1 ¾ in	4 ¼ in	Modified Bottom, Semi-Bottoming	OSG	4CYJ4
1/8"-27	3⁄4 in	2 1/8 in	Plug	Widia GTD	4CPK8	11/2"-11 1/2	3 in	4 ¼ in	Plug	Widia GTD	4CPN5
1⁄8"-27	3⁄4 in	2 1/8 in	Plug	Widia GTD	53MJ24	2"-11 1/2	1 ¾ in	4 ½ in	Modified Bottom, Semi-Bottoming	OSG	4CYJ6
1/8"-27	3⁄4 in	2 1/8 in	Semi-Bottoming	Greenfield	15K047	NPTF, 3 Flute		0.3/			
1/8"-27		2 1/8 in	•	Threading	435W79	1/4"-18 NPTF. 4 Flute	1 3⁄64 in	2 7/16 in	Modified Bottom, Semi-Bottoming	OSG	33ZL72
1/4"-18	3/4 in 1 1/16 in	2 1/8 In 2 27/64 in	Semi-Bottoming Modified Bottom, Semi-Bottoming	Cleveland OSG	435W79 2WCD9	3%"-18	s 1 ¾ in	3 1⁄8 in	Plug	Widia GTD	4CPL6
1/4=-18	1 1/16 in	2 27/64 in	Modified Bottom, Semi-Bottoming	030	2WCD9 2WCD4	1/2"-14	1 3/8 in	3 1/8 in	Plug	Widia GTD	40710
1/4=-18	1 1/16 in	2 27/64 in	Modified Bottom, Semi-Bottoming	OSG OSG	2WCE1	NPTF, 5 Flute		0 /8 111	i iug	Widia GTD	401 20
1/4"-18	1 1/16 in	2 7/16 in	Plug	Widia GTD	4CPL3	1⁄8"-27	3/4 in	2 7/64 in	Modified Bottom, Semi-Bottoming	OSG	33ZM36
1⁄4⁼-18	1 ¹ /16 in	2 1/16 in	Semi-Bottoming	Greenfield	15K048	1⁄8"-27	3⁄4 in	2 7/64 in	Modified Bottom, Semi-Bottoming	OSG	33ZM37
			•	Threading		1⁄8"-27	3⁄4 in	2 1/8 in	Plug	Widia GTD	4CPL2
1/4"-18	1 1/16 in	2 7/16 in	Semi-Bottoming	Cleveland	435W80	1⁄8"-27	3⁄4 in	2 1⁄8 in	Plug	Widia GTD	4CPL1
1/4 - 18	1 1/16 in	2 7/16 in	Semi-Bottoming	Cle-Line OSG	50AP65	1⁄8"-27	3⁄4 in	2 1/8 in	Semi-Bottoming	Greenfield	407D28
3%"-18 3%"-18	1 ³ ⁄ ₆₄ in 1 ¹ ⁄ ₁₆ in	2 35/64 in 2 35/64 in	Modified Bottom, Semi-Bottoming Modified Bottom, Semi-Bottoming	OSG	33ZL66 2WCC4				•	Threading Greenfield	
3%=18	1 1/16 in	2 35/64 in	Modified Bottom, Semi-Bottoming	OSG	2WC04	1⁄8"-27	3⁄4 in	2 1/8 in	Semi-Bottoming	Threading	15K054
3%"-18	1 ¹³ /16 in	2 %16 in	Plug	Widia GTD	53MJ21	1⁄4"-18	1 1/16 in	2 7/16 in	Plug	Widia GTD	4CPL4
3%"-18	1 1/16 in	2 %16 in	Semi-Bottoming	Greenfield	15K049	1⁄4"-18	1 1/16 in	2 7/16 in	Semi-Bottoming	Greenfield	407D29
			•	Threading		94 -10	I 916 III	Z 1/16 III	Senn-Bottonning	Threading	407029
<u>3%</u> ⁼-18	1 1/16 in	2 %16 in	Semi-Bottoming	Cleveland	435W81	1⁄4"-18	1 1⁄16 in	2 7/16 in	Semi-Bottoming	Greenfield	15K055
3/8"-18	1 3/8 in	3 1/8 in	Plug	Widia GTD	4CPL5				•	Threading	
1⁄2"-14 1⁄2"-14	1 ²³ / ₆₄ in 1 ²³ / ₆₄ in	3 7/64 in 3 7/64 in	Modified Bottom, Semi-Bottoming Modified Bottom, Semi-Bottoming	OSG OSG	2WCC5 2WCC7	3/8"-18 3/8"-18	1 3/64 in 1 1/16 in	2 35/64 in 2 35/64 in	Modified Bottom, Semi-Bottoming Modified Bottom, Semi-Bottoming	OSG OSG	33ZL73 2WCC9
1/2"-14	1 ²³ / ₆₄ in	3 7/64 in	Modified Bottom, Semi-Bottoming	OSG	2WCC6	3%"-18	1 1/16 in	2 35/64 in	Modified Bottom, Semi-Bottoming	OSG	33ZM24
1/2"-14	1 ²³ / ₆₄ in	3 7/64 in	Modified Bottom, Semi-Bottoming	OSG	33ZL67					Greenfield	
1/2"-14	1 ²¹ / ₃₂ in	3 1/8 in	Plug	Widia GTD	4CPL7	3⁄8"-18	1 1⁄16 in	2 %16 in	Semi-Bottoming	Threading	407D30
1⁄2"-14	1 ²¹ / ₃₂ in	3 1/8 in	Plug	Widia GTD	53MJ20	³ ⁄8"-18	1 ½16 in	2 %16 in	Semi-Bottoming	Greenfield	15K056
1/2"-14	1 ¾ in	3 1⁄% in	Semi-Bottoming	Greenfield	15K050	78 - 10	1 /16 111	Z 716 III	Senn-Boltonning	Threading	IJKUJU
			5	Threading		1⁄2"-14	1 3⁄8 in	3 1/8 in	Semi-Bottoming	Greenfield	407D31
1/2"-14 3/4"-14	1 3/8 in 1 ²³ /64 in	3 1⁄8 in 3 1⁄4 in	Semi-Bottoming	Cleveland	435W82 2WCD2	3⁄4"-14	1 3/8 in	3 1/4 in	Plug	Threading Widia GTD	4CPN1
<u> </u>	1 23/64 in	3 1/4 in	Modified Bottom, Semi-Bottoming Modified Bottom, Semi-Bottoming	OSG OSG	4CYJ1	3/4"-14	1 3/8 in	3 1/4 in	Semi-Bottoming	Cleveland	40PN1 435W90
3/4"-14	1 ²³ / ₆₄ in	3 1/4 in	Modified Bottom, Semi-Bottoming	OSG	2WCC8					Greenfield	
3/4"-14	1 ²³ / ₆₄ in	3 1/4 in	Modified Bottom, Semi-Bottoming	OSG	33ZL68	3⁄4"-14	1 ¾ in	3 ¼ in	Semi-Bottoming	Threading	407D32
3⁄4*-14	1 3/8 in	3 1/4 in	Plug	Widia GTD	53MJ19	1" -11 1/2	1 3⁄4 in	3 ¾ in	Plug	Widia GTD	4CPN3
3⁄4"-14	1 ¾ in	3 1⁄4 in	Semi-Bottoming	Greenfield Threading	15K051				•		
3⁄4"-14	1 ¾ in	3 ¼ in	Semi-Bottoming	Cleveland	435W83						
		0.7411	com bottoming	croronand							

Short-Projection Pipe and Conduit Thread Taps

Right-hand flute directionHigh-speed steel material

Taps have fewer tapered threads at their tip than standard pipe and conduit taps. They don't have to enter deep into the workpiece to produce full threads and are suitable for tapping shallow holes.



NPT, 5 Flute 33ZM72

Thread		Overall	Item
Size	Thread Length	Length	No.
NPT, 4 Flutes	•		
Bright Finish			
1/8"-27	3⁄4 in	2 7/64 in	33ZM48
1⁄4"-18	1 3⁄64 in	2 27/64 in	33ZM54
3⁄s"-18	1 3⁄64 in	2 35/64 in	33PD20
1⁄2"-14	1 ²³ / ₆₄ in	3 7⁄64 in	33PD21
Steam Oxide Finish			
1⁄8"-27	3⁄4 in	2 7⁄64 in	33ZM49
1⁄4"-18	1 3⁄64 in	2 27/64 in	33ZM58
1⁄4"-18	1 3⁄64 in	2 27/64 in	33ZM55
3⁄8"-18	1 3⁄64 in	2 35/64 in	33ZM60
1⁄2"-14	1 ²³ ⁄64 in	3 7⁄64 in	33ZM65
ICN Finish			
1⁄8"-27	3⁄4 in	2 7⁄64 in	33ZM50
1⁄4"-18	1 3⁄64 in	2 27/64 in	33ZM56
3⁄8"-18	1 3⁄64 in	2 35/64 in	33ZM61
1⁄2"-14	1 ²³ ⁄64 in	3 7⁄64 in	33ZM66
IPT, 5 Flutes			
Bright Finish			
3⁄4"-14	1 ²³ ⁄64 in	3 1/4 in	33ZM70
1"-11 1/2	1 3⁄4 in	3 3/4 in	33ZM76
Steam Oxide Finish			
3⁄4"-14	1 ²³ ⁄64 in	3 1/4 in	33ZM71
1"-11 1/2	1 3/4 in	3 3/4 in	33ZM77
FiCN Finish			
3/4"-14	1 ²³ ⁄64 in	3 1/4 in	33ZM72
1"-11 1/2	1 3/4 in	3 3/4 in	33ZM78

NPTF, 4 Futures Andrew and a stress Description Bright Finish 74:27 34 in 2 /64 in 332/M82 $16:27$ 34 in 2 /64 in 332/M83 $16:16$ 1 /66 in 2 /64 in 332/M84 $16:16$ 1 /66 in 2 /64 in 332/M84 $16:16$ 1 /66 in 2 /64 in 332/M84 $16:16$ 1 /66 in 2 /64 in 332/M85 $16:16$ 1 /66 in 32/M85 32/M85 $16:27$ 34 in 3 /64 in 332/M85 $16:27$ 34 in 3 /64 in 332/M85 $16:27$ 34 in 2 /64 in 332/M85 $16:27$ 34 in 2 /64 in 332/M85 $16:27$ 34 in 2 /64 in 332/M55 </th <th>Thread Size</th> <th>Thread Length</th> <th>Overall Length</th> <th>ltem No.</th>	Thread Size	Thread Length	Overall Length	ltem No.
Bright Finish 7 34 in 2 /%4 in 332/M57 %-27 34 in 2 /%4 in 332/M57 %-18 1 /%e in 2 /%4 in 332/M58 %*-18 1 /%e in 2 /%4 in 332/M58 %*-18 1 /%e in 2 /%4 in 332/M58 %*-18 1 /%e in 2 /%e in 332/M58 %*-18 1 /%e in 2 /%e in 332/M58 %*-18 1 /%e in 3 /%e in 332/M58 %*-14 1 /%e in 3 /%e in 332/M58 %*-14 1 /%e in 3 /%e in 332/M58 %*-14 1 /%e in 2 /%e in 332/M58 %*-27 %4 in 2 /%e in 332/M58 %*-14 1 /%e in 2 /%e in 332/M58 %*-14 1 /%e in 2 /%e in 332/M58		Thread Length	Longui	NO.
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Bright Finish			
$rac{1}{2}$ $rac{3}{4}$ in $2\sqrt{64}$ in $332M67$ $rac{1}{4}$ 1 $rac{1}{6}$ in 22%4 in $332M67$ $rac{1}{4}$ 1 $rac{1}{6}$ in 22%4 in $332M67$ $rac{1}{4}$ 1 $rac{1}{6}$ in 22%4 in $332M67$ $rac{1}{4}$ 1 $rac{1}{6}$ in 22%4 in $332M67$ $rac{1}{4}$ 1 $rac{1}{6}$ in 22%4 in $332M67$ $rac{3}{6}$ 1 $rac{1}{6}$ in 22%4 in $332M67$ $rac{3}{6}$ 1 $rac{1}{2\%4}$ in $32M67$ $332M67$ $rac{3}{6}$ 1 $rac{1}{2\%4}$ in $32M67$ $332M67$ $rac{1}{2\%4}$ in 3 $rac{1}{6}$ in $332M65$ $rac{1}{2\%4}$ 1 $2\%64$ in $332M65$ $rac{1}{2}$ 34 in $2\%64$ in $332M65$ $rac{1}{2}$ 34 in $2\%64$ in $332M65$ $rac{1}{2}$ 34 in $2\%64$ in $332M65$ $rac^{1}$	1/8=-27	³ ⁄4 in	2 7/64 in	33ZM51
$rac{1}{9^{k}-27}$ $rac{3}{4}$ in $2\sqrt{64}$ in $332M67$ $\sqrt{k}-18$ $1\sqrt{6}$ in 2764 in $332M86$ $\sqrt{k}-18$ $1\sqrt{6}$ in 2764 in $332M86$ $\sqrt{k}-18$ $1\sqrt{6}$ in 2764 in $332M86$ $\sqrt{k}-18$ $1\sqrt{6}$ in 2764 in $332M67$ $\sqrt{k}-14$ 1264 in 3764 in $332M67$ $\sqrt{k}-14$ 1266 in $332M67$ 3764 in $332M67$ $\sqrt{k}-14$ 1266 in $332M67$ 3764 in $332M67$ $\sqrt{k}-14$ 1266 in $322M67$ 34 in 3764 in $332M67$ $\sqrt{k}-14$ 1264 in 2764 in $332M67$ $34/4$ in 3764 in $332M66$ $\sqrt{k}-14$ 1264 in	1/8"-27	3/4 in	2 7/64 in	33ZM82
44 -18 $1 \ / 4e$ in 22744 in $332M83$ $34^{-1}8$ $1 \ / 4e$ in 22744 in $332M83$ $34^{-1}8$ $1 \ / 4e$ in 22744 in $332M83$ $34^{-1}8$ $1 \ / 4e$ in 22764 in $332M83$ $34^{-1}8$ $1 \ / 4e$ in 2264 in $332M83$ $34^{-1}8$ $1 \ / 4e$ in 2364 in $332M83$ $34^{-1}8$ $1 \ / 4e$ in 2364 in $332M85$ $34^{-1}4$ $12^{-2}64$ in 3764 in $332M85$ $52eam 0xide Finish$	1/8"-27	3/4 in	2 7/64 in	33ZM87
44^{+18} 1 ½ in 2 ½ in 332M88 34^{+18} 1 ½ in 2 ½ in 332M88 36^{+18} 1 ½ in 2 ½ in 332M89 36^{+18} 1 ½ in 2 ½ in 332M89 32^{+14} 1 ½ 4 in 3 ½ in 32 ½ in Steam Oxide Fnish 7 1 ½ 4 in 3 ½ in 32 ½ 5 in 36^{+18} 1 ½ in 2 ½ 4 in 332M85 32 ½ 5 in 36^{+18} 1 ½ in 2 ½ 4 in 332M85 32 ½ 5 in 36^{+18} 1 ½ in 2 ½ 4 in 332M85 32 ½ 5 in 36^{+18} 1 ½ in 2 ½ 4 in 332M85 32 ½ 5 in 36^{+18} 1 ½ in 2 ½ 4 in 332M85 32 ½ 5 in 36^{+18} 1 ½ in 2 ½ 4 in 332M85 32 ½ 5 in 36^{+18} 1 ½ in 3 ½ in 32 ½ 5 in 332 № in 36^{+18}	1⁄4*-18	1 1/16 in	2 27/64 in	33ZM83
44-18 146 in 22464 in $332M57$ 364 -18 146 in 2364 in $332M67$ 364 -18 146 in 2364 in $332M62$ 364 -18 146 in 2364 in $332M62$ 364 -18 146 in 2364 in $332M62$ 347 -18 146 in 2364 in $332M62$ 347 -14 1264 in $332M65$ $332M65$ 347 -14 1264 in 3764 in $332M65$ Steam Oxide Finish 364 in $332M65$ 364 in $332M65$ $367-18$ 146 in 2764 in $332M65$ 364 in $332M65$ $367-18$ 146 in 2764 in $332M65$ 364 in $332M65$ $367-18$ 146 in 2764 in $332M65$ $367-18$ 376 in $332M65$ $367-18$ 146 in 2764 in $332M65$ $396-18$ $332M65$ $367-18$ 146 in 376 in $332M65$ $396-18$ $332M65$ NPTF, 5 Flutes Bight Finish 346 in $332M65$ <td>1⁄4"-18</td> <td>1 1/16 in</td> <td>2 27/64 in</td> <td>33ZM88</td>	1⁄4"-18	1 1/16 in	2 27/64 in	33ZM88
3% -18 $1\/he$ in $2\/5\%$ in $332/M44$ 3% -18 $1\/he$ in $2\/3\%$ in $332/M44$ 3% -18 $1\/he$ in $2\/3\%$ in $332/M48$ 3% -18 $1\/he$ in $2\/3\%$ in $332/M48$ 3% -18 $1\/he$ in $2\/\%$ in $332/M86$ 3% -18 $1\/he$ in $3\/he$ in $332/M86$ 1% -14 $1\/\%$ in $3\/he$ in $332/M86$ Steam Oxide Finish $1\/\%$ in $2\/\%$ in $332/M66$ 1% -27 $3\/$ in $2 \/\%$ in $332/M66$ 1% -27 $3\/$ in $32/M66$ $1\/\%$ -27 1% -27	1⁄4"-18	1 3/64 in	2 27/64 in	33ZM57
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	3/8=-18	1 1/16 in	2 35/64 in	33ZM84
3%-18 1 ½ in 2 % in 332/M88 ½'-14 1 % in 3 % in 332/M88 ½'-14 1 % in 3 % in 332/M85 Steam Oxide Finish	3⁄8"-18	1 3/64 in	2 35/64 in	33ZM62
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	3⁄8"-18	1 1/16 in	2 35/64 in	33ZM89
½-14 1 2%i in 3 %i in 332/067 ½-14 1 2%i in 3 %i in 332/068 Steam Oxide Finish			3 7/64 in	
½-14 1 2% in 3 ½ in 332/85 Steam Oxide Finish	1/2"-14	1 23/64 in		33ZM67
Steam Oxide Finish 327 34 in 2 %4 in 332M52 %1-27 34 in 2 %64 in 332M52 %1-18 1 %64 in 2 %64 in 332M52 %1-18 1 %64 in 2 %64 in 332M52 %2-14 1 %64 in 2 %64 in 332M52 %2-7 %4 in 2 %64 in 332M52 %2-7 %4 in 2 %64 in 332M52 %2-7 %4 in 2 %64 in 332M53 %2-7 %4 in 2 %64 in 332M53 %2-7 %4 in 2 %64 in 332M56 %2-7 %4 in 3 %6 in 332M66 %2-7 %4 in 3 %6 in 332M66 %2-74 1 %4 in 3 ½ in 332M66 %4-74 1 %4 in 3 ½ in 332M67 %4-74 1 %4 in 3 ½ in 332M74 %4-74 1 %4 in 3 ½ in 332M74 %4-74 1 %4 in 3 ½ in 332M74 %4-74 1 %4 in	1/2"-14	1 ²³ /64 in		33ZM85
%*-18 1 % in 2 % in 332/M63 ½*-14 1 % in 3 % in 332/M63 TICN Finish	Steam Oxide Finish			
½*-14 1 2% in 3 ½ in 3 32 M68 TiCN Finish 3 332 M68 332 M68 ½*-18 1 % in 2 ½ in 332 M68 ½*-18 1 % in 2 ½ in 332 M68 ½*-14 1 % in 2 ½ in 332 M68 ½*-14 1 % in 2 ½ in 332 M68 PTF, 5 Flutes Bright Finish 34*-14 1 2% in 3 ½ in 332 M68 3½*-14 1 2% in 3 ½ in 332 M68 32 M78 32 M78 3½*-14 1 2% in 3 ½ in 332 M86 32 M74 32 M74 1*-11 ½ 1 ½ in 3 ½ in 32 M74 32 M74 1*11 ½ 3 ½ in 32 M74 3¼*-14 1 2% in 3 ½ in 3 ½ in 32 M74 3 ½ in 32 M74 3¼*-14 1 2% in 3 ½ in 3 ½ in 32 ½ in 3 ½ in 32 ½ in	1/8"-27	3/4 in	2 7/64 in	33ZM52
TiCN Finish 34 in 2 ½4 in 332/M53 ½4'-18 1 ¾64 in 2 ¾4 in 332/M53 ½4'-18 1 ¾64 in 2 ¾64 in 332/M53 ½4'-18 1 ¾64 in 2 ¾64 in 332/M54 ½*'-14 1 ⅔64 in 3 ¾64 in 332/M65 NPTF, 5 Flutes 3 ½64 in 3 ½64 in 332/M65 Bright Finish	3⁄8"-18	1 3/64 in	2 35/64 in	33ZM63
TiCN Finish 332M53 ½'-27 ¾ in 2 ¼ in 332M53 ¼'-18 1 ¾ in 2 ¾ in 332M54 ½'-18 1 ¾ in 2 ¾ in 332M54 ½'-14 1 ⅔ in 332M65 NPTF, 5 Flutes 3 ¼ in 332M66 Pright Finish 3 ¼ in 332M66 3¼'-14 1 ⅔ in 3 ¼ in 332M66 1'-11 ½ 1 ¾ in 3 ¼ in 332M66 3'4'-14 1 ⅔ in 3 ¼ in 332M66 1''-11 ½ 1 ¾ in 3 ¼ in 332M76 ¾'-14 1 ⅔ ¼ in 3 ¼ in 332M76 ¾'-14 1 ⅔ ¼ in 3 ¼ in 332M76 ¾'-14 1 ⅔ ¼ in 3 ¼ in 332M76 1''-11 ½ 1 ¾ in 3 ¼ in 332M74 1''-11 ½ 1 ¾ in 3 ¼ in 332M74 3¼'-14 1 ⅔ ¼ in 3 ¼ in 332M74	1⁄2"-14	1 ²³ /64 in	3 7/64 in	33ZM68
1/4-18 1 % in 2 % in 332 M5 %6-18 1 % in 2 % in 332 M6 %6-18 1 % in 2 % in 332 M6 %7-14 1 % in 3 % in 332 M6 NPTF, 5 Flutes 3 % in 332 M6 %1-14 1 % in 3 % in 332 M6 %4'-14 1 % in 3 % in 332 M6 %4'-14 1 % in 3 % in 332 M6 1*-11 ½ 1 % in 3 % in 332 M6 1*-11 ½ 1 % in 3 % in 332 M6 %1-14 1 % in 3 % in 332 M7 %1-14 1 % in 3 % in 332 M7 %1-14 1 % in 3 % in 332 M7 %1-14 1 % in 3 % in 332 M7 %1-14 1 % in 3 % in 332 M7 %1-14 1 % in 3 % in 332 M7 %1-14 1 % in 3 % in 332 M7 %1-14 1 % in 3 % in 332 M7	TiCN Finish			
3%-18 1 % in 2 % in 332M64 ½'-14 1 2% in 3 % in 332M65 NPTF, 5 Flutes Bright Finish 3 % in 332M67 ¾'-14 1 2% in 3 ½ in 332M67 ¾'-14 1 2% in 3 ½ in 332M67 1'-11 ½ 1 % in 3 ½ in 332M76 5team 0xide Finish 3 ½ in 332M74 ½'-14 1 2% in 3 ½ in 332M74 1'-11 ½ 1 ¾ in 3 ½ in 332M74 1'-11 ½ 1 ¾ in 3 ½ in 332M74 1'-11 ½ 1 ¾ in 3 ½ in 332M74 1'-11 ½ 1 ¾ in 3 ½ in 332M74 1'-11 ½ 1 ¾ in 3 ½ in 332M74 1'-14 1 2% in 3 ½ in 332M74	1/8"-27	3/4 in	2 7/64 in	33ZM53
3%-18 1 % in 2 % in 332M64 ½'-14 1 2% in 3 % in 332M65 NPTF, 5 Flutes Bright Finish 3 % in 332M67 ¾'-14 1 2% in 3 ½ in 332M67 ¾'-14 1 2% in 3 ½ in 332M67 1'-11 ½ 1 % in 3 ½ in 332M76 5team 0xide Finish 3 ½ in 332M74 ½'-14 1 2% in 3 ½ in 332M74 1'-11 ½ 1 ¾ in 3 ½ in 332M74 1'-11 ½ 1 ¾ in 3 ½ in 332M74 1'-11 ½ 1 ¾ in 3 ½ in 332M74 1'-11 ½ 1 ¾ in 3 ½ in 332M74 1'-11 ½ 1 ¾ in 3 ½ in 332M74 1'-14 1 2% in 3 ½ in 332M74	1⁄4"-18	1 3/64 in		33ZM59
½-14 1 2%4 in 3 ½4 in 3 32M69 NPTF, 5 Flutes Bright Finish 31/4 in 332M73 ¾4-14 1 2%4 in 3 ¼4 in 332M73 ¾4-14 1 2%4 in 3 ¼4 in 332M73 ¾4-14 1 2%4 in 3 ¼4 in 332M75 Steam Oxide Finish 3/4 in 332M74 ¾4'-14 1 2%4 in 3 ¼ in 332M74 ¾4'-14 1 2%4 in 3 ¼4 in 332M76 ¾4'-14 1 2%4 in 3 ¼4 in 332M76 ¾4'-14 1 2%4 in 3 ¼4 in 332M76	3⁄8"-18	1 3/64 in		33ZM64
WPTF, 5 Flutes Bright Finish ¾4'-14 1 2%4 in 3 ½ in 33ZM86 ¾4'-14 1 2%4 in 3 ½ in 33ZM86 1*-11 ½ 1 ¾ in 3 ½ in 33ZM86 1*-11 ½ 1 ¾ in 3 ½ in 33ZM73 3½-14 1 2%4 in 3 ½ in 33ZM74 ¾-14 1 2%4 in 3 ½ in 33ZM74 TiCN Finish		1 ²³ /64 in		33ZM69
Bright Finish 31/2 in 33/2 in 33/2 m73 3/2-14 1 2%4 in 3 1/2 in 33/2 m73 3/2-14 1 2%4 in 3 1/2 in 33/2 m86 1*-11 1/2 1 3/4 in 3 3/2 in 33/2 m86 3/4-14 1 2%4 in 3 1/2 in 32/2 m76 3/4-14 1 2%4 in 3 1/2 in 33/2 m76 TICH Finish 3 1/2 in 3 3/2 in 33/2 m76 3/4-14 1 2%4 in 3 1/2 in 3 3/2 in 33/2 m76	NPTF. 5 Flutes			
34-14 1 2% in 3 ½ in 332M73 34-14 1 2% in 3 ½ in 332M86 56 an Oxide Finish 3 ½ in 332M87 34-14 1 ½ in 3 ½ in 332M87 Steam Oxide Finish 3 ½ in 332M87 34-14 1 2% in 3 ½ in 332M87 TiCN Finish 7 1 ½ in 3 ½ in 332M80 34-14 1 2% in 3 ½ in 332M80	Bright Finish			
34-*14 1 2% in 3 ½ in 332M86 1*-11 ½ 1 ¾ in 3 ¾ in 332M79 Steam Oxide Finish 3¼ · 14 1 2% in 3 ¾ in 332M79 ¾ · 14 1 2% in 3 ¼ in 332M74 11 ½ 1 ¾ in 3 ¼ in 332M74 11 ½ 1 ¾ in 3 ¼ in 332M77 TICN Finish 3 ¼ in 332M76 14/-14 1 2% in 3 ¼ in 332M76		1 ²³ ⁄ ₆₄ in	3 ¼ in	33ZM73
1"-11 ½ 1 ¾ in 3 ¾ in 33ZM79 Steam Oxide Finish	3⁄4"-14	1 23/64 in	3 1/4 in	33ZM86
Steam Oxide Finish 3¼-14 1 2¾4 in 3 ¼ in 332M74 ¾-14 1 2¾4 in 3 ¼ in 332M78 TiCN Finish 3¼-14 1 2¾4 in 3 ¼ in 332M78	1"-11 1/2	1 3/4 in	3 3/4 in	33ZM79
1*-11 ½ 1 ¾ in 3 ¾ in 33ZM80 TICN Finish 3¼-14 1 ⅔¼ in 3 ¼ in 33ZM80 ¾-14 1 ⅔¼ in 3 ¼ in 33ZM75	Steam Oxide Finish			
1*-11 ½ 1 ¾ in 3 ¾ in 33ZM80 TICN Finish 3¼-14 1 ⅔4 in 3 ¼ in 33ZM80 ¾-14 1 ⅔4 in 3 ¼ in 33ZM75	3⁄4"-14	1 ²³ ⁄64 in	3 ¼ in	33ZM74
TiCN Finish 3/4*-14 1 23/64 in 3 1/4 in 33ZM75			3 3/4 in	33ZM80
34"-14 1 2364 in 3 1/4 in 33ZM75			2,111	2.0211100
1"-11 ½ 1 ¾ in 3 ¾ in 337M81	3⁄4"-14	1 23/64 in	3 ¼ in	33ZM75
	1"-11 ½	1 3/4 in	3 ¾ in	33ZM81

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