Equipo de Perforación de rotación y lavado requeridos para el proceso constructivo de URI NORTE

Equipo de perforación tipo patin o sobre oruga, con el sistema de rotación y lavado, adecuados con brocas tricono preferiblemente de 12”, dientes de tugsteno y tubería de perforación petrolera de 2 7/8 especial para suelo duro. Debe ser complementado con equipo de bomba de inyección tipo Bean Royal de 700 bares de presión tipo pistón con tanques mezcladores con agitadores hidráulicos de 0.5 m3 para lechada y bomba de barrido de presión tipo Honda de 13 hp. Por último, se debe contar con tanques de almacenamiento de agua y almacenamiento de lodos.



Bamba de Inyección tipo Bean Royal de 700 bares



Tanques agitadores hidráulicos.

Ver catálogos equipos (anexo)



Beretta T21



Veermer D10X15

Brocas tricono dientes tugsteno





Tubería de perforación

BERETTA T21

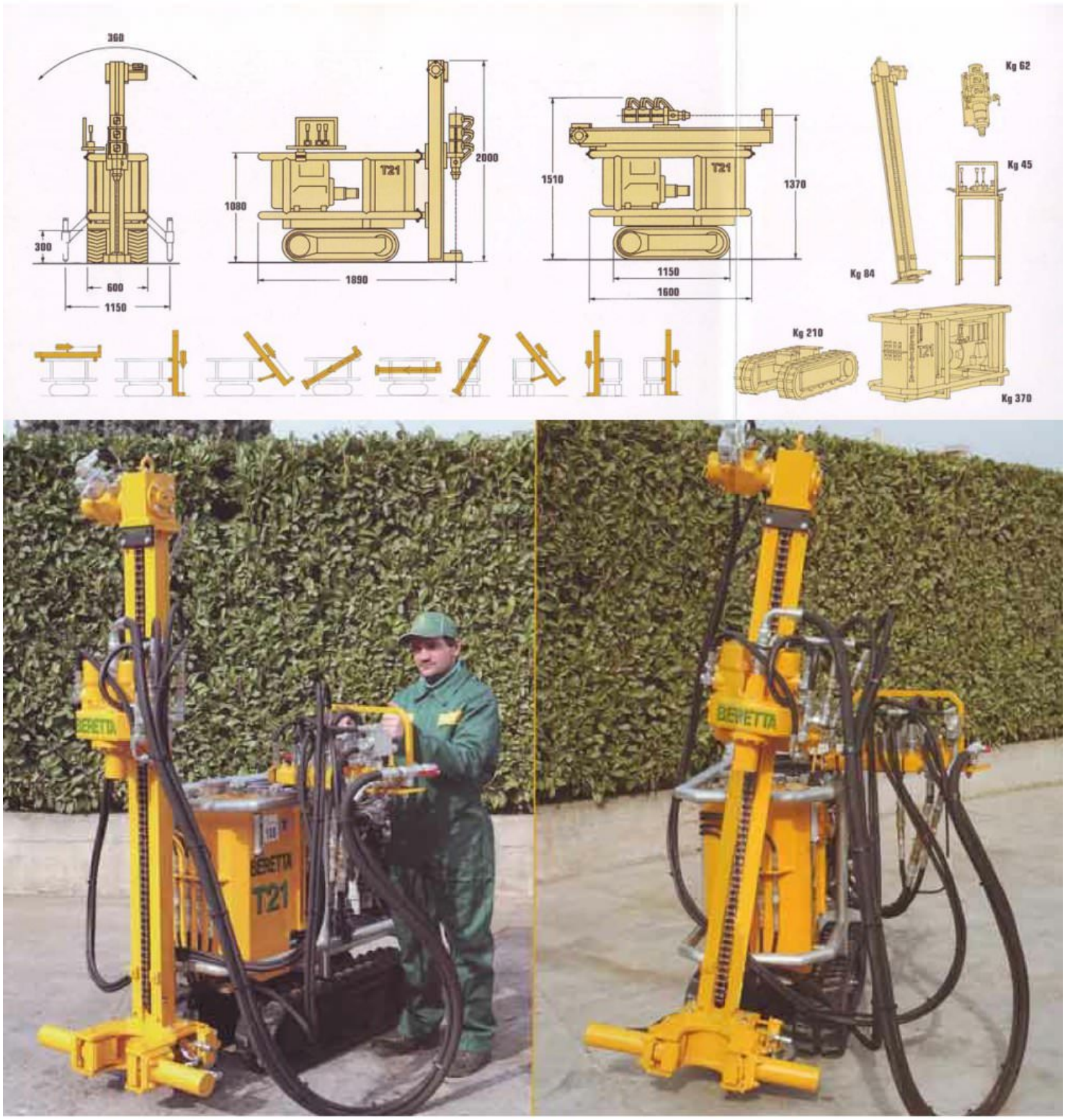
Caratteristiche tecniche	Technical data		U.M. - U.S.A.
MOTORE DIESEL	**DIESEL ENGINE**		
tipo	type	**Lombardini LDW 1003**	
potenza	power	**14 Kw - 2500 rpm**	**18,7 HP**
CARRO CINGOLATO	**CRAWLERS**		
velocità	speed	**0 - 3 km/h**	**0 - 1,86 mph**
pendenza massima superabile	max gradeability	**55%**	**55%**
pressione specifica al suolo	ground bearing pressure	**2.47 N/cm2**	**3,51 PSI**
larghezza pattini	shoe width	**180 mm**	**7,08 in**
SLITTA	**MAST**		
lunghezza slitta	mast lenght	**2000 mm**	**78,74 in**
corsa carrello testa rotazione	stroke of rotary head	**1200 mm**	**47,24 in**
tiro-spinta massimo motoriduttore	ratiomor pull-push	**1200 kg**	**2645 lb**
TESTA ROTAZIONE STANDARD "22 2V"	**"22 2V" STANDARD ROTARY HEAD**		
numero marce	speed number	**2**	**2**
I marcia - coppia max	I speed - max torque	**230 daNm**	**1695 lb ft**
I marcia - giri max	I speed - speed	**0 - 46 rpm**	**0 - 46 rpm**
II marcia - coppia max	II speed - max torque	**115 daNm**	**848 lb ft**
II marcia - giri max	II speed - speed	**0 - 92 rpm**	**0 - 92 rpm**
nota: a richiesta si possono avere diverse coppie e numeri di giri	other performances upon request		
MORSA SEMPLICE - OPTIONAL	**SIMPLE CLAMP - OPTIONAL**		
diametri bloccaggio	blocking diameter	**50 - 160 mm**	**1,96 - 6,30 in**
forza di chiusura	clamping force	**65 KN**	**14329 lb**
IMPIANTO IDRAULICO	**HYDRAULIC SYSTEM**		
pompa ingranaggi nr.1	no. 1 gear pump	**P1=35 l/min**	**P1=9,25 gal/min**
pompa ingranaggi nr.2	no. 2 gear pump	**P2=10 l/min**	**P2=2,64 gal/min**
pressione massima	max pressure	**210 BAR**	**2987 PSI**
PESO TOTALE MACCHINA	**TOTAL MACHINE WEIGHT**	**771 KG**	**1700 lb**

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Revisione Depliant N. 5 - Febbraio 2008 / Brochure revision N. 5 - February 2008

Beretta Alfredo s.r.l.

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D10X15 S3 HDD

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Potencia y rendimiento

LOCALIZAR A UN DISTRIBUIDOR

SOLICITAR INFORMACIÓN ADICIONAL

La perforadora direccional horizontal D10x15 S3 Navigator® es una solución fiable y económica para instalaciones de servicio pequeñas, fabricada para aumentar la productividad de su cuadrilla a fin de que pueda pasar de un trabajo al siguiente más rápido. La D10x15 S3, con avances significativos en potencia y velocidad y una reducción de ruido, puede ayudar a instalar más productos en el terreno en un tiempo más corto.

CARACTERÍSTICAS Y VENTAJAS

Más longitud por día

Un aumento de velocidad de casi del 11% en la velocidad del portador con respecto a su predecesora permite tiempos de ciclos más rápidos y una mayor productividad en la obra.

Mayor rendimiento de rotación

El mayor rendimiento de rotación incrementa la productividad; un aumento de la velocidad del huso de hasta un 16% en comparación con su predecesora permite mejores lodos de barro, mejorando el flujo de barro mientras se instala el producto por tracción en suelos más blandos o reactivos.

Acuda más rápido al trabajo

Una velocidad de desplazamiento máxima (avance) de hasta 5,3 km/h (3,3 mph) con control remoto inalámbrico opcional hace que sea más rápido que su máxima competidora, contribuyendo a que los tiempos de configuración del trabajo, entrada en la obra y salida de la obra pasen más rápido.

Elevado par rotacional nominal

Elevado par rotacional nominal de 2.033,7 Nm (1.500 lb pie) y fuerza de empuje/tracción de 44,5 kN (10.000 lb) que proporcionan la potencia versátil requerida para terrenos difíciles y tirar de escariadores.

Compacta pero potente

Un aumento de casi el 50% en la relación de esfuerzo de tracción a peso sobre su predecesora permite hacer mejor el seguimiento en zanjas y una mayor capacidad de maniobra al afinar la configuración y colocar el remolque.

Niveles de ruido reducido

Los niveles de ruido reducido en el oído del operador hacen posible un entorno laboral más silencioso, creando menos perturbaciones en los alrededores y permitiendo una comunicación más sencilla entre los miembros de la cuadrilla.

Superficie de contacto con el suelo pequeña

Superficie de contacto con el suelo pequeña, 10 cm (4") más estrecha que la máquina de la competencia más próxima, que permite que la perforadora maniobre en obras estrechas y pueda colocarse lado a lado con un sistema de mezcla en un remolque.

ESPECIFICACIONES

COMPARAR MODELOS →

Mostrar métricas

DIMENSIONES Y PESOS GENERALES

Longitud (mínima de transporte)	388.6 cm
Ancho (mínimo, de transporte)	111.8 cm
Altura (mínima, de transporte)	167.6 cm
Peso	3515.3 kg
Ángulo de ataque	22 deg

MOTOR

Marca y modelo	Deutz TD2.9
Tipo de combustible	Combustible diesel con contenido de azufre bajo
Velocidad máxima del motor en rpm	2300 rpm
Potencia bruta	44.7 kw
Aspiración	Turboalimentado
Nivel de ruido al oído del operador	86 dB(A)
Emisiones nominales	Tier 4i (Etapa IIIA de la UE)

MOTOR - OPCIÓN DOS

MOTOR - OPCIÓN TRES

OPERACIONAL

PUBLICACIONES

Hoja de especificaciones de la D10x15 S3

Catálogo de herramientas para perforadoras direccionales horizontales Borestore

D10x15 S3 NAVIGATOR®
HORIZONTAL DIRECTIONAL DRILL





MORE LENGTH PER DAY. Featuring an increase of almost 11% in carriage speed over its predecessor — the D9x13 S3 Navigator® HDD — the drill offers fast cycle times and enhanced productivity on the jobsite.



GET TO WORK FASTER. The D10x15 S3 features a ground drive speed of up to 3.3 mph (5.3 km/h) — helping make jobsite entry and departure go more quickly.



NARROW FOOTPRINT. With a slender profile of 44 in (111.8 cm) in width, the drill can easily maneuver within narrow jobsites and position side by side with a mix system on a trailer, helping to increase productivity when working in urban spaces.



COMPACT BUT POWERFUL. The D10x15 S3 stands out due to its compact design and light weight. With 10,000 lb (44.5 kN) of thrust/pullback and 1,500 ft-lb (2,033.7 Nm) of rotational torque, it has the power required for tough ground conditions and pulling reamers.



REDUCED NOISE. The D10x15 S3 is designed to limit its operating noise, creating less neighborhood disturbance and enabling easier communication among crew members.



SERVICEABILITY. A one-piece, hinged hood offers durability as well as convenient access to daily key service points.

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D10x15 S3 NAVIGATOR® HORIZONTAL DIRECTIONAL DRILL

GENERAL WEIGHTS AND DIMENSIONS

Min transport length: 153 in (389 cm)
Min transport width: 44 in (111.8 cm)
Min transport height: 66 in (167.6 cm)
Weight: 7,200 lb (3,265.9 kg)

ENGINE OPTION ONE

Make/Model: Deutz TD2.9
Fuel type: Low sulfur diesel
Max engine rpm: 2,300 rpm
Gross horsepower: 60 hp (45 kW)
Aspiration: Turbocharged
Noise level at operator's ear: 86 dB(A)
Emissions rating: Tier 4i (EU Stage IIIA)

ENGINE OPTION TWO

Make/Model: Deutz TD2.9
Fuel type: Low sulfur diesel
Max engine rpm: 2,300 rpm
Gross horsepower: 60 hp (45 kW)
Aspiration: Turbocharged
Noise level at operator's ear: 86 dB(A)
Emissions rating: Tier 4 Final (EU Stage IV)

ENGINE OPTION THREE

Make/Model: Deutz TD2.9
Fuel type: Low sulfur diesel
Max engine rpm: 2,300 rpm
Gross horsepower: 60 hp (45 kW)
Aspiration: Turbocharged
Noise level at operator's ear: 87 dB(A)
Emissions rating: Tier 4 Final (EU Stage V)

OPERATIONAL

Thrust/Pullback: 10,000 lb (44.5 kN)
Max carriage speed at max engine rpm: 208 fpm (63.4 m/min)
Max spindle torque (low at max engine rpm): 1500 ft-lb (2033.7 Nm)
Max spindle speed at max engine rpm: 240 rpm
Min bore diameter: 2.5 in (6.4 cm)
Max ground drive speed at max engine rpm (fwd): 3.3 mph (5.3 km/h)
Drill rack angle: 14°–17° (24.9%–30.6%)

FLUID CAPACITIES

Fuel tank: 18 gal (68.1 L)
Hydraulic system: 25 gal (94.6 L)

DRILLING FLUID SYSTEM

Max flow: 20 gpm (75.7 L/min)
Max pressure: 1,000 psi (6.9 MPa)

FEATURES

Breakout system: Standard hydraulic vise
Flow indicator: Standard
Stakedown system: Standard
Strike alert: Standard
Remote lockout: Standard

DRILL PIPE

Type: 1.66 Firestick® drill rod #200
Length: 6 ft (1.8 m)
Rod diameter: 1.66 in (4.2 cm)
Weight: 26 lb (11.8 kg)
Bend radius: 95.5 ft (29.1 m)
Onboard capacity: 300 ft (91.4 m)

NOTES:

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Vol. 9

BORESTORE®

HDD TOOLING AND ACCESSORIES WAREHOUSE



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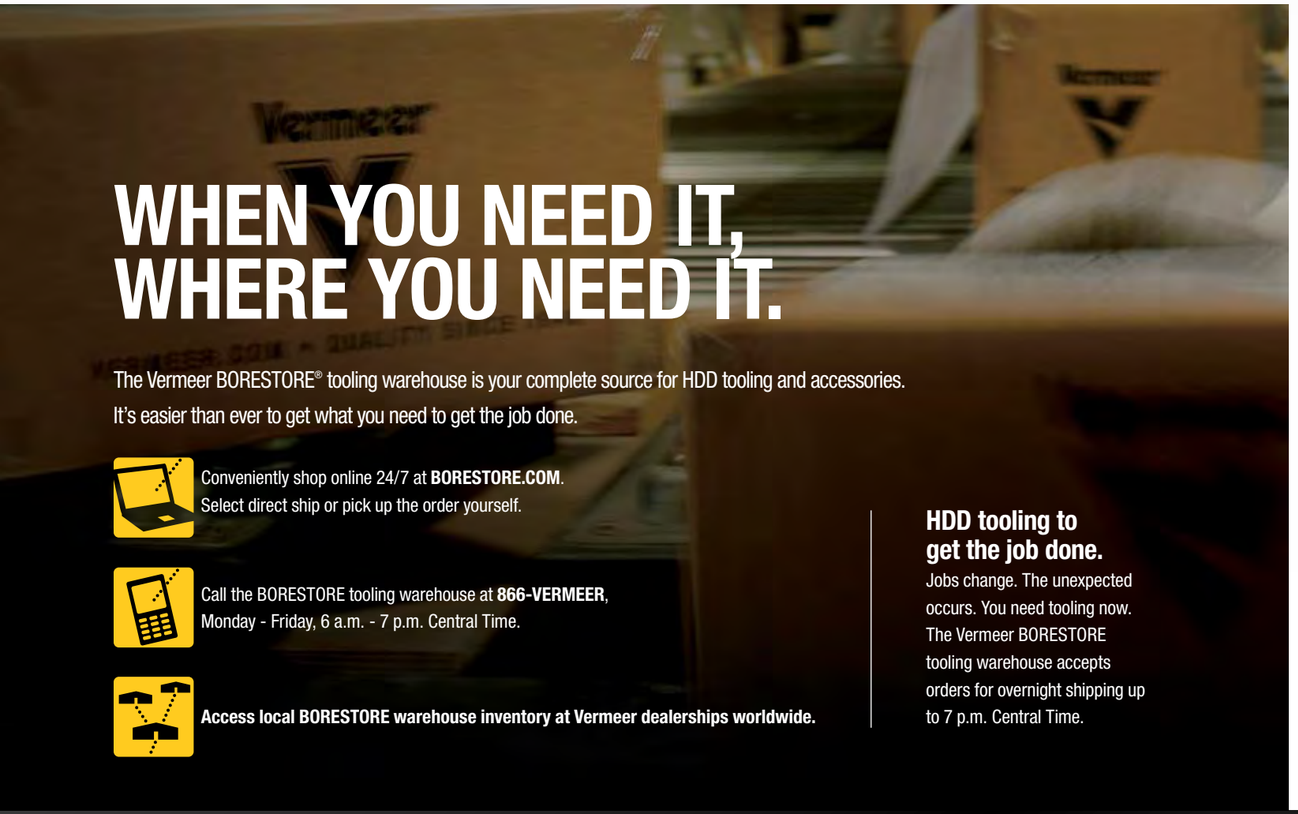


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When we say we have unmatched HDD customer support, it's because we do. Speak with a Vermeer HDD tooling specialist at your local dealership about what's going on with your machine (no matter the color), your ground conditions, your mud mix or the tooling you need for the next job.

Located throughout North America, Vermeer mobile tooling specialists have an acute focus on tooling and will work with you to select the best tooling for ground conditions, drill size and type, as well as other considerations.

Contact your local dealer for more information.



WHEN YOU NEED IT, WHERE YOU NEED IT.

The Vermeer BORESTORE® tooling warehouse is your complete source for HDD tooling and accessories. It's easier than ever to get what you need to get the job done.

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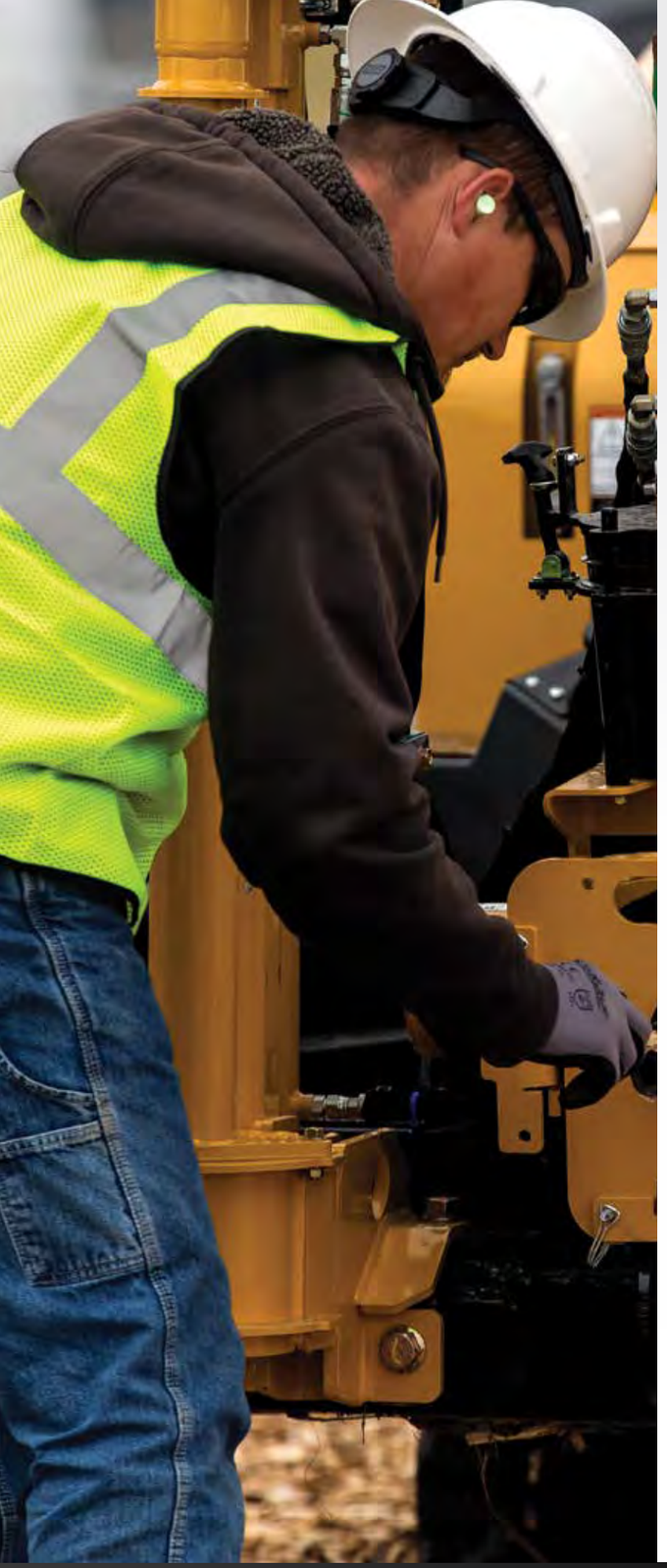
HDD tooling to get the job done.

Jobs change. The unexpected occurs. You need tooling now. The Vermeer BORESTORE tooling warehouse accepts orders for overnight shipping up to 7 p.m. Central Time.

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QUICK RIG GUIDE

Need help building a drill string? Here's your guide for the most popular tooling for your Vermeer horizontal directional drills (HDDs). From drill rod and connection options, to housing, vise jaws and rod wipers, we have you covered.

MORE RESOURCES STILL

Can't find what you are looking for in the quick rig guide? Browse through the rest of the Vermeer BORESTORE warehouse catalog, **BORESTORE.com** or call your local dealer for a comprehensive listing of available tooling and accessories.

VERMEER RIGFITTER

The Vermeer RigFitter is the next best thing when a Vermeer tooling specialist consultation isn't an option. This user-friendly digital tool can help you select and plan the ideal HDD tooling for your rig.
You can access RigFitter via **BORESTORE.com.**



D6x6 | D7x11 | D7x11A | D8x12
1.32-IN #200 6-FT (1.8-M) LONG ROD

PART NO.	PRODUCT
SUB SAVER	
296276507	FST 1.66-in #200 thread, 8-in (20.3-cm) long
DRILL ROD OPTION	
222394001	Firestick® drill rod 1.32-in #200 thread, 6-ft (1.8-m) long
QUICKFIRE CONNECTION SYSTEM	
296364003	Starter rod QuickFire® connection system 300 (B) x FST #200 (B)
296364002	Collar QuickFire system 300 (hardfaced)
296364044	Collar QuickFire system 300 (hardfaced with teeth)
296364040	Adapter QuickFire system 300 (P) x 2-4 ACME (P)
QUICKFIRE HD CONNECTION SYSTEM	
296555466	Starter rod QuickFire HD 300 (P) x 1.66-in FST #200 (B)
296560815	Collar QuickFire HD 300 (hardfaced)
296555458	Collar QuickFire HD 300 (hardfaced with teeth)
296560794	Adapter QuickFire HD 300 (B) X 2-in API IF (P)
296555470	Adapter QuickFire HD 300(B) X 2-4 ACME (P)
LOW-PROFILE CONNECTIONS	
276261001	Starter rod 1.625-in LPT (B) x FST #200 (B)
289274001	Collar 1.625-in LPT (hardfaced)
296343245	Collar 1.625-in LPT (hardfaced with teeth)
262392001	Adapter 1.625-in LPT (P) x 2-4 ACME (P)
HOUSING OPTIONS	
296343209	End load housing 2-in (5.1-cm) OD x FST #200 (B) 8-in (20.3-cm) DCI® mini (Vermeer 5-bolt pattern)
296274010	End load housing 2.25-in (5.7-cm) OD x FST #200 (B) 15-in (38.1-cm) DCI® (Vermeer 5-bolt pattern)
296408265	Premium housing 2.75-in (7-cm) OD x 2-4 ACME (B) (Vermeer 6-bolt pattern)
296448877	Direct connect housing 2.5-in (6.35-cm) OD x FST #200 (B) (Vermeer 5-bolt pattern)
296466246	Premium housing direct connect kit 2.75-in (7-cm) OD x FST #200 (B) (Vermeer 6-bolt pattern)
296566776	Ultra X3 275 housing 2.75-in (7-cm) OD x 2-in API IF (B)
VISE JAW	
296271432	Vise jaw
ROD WIPER OPTIONS	
235920001	Rod wiper
296385050	Rod wiper - split (D8x12)



D7x11 | D7x11A | D7x11A SERIES II | D8x12 | D9x13 SERIES II D9x13 S3 | D10x15 S3
1.66-IN #200 6-FT (1.8-M) LONG ROD

PART NO.	PRODUCT
DRIVE CHUCK	
296255361	FST 1.66-in #200 thread, 10-in (25.4-cm) long (D7x11A)
SUB SAVER	
296255351	FST 1.66-in #200 thread, 5.83-in (14.8-cm) long (D7x11A)
296276507	FST 1.66-in #200 thread, 8-in (20.3-cm) long (D7x11A Series II, D8x12, D9x13 Series II, D9x13 S3, D10x15 S3)
DRILL ROD OPTIONS	
216492001	Firestick drill rod 1.66-in #200 thread, 6-ft (1.8-m) long
296441778	Silver Series drill rod 1.66-in #200 thread, 6-ft (1.8-m) long
QUICKFIRE CONNECTION SYSTEM	
296364003	Starter rod QuickFire system 300 (B) x FST #200 (B)
296364002	Collar QuickFire system 300 (hardfaced)
296364044	Collar QuickFire system 300 (hardfaced with teeth)
296364040	Adapter QuickFire system 300 (P) x 2-4 ACME (P)
QUICKFIRE HD CONNECTION SYSTEM	
296555466	Starter rod QuickFire HD 300 (P) x 1.66-in FST #200 (B)
296560815	Collar QuickFire HD 300 (hardfaced)
296555458	Collar QuickFire HD 300 (hardfaced with teeth)
296560794	Adapter QuickFire HD 300 (B) X 2-in API IF (P)
296555470	Adapter QuickFire HD 300(B) X 2-4 ACME (P)
HOUSING OPTIONS	
296343209	End load housing 2-in (5.1-cm) OD x FST #200 (B) 8-in (20.3-cm) DCI® Mini (Vermeer 5-bolt pattern)
296274010	End load housing 2.25-in (5.7-cm) OD x FST #200 (B) 15-in (38.1-cm) DCI® (Vermeer 5-bolt pattern)
296408265	Premium housing 2.75-in (7-cm) OD x 2-4 ACME (B) (Vermeer 6-bolt pattern)
296448877	Direct connect housing 2.5-in (6.35-cm) OD x FST #200 (B) (Vermeer 5-bolt pattern)
296466246	Premium housing direct connect kit 2.75-in (7-cm) OD x FST #200 (B) (Vermeer 6-bolt pattern)
296566776	Ultra X3 275 housing 2.75-in (7-cm) OD x 2-in API IF (B)
VISE JAW	
296550266	Vise jaw stationary side
296550265	Vise jaw cylinder side
ROD WIPER OPTIONS	
235921001	Rod wiper
296294590	Rod wiper - split

BUILD. BUY. BORE.

Vermeer RigFitter is a powerful digital tool that helps you select the right HDD tooling.

Now, Vermeer sets a new industry standard in HDD tooling configurators with RigFitter — a powerful and user-friendly digital tool that helps you select the ideal HDD tooling for your rig. When building a drill string, it's the next best thing to your Vermeer HDD tooling specialist.

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D16x20 | D16x20A | D16x20 Series II | D18x22 | D20x22 | D20x22 S3
1.9-IN #250 10-FT (3-M) LONG ROD

PART NO.	PRODUCT
DRIVE CHUCK	
296255364	FST 1.9-in #250 thread, 11-in (27.9-cm) long
SUB SAVER	
296255352	FST 1.9-in #250 thread, 4-in (10.2-cm) long (D16x20, D16x20A, D18x22, D20x22)
296291966	FST 1.9-in #250 thread, 10.14-in (25.8-cm) long (D16x20 Series II, D20x22 S3)
DRILL ROD OPTIONS	
230993001	Firestick drill rod 1.9-in #250 thread, 10-ft (3.1-m) long
296441777	Silver Series drill rod 1.9-in #250 thread, 10-ft (3.1-m) long
QUICKFIRE CONNECTION SYSTEM	
296331952	Starter rod QuickFire system 400 (B) x FST #250 (B)
296331995	Collar QuickFire system 400 (hardfaced)
296364043	Collar QuickFire system 400 (hardfaced with teeth)
296364037	Adapter QuickFire system 400 (P) x 2.375-in API Reg (P)
296383294	Adapter QuickFire system 400 (P) x 8-UNC (P)
QUICKFIRE HD CONNECTION SYSTEM	
296555446	Starter rod QuickFire HD 400 (P) x 1.90-in FST #250 (B)
296560814	Collar QuickFire HD 400 (hardfaced)
296555283	Collar QuickFire HD 400 (hardfaced with teeth)
296555451	Adapter QuickFire HD 400 (B) x 2.375-in API Reg (P)
HOUSING OPTIONS	
296408264	Premium housing 3-in (7.6-cm) OD x 2.375-in API Reg (B) (Vermeer 6-bolt pattern)
296466151	Small Armor drilling system housing 3.25-in (8.3-cm) OD x 2.375-in API Reg (B)
296555441	Ultra X3 325 housing 3.25-in (8.2-cm) OD x 2.375-in API Reg (B)
VISE JAW	
236111001	Vise jaw stationary side
236112001	Vise jaw cylinder side
250272001	Vise jaw cylinder side with centering plate
ROD WIPER OPTIONS	
235922001	Rod wiper
296294594	Rod wiper - split



D18x22 | D20x22 | D20x22 Series II | D20x22 S3 | D23x30 S3
2.06-IN #400 10-FT (3-M) LONG ROD

PART NO.	PRODUCT
DRIVE CHUCK	
296279709	FST 2.06-in #400 thread, 11-in (27.9-cm) long (D18x22, D20x22)
SUB SAVER	
296279708	FST 2.06-in #400 thread, 6.5-in (16.5-cm) long (D18x22, D20x22)
296281195	FST 2.06-in #400 thread, 10.14-in (25.8-cm) long (D20x22 Series II, D20x22 S3, D23x30 S3)
DRILL ROD OPTIONS	
221628001	Firestick drill rod 2.06-in #400 thread, 10-ft (3.1-m) long
296441776	Silver Series drill rod 2.06-in #400 thread, 10-ft (3.1-m) long
QUICKFIRE CONNECTION SYSTEM	
296331926	Starter rod QuickFire system 400 (B) x FST #400 (B)
296331995	Collar QuickFire system 400 (hardfaced)
296364043	Collar QuickFire system 400 (hardfaced with teeth)
296364037	Adapter QuickFire system 400 (P) x 2.375-in (6-cm) API Reg (P)
296383294	Adapter QuickFire system 400 (P) x 8-UNC (P)
QUICKFIRE HD CONNECTION SYSTEM	
296555448	Starter rod QuickFire HD 400 (P) x 2.06-in FST #400 (B)
296560814	Collar QuickFire HD 400 (hardfaced)
296555283	Collar QuickFire HD 400 (hardfaced with teeth)
296555451	Adapter QuickFire HD 400 (B) x 2.375-in API Reg (P)
HOUSING OPTIONS	
296408264	Premium housing 3-in (7.6-cm) OD x 2.375-in API Reg (B) (Vermeer 6-bolt pattern)
296466151	Small Armor drilling system housing 3.25-in (8.3-cm) OD x 2.325-in API Reg (B)
296555441	Ultra X3 325 housing 3.25-in (8.2-cm) OD x 2.375-in API Reg (B)
VISE JAW	
296279701	Vise jaw 2.06-in (5.2-cm) stationary side
296279704	Vise jaw 2.06-in (5.2-cm) cylinder side
ROD WIPER OPTIONS	
235923001	Rod wiper 2.06-in (5.2-cm)
296294598	Rod wiper - split 2.06-in (5.2-cm)



D23x30 S3 | D24x40 | D24x40A | D24x40 Series II | D24x40 S3
2.375-IN #600 10-FT (3-M) LONG ROD

PART NO.	PRODUCT
DRIVE CHUCK	
230980001	FST 2.375-in #600 thread, 12-in (30.5-cm) long (D24x40A SN 001-382)
249169001	FST 2.375-in #600 thread, 13.5-in (34.3-cm) long (D24x40A SN 383-Above)
296273550	FST 2.375-in #600 thread, 16-in (40.6-cm) long (D24x40 Series II)
296443778	FST 2.375-in #600 thread, 16.5-in (41.9-cm) long (D24x40 S3)
SUB SAVER	
296443760	FST 2.375-in #600 thread, 10.14-in (25.8-cm) long (D23x30 S3)
230945001	FST 2.375-in #600 thread, 5.5-in (14-cm) long (D24x40A SN 001-382)
249166001	FST 2.375-in #600 thread, 7-in (17.8-cm) long (D24x40A SN 383-Above)
276323001	FST 2.375-in #600 thread, 9.5-in (24.1-cm) long (D24x40 Series II)
296443760	FST 2.375-in #600 thread, 10-in (25.4-cm) long (D24x40 S3)

D23x30 S3 | D24x40 | D24x40A | D24x40 Series II | D24x40 S3
2.375-IN #600 10-FT (3-M) LONG ROD (CONT.)

PART NO.	PRODUCT
DRILL ROD OPTIONS	
222276001	Firestick drill rod 2.375-in #600 thread, 10-ft (3.1-m) long (D23x30 S3-D24x40 S3)
222455001	Firestick drill rod 2.375-in #600 thread, 15-ft (4.6-m) long (D40x40)
296441775	Silver Series drill rod 2.375-in #600 thread, 10-ft (3.1-m) long (D23x30 S3-D24x40 S3)
QUICKFIRE CONNECTION SYSTEM	
296331924	Starter rod QuickFire system 400 (B) x FST #600 (B)
296364069	Starter rod QuickFire system 460 (B) x FST #600 (B)
296331995	Collar QuickFire system 400 (hardfaced)
296364043	Collar QuickFire system 400 (hardfaced with teeth)
296331990	Collar QuickFire system 460 (hardfaced)
296364042	Collar QuickFire system 460 (hardfaced with teeth)
296364037	Adapter QuickFire system 400 (P) x 2.375-in API Reg (P)
296364038	Adapter QuickFire system 400 (P) x 2.875-in API Reg (P)
296383294	Adapter QuickFire system 400 (P) x 8-UNC (P)
296364013	Adapter QuickFire system 460 (P) x 2.375-in API Reg (P)
296364014	Adapter QuickFire system 460 (P) x 2.875-in API Reg (P)
QUICKFIRE HD CONNECTION SYSTEM	
296555430	Starter rod QuickFire HD 400 (P) x 2.375-in FST #600 (B)
296560814	Collar QuickFire HD 400 (hardfaced)
296555283	Collar QuickFire HD 400 (hardfaced with teeth)
296555451	Adapter QuickFire HD 400 (B) x 2.375-in API Reg (P)
296555453	Adapter QuickFire HD 400 (B) x 2.875-in API Reg (P)
296560755	Starter rod QuickFire HD 460 (P) x 2.375-in FST #600 (B)
296560816	Collar QuickFire HD 460 (hardfaced)
296555475	Collar QuickFire HD 460 (hardfaced with teeth)
296560761	Adapter QuickFire HD 460 (B) x 2.375-in API Reg (P)
296560763	Adapter QuickFire HD 460 (B) x 2.875-in API Reg (P)
HOUSING OPTIONS	
296408264	Premium housing 3-in (7.6-cm) OD x 2.375-in API Reg (B) (Vermeer 6-bolt pattern)
296406540	Premium housing 3.25-in (8.3-cm) OD x 2.375-in API Reg (B) (Vermeer 6-bolt pattern)
296466243	Premium housing direct connect kit 3-in (7.6-cm) OD x FST #600 (B) (Vermeer 6-bolt pattern)
296466151	Small Armor system housing 3.25-in (8.3-cm) OD x 2.325-in API Reg (B)
296466152	Medium Armor system housing 3.75-in (9.5-cm) OD x 2.875-in API Reg (B)
296555441	Ultra X3 325 housing 3.25-in (8.2-cm) OD x 2.375-in API Reg (B)
296566842	Ultra X3 375 housing 3.75-in (9.5-cm) OD x 2.875-in API Reg (B)
VISE JAW	
296400226	Vise jaw (D23x30 S3)
230831001	Vise jaw (D24x40A-D24x40 S3)
ROD WIPER OPTIONS	
235924001	Rod wiper (D24x40)
296294602	Rod wiper - split (D23x30 S3)

For drill bit options, talk to your local Vermeer dealer to find the best fit for your next project or see pages 26-29.



Vermeer HDD tooling specialists have extensive jobsite knowledge and experience to answer your toughest jobsite and tooling questions.

D23x30DR S3

PART NO.	PRODUCT
SUB SAVER	
296522920	Outer sub saver
296487423	Threaded inner sub saver
296522905	Inner sub saver slide coupler
296487425	Inner sub saver hex
296522817	Roll pin (2 required)
296522818	Spring
DRILL ROD	
296522826	Outer rod - Firestick drill rod 2.375-in #625 10-ft (3.1-m) long
296522825	Inner hex rod
296522884	Inner rod hex coupler
296544123	Retention pin dowel (2 required)
DRILL HEAD	
296490378	RH10 drill head 15-in (38.1-cm) Sonde, 2.875-in API Reg bit box
296537909	RH10 50 hour rebuild kit
296537911	RH10 200 hour rebuild kit
296514826	RH10 drill head rebuild tool kit
296521054	PG5 quick pullback grapple for tricone bits
101562004	Vermeer polyurea grease (10-pack)
ADAPTERS	
296539674	2.375-in FST #625 (P) x 24k pull eye with fluid ports
296522913	2.375-in FST #625 (P) x 24k pull eye with fluid ports and teeth
296522850	2.375-in FST #625 (P) x 2.375-in API Reg (P)
296522848	2.375-in FST #625 (P) x 2.875-in API Reg (P)
296522852	2.375-in FST #625 (P) x 3.5-in API Reg (P)
296539673	2.375-in FST #625 (P) x 2.375-in FST #600 (P)
296539678	2.375-in FST #625 (P) x QuickFire system 400 (B) starter rod
296560796	2.375 FST #625 (P) x QuickFire HD 400 (P) starter rod
VISE JAW	
296486847	Vise jaw
ROD WIPER	
296294602	Rod wiper - split

D36x50 | D36x50 Series II | D40x55 S3
2.375-IN #650 10-FT (3-M) OR 15-FT (4.6-M) LONG ROD

PART NO.	PRODUCT
DRIVE CHUCK	
296309648	FST 2.375-in #650 thread, 14.42-in (36.6-cm) (D36x50, D36x50 Series II)
296443819	FST 2.375-in #650 thread, 15.42-in (39.2-cm) (D40x55 S3)
SUB SAVER	
296309650	FST 2.375-in #650 thread, 7.92-in (20.1-cm) long (D36x50, D36x50 Series II)
296443818	FST 2.375-in #650 thread, 8.92-in (22.7-cm) long (D40x55 S3)
DRILL ROD OPTIONS	
296309599	Firestick drill rod 2.375-in #650 thread, 10-ft (3.1-m) long (D36x50, D36x50 Series II, D40x55 S3)
296312531	Firestick drill rod 2.375-in #650 thread, 15-ft (4.6-m) long (D36x50, D36x50 Series II)
QUICKFIRE CONNECTION SYSTEM	
296331978	Starter rod QuickFire system 460 (B) x FST #650 (B)
296415321	Starter rod QuickFire system 460 (B) x FST #650 (B) with check valve
296331990	Collar QuickFire system 460 (hardfaced)
296364042	Collar QuickFire system 460 (hardfaced with teeth)
296364013	Adapter QuickFire system 460 (P) x 2.375-in API Reg (P)
296364014	Adapter QuickFire system 460 (P) x 2.875-in API Reg (P)
QUICKFIRE HD CONNECTION SYSTEM	
296560757	Starter rod QuickFire HD 460 (P) x 2.375-in FST #650 (B)
296560816	Collar QuickFire HD 460 (hardfaced)
296555475	Collar QuickFire HD 460 (hardfaced with teeth)
296560761	Adapter QuickFire HD 460 (B) x 2.375-in API Reg (P)
296560763	Adapter QuickFire HD 460 (B) x 2.875-in API Reg (P)
HOUSING OPTIONS	
296406540	Premium housing 3.25-in (8.3-cm) OD x 2.375-in API Reg (B) (Vermeer 6-bolt pattern)
296466238	Premium housing direct connect kit 3.25-in (8.3-cm) OD x FST #650 (B) (Vermeer 6-bolt pattern)
296466152	Medium Armor system housing 3.75-in (9.5-cm) OD x 2.875-in API Reg (B)
296351765	Universal housing 3.5-in (8.9-cm) OD x 2.375-in API Reg (BxB) 61.3 gpm (232.1 L/min)
296566842	Ultra X3 375 housing 3.75-in (9.5-cm) OD x 2.875-in API Reg (B)
VISE JAW	
276415001	Vise jaw 2.375-in (6-cm)
ROD WIPER OPTIONS	
235924001	Rod wiper
296294602	Rod wiper - split

D40x55DR S3

PART NO.	PRODUCT
SUB SAVER	
296472053	Outer sub saver
296456692	Threaded inner sub saver
296456600	Inner sub saver slide coupler
296456601	Inner sub saver hex
296456618	Spring
296456627	Roll pin (4 required)
DRILL ROD	
296456678	Outer rod - Firestick drill rod 2.625-in #750 10-ft (3.1-m) long
296456677	Inner hex rod
296487375	Rod coupler
296456627	Roll pin (2 required)
DRILL HEAD	
296479658	RH15 drill head 15-in (38.1-cm) Sonde, 3.5-in API bit box
296490296	RH15 drill head 19-in (48.3-cm) Sonde, 3.5-in API bit box
296490302	RH15 50 hour rebuild kit
296490303	RH15 200 hour rebuild kit - 15-in (38.1-cm) Sonde (For 296479658)
296490305	RH15 200 hour rebuild kit - 19-in (48.3-cm) Sonde (For 296490296)
296479732	RH15 drill head rebuild tool kit
296514927	PG6 quick pullback grapple for tricone bits
101562004	Vermeer polyurea grease (10-pack)
ADAPTERS	
296482803	2.625-in (6.6-cm) FST #750 (P) x 24k pull eye with fluid ports
296482840	2.625-in (6.6-cm) FST #750 (P) x 24k pull eye with fluid ports and teeth
296487452	2.625-in (6.6-cm) FST #750 (P) x 50k pull eye
296487461	2.625-in (6.6-cm) FST #750 (P) x 50k pull eye with teeth
296487454	2.625-in (6.6-cm) FST #750 (P) x 2.375-in API Reg (P)
296487456	2.625-in (6.6-cm) FST #750 (P) x 2.875-in API Reg (P)
296487458	2.625-in (6.6-cm) FST #750 (P) x 3.5-in API Reg (P)
296487472	2.625-in (6.6-cm) FST #750 (P) x 2.625-in FST #750 (P)
296456621	2.625-in (6.6-cm) FST #750 (P) x QuickFire 460 (B) starter rod
296560813	2.625-in FST #750 (P) x QuickFire 460 (P) starter rod
VISE JAW	
296486831	Vise Jaw
ROD WIPER	
296294606	Rod wiper - split

D36x50 | D36x50 Series II | D40x55 S3
2.625-IN #700 10-FT (3-M) OR 15-FT (4.6M) LONG ROD

PART NO.	PRODUCT
DRIVE CHUCK	
296309505	FST 2.625-in #700 thread, 15.5-in (39.4-cm) long (D36x50, D36x50 Series II)
296443822	FST 2.625-in #700 thread, 14.5-in (36.8-cm) long (D40x55 S3)
SUB SAVER	
296309507	FST 2.625-in #700 thread, 8.5-in (21.6-cm) long (D36x50, D36x50 Series II)
296443821	FST 2.625-in #700 thread, 9.5-in (24.1-cm) long (D40x55 S3)
DRILL ROD OPTIONS	
296309521	Firestick drill rod 2.625-in #700 thread, 10-ft (3.1-m) long
296309522	Firestick drill rod 2.625-in #700 thread, 15-ft (4.6-m) long
QUICKFIRE CONNECTION SYSTEM	
296331962	Starter rod QuickFire system 460 (B) x FST #700 (B)
296331990	Collar QuickFire system 460 (hardfaced)
296364042	Collar QuickFire system 460 (hardfaced with teeth)
296364013	Adapter QuickFire system 460 (P) x 2.375-in API Reg (P)
296364014	Adapter QuickFire system 460 (P) x 2.875-in API Reg (P)
QUICKFIRE HD CONNECTION SYSTEM	
296560811	Starter rod QuickFire HD 460 (P) x 2.625-in FST #750 (B)
296560816	Collar QuickFire HD 460 (hardfaced)
296555475	Collar QuickFire HD 460 (hardfaced with teeth)
296560761	Adapter QuickFire HD 460 (B) x 2.375-in API Reg (P)
296560763	Adapter QuickFire HD 460 (B) x 2.875-in API Reg (P)
HOUSING OPTIONS	
296406540	Premium housing 3.25-in (8.3-cm) OD x 2.375-in API Reg (B) (Vermeer 6-bolt pattern)
296466239	Premium housing direct connect kit 3.25-in (8.3-cm) OD x FST #700 (B) (Vermeer 6-bolt pattern)
296466152	Medium Armor system housing 3.75-in (9.5-cm) OD x 2.875-in API Reg (B)
296566842	Ultra X3 375 housing 3.75-in (9.5-cm) OD x 2.875-in API Reg (B)
VISE JAW	
296310768	Vise jaw
ROD WIPER OPTIONS	
296294606	Rod wiper - split



D60x90 | D60x90 S3
2.875-IN #900 15-FT (4.6M) LONG ROD

PART NO.	PRODUCT
DRIVE CHUCK	
296357202	FST 2.875-in #900 thread, 19.7-in (50.1-cm) long (D60x90, D60x90 S3)
296357222	FST 2.875-in #900 thread, 19.7-in (50.1-cm) long (wireline) (D60x90, D60x90 S3)
SUB SAVER	
296344115	FST 2.875-in #900 thread, 8.7-in (22.09-cm) (For drive chucks 296357202, 296257222)
DRILL ROD OPTION	
222452001	Firestick drill rod 2.875-in #900 thread, 15-ft (4.6-m) long
ADAPTERS	
296337363	Adapter 2.875-in API Reg (P) x 2.875-in FST #900 (B)
296341593	Adapter 2.875-in API IF (P) x 2.875-in FST #900 (B)
HOUSING OPTIONS	
296408266	Premium housing 3.5-in (8.9-cm) OD x 2.875-in API Reg (B) Vermeer 6-bolt pattern 5/8-in (1.6-cm) Bolts
296466153	Large Armor system housing 4.25-in (10.8-cm) OD x 2.875-in API IF (B)
296351766	Universal housing 3.75-in (9.53-cm) OD x 2.875-in API Reg (BxB) 95.7 gpm (362.3 L/min)
VISE JAW	
296443024	Vise block insert cylinder side (D60x90, D60x90 S3)
296350898	Vise block insert stationary side (D60x90, D60x90 S3)
ROD WIPER OPTIONS	
235925001	Rod wiper
296294610	Rod wiper - split

D60x90 | D60x90 S3 | D80x100 | D80x100 Series II
3.5-IN #800 15-FT (4.6M) LONG ROD

PART NO.	PRODUCT
DRIVE CHUCK	
296255475	FST 3.5-in #800 thread, 16.46-in (41.8-cm) long (D60x90, D60x90 S3, D80x100 Series II)
222431001	FST 3.5-in #800 thread, 13-in (33.02-cm) long (D80x100)
296268953	FST 3.5-in #800 thread, 16.49-in (41.89-cm) long (wireline) (D80x100 Series II)
SUB SAVER	
296255477	FST 3.5-in #800 thread, 7.02-in (17.8-cm) long (D60x90, D60x90 S3, D80x100, D80x100 Series II)
DRILL ROD OPTION	
222454001	Firestick drill rod 3.5-in #800 thread, 15-ft (4.6-m) long
ADAPTERS	
296257929	Adapter 2.875-in API Reg (P) x 3.5-in FST #800 (B)
296312650	Adapter 2.875-in API IF (P) x 2.875-in FST #800 (B)
HOUSING OPTIONS	
296408266	Premium housing 3.5-in (8.9-cm) OD x 2.875-in API Reg (B) Vermeer 6-bolt pattern 5/8-in (1.6-cm) Bolts
296466153	Large Armor system housing 4.25-in (10.8-cm) OD x 2.875-in API IF (B)
296351766	Universal housing 3.75-in (9.53-cm) OD x 2.875-in API Reg (BxB) 95.7 gpm (362.3 L/min)
VISE JAW	
296443140	Vise block cylinder side (D60x90, D60x90 S3)
296369679	Vise block stationary side (D60x90, D60x90 S3)
296285731	Vise block D80x100 Series II (SN 101-436)
296303056	Vise block D80x100 Series II (SN 437)
296303218	Vise insert - Diamond Pattern (For Part No.296303056)
249880001	Vise jaw (D80x100)
285754001	Vise block with Insert (DD80x100)
278121001	Vise insert (For Part No. 285754001 and 296285731) (D80x100)
ROD WIPER OPTIONS	
235926001	Rod wiper
296294614	Rod wiper - split

D100x120 Series II | D100x140 | D100x140 S3
3.5-IN #1000 15-FT (4.6M) OR 20-FT (6.1M) LONG ROD

PART NO.	PRODUCT
DRIVE CHUCK	
296309516	FST 3.5-in #1000 thread, 16.24-in (41.3-cm) long
296309602	FST 3.5-in #1000 thread, 16.24-in (41.3-cm) long (wireline)
SUB SAVER	
296309515	FST 3.5-in #1000 thread, 7.02-in (17.8-cm) long
DRILL ROD OPTIONS	
296337977	Firestick drill rod 3.5-in (8.9-cm) #1000 thread, 15-ft (4.6-m) long (D100x140, D100x140 S3)
296309520	Firestick drill rod 3.5-in (8.9-cm) #1000 thread, 20-ft (6.1-m) long
ADAPTERS	
296312588	Adapter 3.5-in API Reg (P) x 3.5-in (8.9-cm) FST #1000 (B)
296312616	Adapter 2.875-in API IF (P) x 2.875-in (7.3-cm) FST #1000 (B)
HOUSING OPTIONS	
296408267	Premium housing 4.5-in (11.4-cm) OD x 3.5-in API Reg (B) Vermeer 6-bolt pattern 3/4-in (1.9-cm) Bolts
296466153	Large Armor system housing 4.25-in (10.8-cm) OD x 2.875-in API IF (B)
296351767	Universal housing 4.5-in (11.5-cm) OD x 3.5-in API Reg (BxB) 187.6 gpm (710.1 L/min)
VISE JAW	
296303056	Vise block 3.5-in (D100x120 Series II, D100x140, D100x140 S3)
296303218	Vise insert - diamond pattern 3.5-in (For Part No. 296303056) (D100x120 Series II, D100x140, D100x140 S3)
ROD WIPER OPTIONS	
235926001	Rod wiper
296294614	Rod wiper - split

DITCH WITCH **COMPATIBLE**

BORESTORE warehouse makes it easy to utilize our most popular tooling technologies on your Ditch Witch HDD.



Connections

Running Ditch Witch drill rod? BORESTORE warehouse can cut non-proprietary thread profiles, so we can convert you to the QuickFire® connection system.



Housings

Running SubSite electronics? Our Premium and Armor system housings are available in SubSite electronics-compatible versions.

Let your local Vermeer dealer know the drill model you're running, and they can show you a variety of options to help meet your needs.



Bits

Have some life left on your current Ditch Witch housing? We offer our high-end Ace™ and Gladiator bit families in Ditch Witch 5-bolt and 6-bolt configurations, offering compatibility with your current housing.

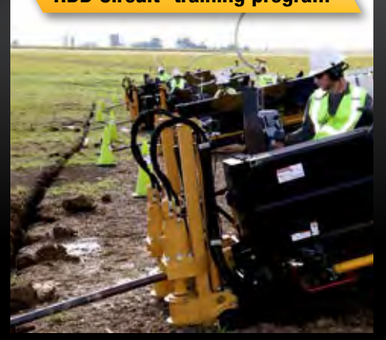
Own some Ditch Witch pattern bits? Select Premium housings feature both Vermeer 6-bolt and Ditch Witch 6-bolt configurations on a single housing, helping you maximize usage of your bit fleet.

PERSONALIZED TRAINING OPPORTUNITIES

TAILORED FOR YOUR CREW

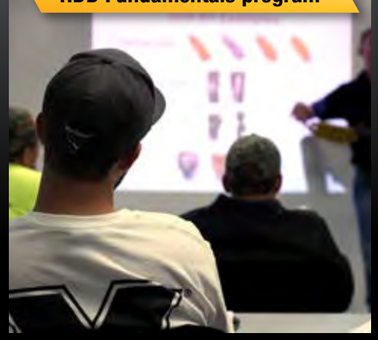
No matter the goal, Vermeer offers training opportunities to meet the unique needs of your crew. From one- and two-week options at Vermeer headquarters in Pella, Iowa, to new specialized courses offered by local Vermeer dealers.

HDD Circuit® training program



Certified in-class and hands-on training programs for trenchless installation careers that are hosted in Pella, Iowa, in a small group setting.

HDD Fundamentals program



Instructor-led classroom training that teaches the fundamentals of horizontal directional drilling and hosted by your local Vermeer dealership team.

Vermeer HDD Simulator 2.0



A virtual reality-based training interaction that gets you on a drill before you step on a jobsite.

REGISTER TODAY vermeer.com/**HDDTRAINING**

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Vermeer®



FIRESTICK®

THE SUPERIOR DRILL ROD.

High standards. High expectations. Proven results.
When Vermeer developed Firestick drill rod, it invigorated the industry. Firestick drill rod meets the high standards of quality, durability and reliability.

Quality steel. Reliable construction. Precise tolerances. These are the qualities that describe the industry-leading Vermeer Firestick drill rod. Each rod carries a batch number for traceability. Designed with a coarse and tapered thread profile for quick makeup.

The durability and performance of your drill rod is vital to your operation. See why this Vermeer original sets the industry standard.



SILVER SERIES

NOT EVERY HDD JOB IS CREATED EQUAL.

When straightforward, less-aggressive projects require a budget-conscious option, there's the Silver Series drill rod. Comprised of one-piece forged, S135 grade steel, and threaded in the same U.S. state-of-the-art facility as Firestick drill rod, it is designed for moderate steering applications.

The durability and performance of your drill rod is vital to your operation. Together, Firestick drill rod and Silver Series drill rod provide trusted options for your project.



DID YOU KNOW?
Applying Vermeer thread lock epoxy will help maintain proper torque and thread engagement of your sub saver.



Learn how the original Vermeer Firestick® drill rod set the industry standard.

VERMEER DRILL ROD USAGE GUIDE: FIRESTICK® OR SILVER SERIES DRILL ROD?

Which Vermeer HDD do you operate?



D8x12 | D7x11 – D10x15 S3 | D16x20 – D20x22 S3 | D18x22 – D24x26 | D23x30 S3 – D24x40 S3 | D36x50 – D100x140 S3

Silver Series drill rod is comprised of S135 steel with a yield stress of 135,000 psi (930,792 kPa). That makes the recommended average steer 8 percent per rod compared to 10 percent per rod with Firestick drill rod.

What level of steerability do you require with your bores?

AGGRESSIVE | MODERATE | LOW

Experienced operators know that over-steering can leave you with permanently bent or broken rods.

What degree of difficulty are your bores?

HIGH | AVERAGE | LOW

Contact your local Vermeer dealer for market competitive pricing.*

Is short-term cost minimization more important than longer-term performance?

NO | YES



Firestick drill rod



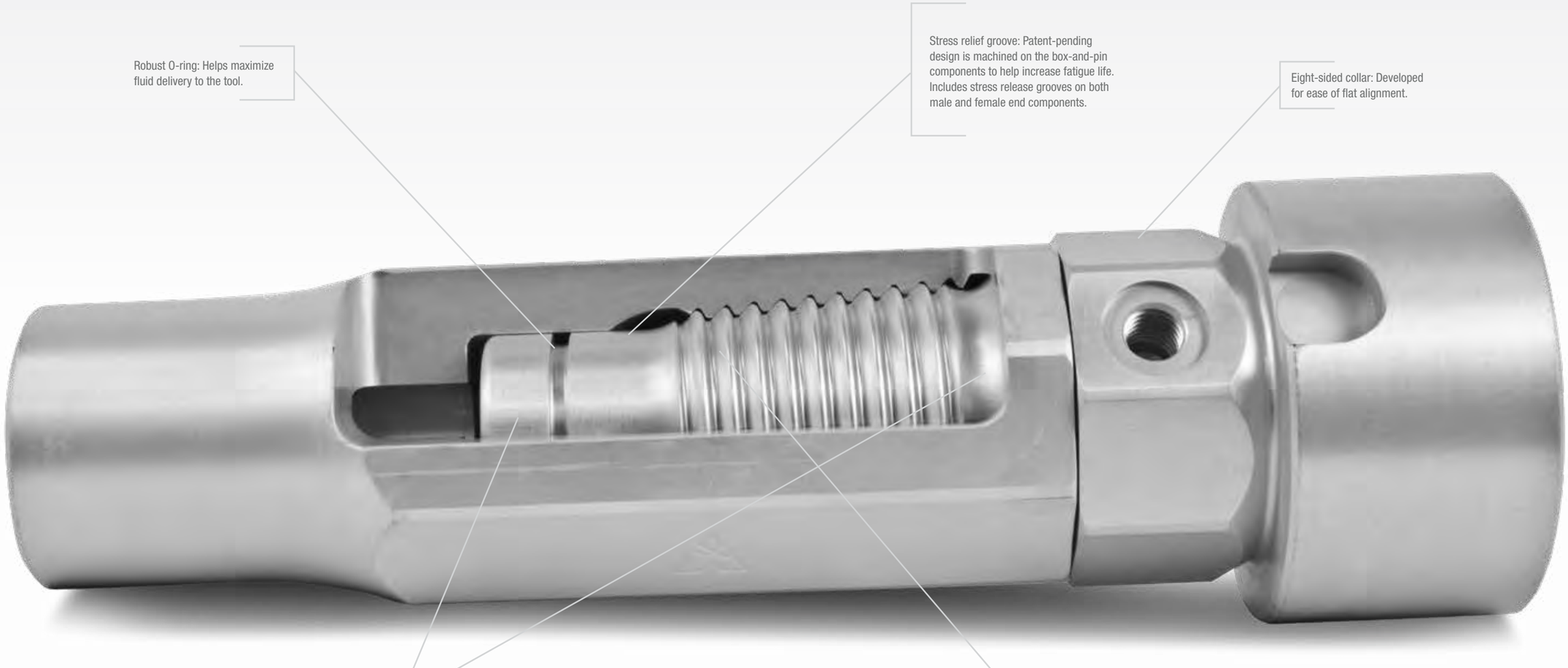
Silver Series drill rod

*Pricing may vary. Available at participating North American Vermeer dealers only.



QUICKFIRE®
CONNECTION SYSTEM

Each part includes a manufactured date and part number for convenient identification and traceability.



QUICKFIRE® HD CONNECTION SYSTEM

Building upon the 10-year legacy of the QuickFire® connection system, Vermeer now brings the QuickFire HD system to the marketplace. The QuickFire HD system offers ease of use and reliability-minded features within its design, including dual heavy-duty collar retention roll pins. With this connection style, the collar can now be assembled at any orientation — eliminating the need to rotate the collar for alignment with the retention bolt hole. While the QuickFire HD system shares the same thread profile as the original system, the pin is designed with a patented feature that helps transfer bending loads away from the thread profile to help extend wear life.



Available in three sizes for drilling rigs rated up to 5,500-ft-lb (7,457 Nm) of torque and manufactured with durable, high alloy 4340 material. Built tough for durability and reliability in your heavy-duty drilling applications.

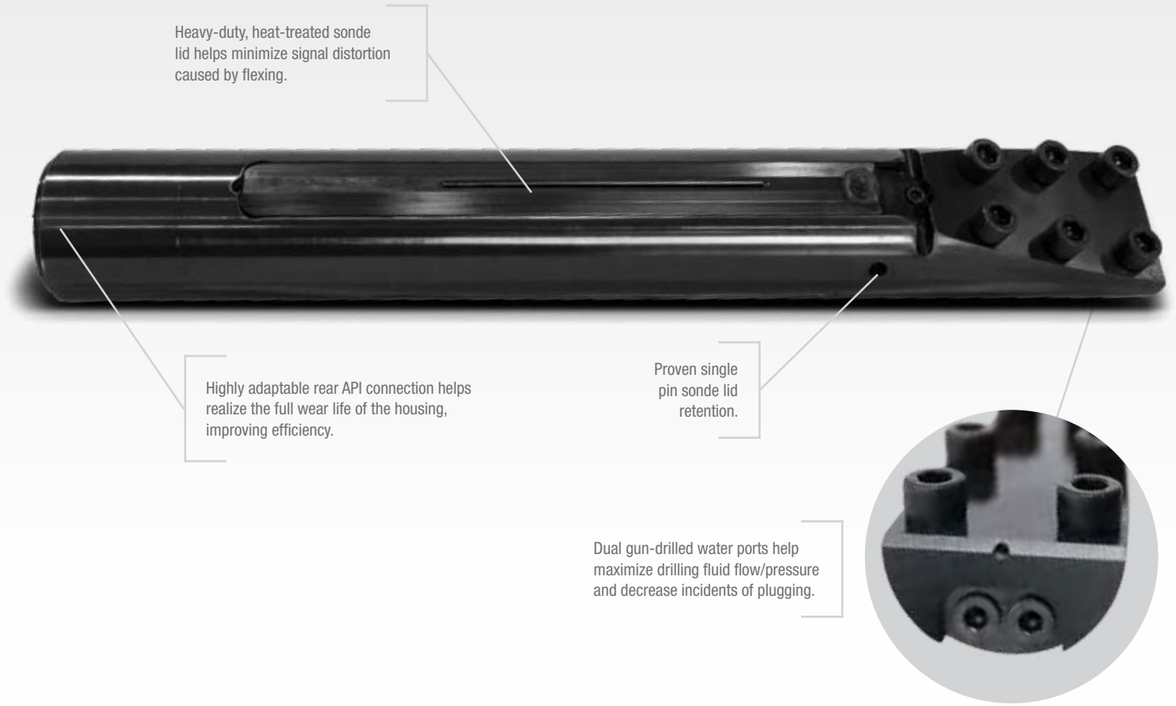


See how the quick, four-turn thread of the QuickFire HD connection system brings efficiency for this Midwest HDD crew.

PART NO.	PRODUCT
QUICKFIRE HD 300 | Intended for models like the Vermeer D10x15 S3 HDD or the Ditch Witch JT10	
296555466	Starter rod QuickFire HD system 300 (P) x 1.66-in FST #200 (B)
296560815	Collar QuickFire HD system 300 (hardfaced)
296555458	Collar QuickFire HD system 300 (hardfaced with teeth)
296560794	Adapter QuickFire HD system 300 (B) X 2-in API IF (P)
296555470	Adapter QuickFire HD system 300(B) X 2-4 ACME (P)
QUICKFIRE HD 400 | Intended for models like the Vermeer D23x30 S3 HDD or the Ditch Witch JT30	
296555446	Starter rod QuickFire HD 400 (P) x 1.90-in FST #250 (B)
296560814	Collar QuickFire HD system 400 (hardfaced)
296555283	Collar QuickFire HD system 400 (hardfaced with teeth)
296555451	Adapter QuickFire HD system 400 (B) x 2.375-in API Reg (P)
296555448	Starter rod QuickFire HD system 400 (P) x 2.06-in FST #400 (B)
296560814	Collar QuickFire HD system 400 (hardfaced)
296555283	Collar QuickFire HD system 400 (hardfaced with teeth)
296555451	Adapter QuickFire HD system 400 (B) x 2.375-in API Reg (P)
296555430	Starter rod QuickFire HD system 400 (P) x 2.375-in FST #600 (B)
296560814	Collar QuickFire HD system 400 (hardfaced)
296555283	Collar QuickFire HD system 400 (hardfaced with teeth)
296555451	Adapter QuickFire HD system 400 (B) x 2.375-in API Reg (P)
296555453	Adapter QuickFire HD system 400 (B) x 2.875-in API Reg (P)
296560755	Starter rod QuickFire HD system 460 (P) x 2.375-in FST #600 (B)
QUICKFIRE HD 400 | Intended for models like the Vermeer D40x55 S3 HDD or the Ditch Witch JT40	
296560816	Collar QuickFire HD system 460 (hardfaced)
296555475	Collar QuickFire HD system 460 (hardfaced with teeth)
296560761	Adapter QuickFire HD system 460 (B) x 2.375-in API Reg (P)
296560763	Adapter QuickFire HD system 460 (B) x 2.875-in API Reg (P)
296560796	Starter rod QuickFire HD system 460 (P) x2.375 FST #625 (P)
296560757	Starter rod QuickFire HD system 460 (P) x 2.375-in FST #650 (B)
296560816	Collar QuickFire HD system 460 (hardfaced)
296555475	Collar QuickFire HD system 460 (hardfaced with teeth)
296560761	Adapter QuickFire HD system 460 (B) x 2.375-in API Reg (P)
296560763	Adapter QuickFire HD system 460 (B) x 2.875-in API Reg (P)
296560813	Starter rod QuickFire system 460 (P) 2.625-in FST #750 (P)
296560811	Starter rod QuickFire HD system 460 (P) x 2.625-in FST #750 (B)
296560816	Collar QuickFire HD system 460 (hardfaced)
296555475	Collar QuickFire HD system 460 (hardfaced with teeth)
296560761	Adapter QuickFire HD system 460 (B) x 2.375-in API Reg (P)
296560763	Adapter QuickFire HD system 460 (B) x 2.875-in API Reg (P)

PREMIUM HOUSING

Premium housings from Vermeer integrate many of the robust and proven design characteristics of the rock-focused Armor drilling system into a versatile tool for soft to intermediate ground conditions.



PART NO.	OUTSIDE DIAMETER	SONDE	MODEL COMPATIBILITY	CONNECTION	BIT BOLT PATTERN
296408265	2.75 in (7 cm)	DCI 15-in (38.1-cm)	D6x6 – D10x15 S3	2-4 ACME box	Vermeer 6-hole – 1/2-in bolt
296448831	2.75 in (7 cm)	DCI 15-in (38.1-cm)	D6x6 – D10x15 S3	2-in API IF box	Vermeer 6-hole – 1/2-in bolt
296428729	2.75 in (7 cm)	DCI 19-in (48.3-cm)	D6x6 – D10x15 S3	2-4 ACME box	Vermeer 6-hole – 1/2-in bolt
296459727	2.75 in (7 cm)	SubSite 17T	JT5 – JT10	2-in API IF box	Vermeer 6-hole + Ditch Witch 6-hole – 1/2-in bolt
296408264	3 in (7.6 cm)	DCI 15-in (38.1-cm)	D16x20 – D24x40 S3	2.375-in API Reg box	Vermeer 6-hole – 1/2-in bolt
296428717	3 in (7.6 cm)	DCI 19-in (48.3-cm)	D16x20 – D24x40 S3	2.375-in API Reg box	Vermeer 6-hole – 1/2-in bolt
296428796	3 in (7.6 cm)	SubSite 17T	JT20 – JT25	2.375-in API Reg box	Vermeer 6-hole + Ditch Witch 6-hole – 1/2-in bolt
296406540	3.25 in (8.3 cm)	DCI 15-in (38.1-cm)	D24x40 S3 – D40x55 S3	2.375-in API Reg box	Vermeer 6-hole – 1/2-in bolt
296428722	3.25 in (8.3 cm)	DCI 19-in (48.3-cm)	D24x40 S3 – D40x55 S3	2.375-in API Reg box	Vermeer 6-hole – 1/2-in bolt
296459729	3.25 in (8.3 cm)	SubSite 17T	JT25 – JT40	2.375-in API Reg box	Vermeer 6-hole + Ditch Witch 6-hole – 1/2-in bolt
296408266	3.5 in (8.9 cm)	DCI 15-in (38.1-cm)	D60x90 – D80x100 Series II	2.875-in API Reg box	Vermeer 6-hole – 5/8-in bolt
296428725	3.5 in (8.9 cm)	DCI 19-in (48.3-cm)	D60x90 – D80x100 Series II	2.875-in API Reg box	Vermeer 6-hole – 5/8-in bolt
296459731	3.5 in (8.9 cm)	SubSite 17T	JT60	2.875-in API Reg box	Vermeer 6-hole – 5/8-in bolt
296408267	4.5 in (11.4 cm)	DCI 15-in (38.1-cm)	D100x120 – D100x140 S3	3.5-in API Reg box	Vermeer 6-hole – 3/4-in bolt
296428727	4.5 in (11.4 cm)	DCI 19-in (48.3-cm)	D100x120 – D100x140 S3	3.5-in API Reg box	Vermeer 6-hole – 3/4-in bolt
296456939	4.5 in (11.4 cm)	DCI 19-in (48.3-cm)	D100x120 – D100x140 S3	3.5-in API IF box	Vermeer 6-hole – 3/4-in bolt
296459733	4.5 in (11.4 cm)	SubSite 17T	JT100	3.5-in API Reg box	Vermeer 6-hole – 3/4-in bolt

ARMOR BOLT-ON BITS

Expand the capabilities of your Premium housing with the Armor bolt-on Gauntlet and Lance bits. Each feature similar bit designs from the rock-focused Armor drilling system. Armor bolt-on bits are only compatible with the Vermeer Premium housing lineup.



PART NO.	DESCRIPTION
296466146	3.5-in (8.9-cm) dia. Armor Gauntlet bit bolt-on for 2.75-in (7-cm) premium housing
296466148	4-in (10.2-cm) dia. Armor Gauntlet bit bolt-on for 3-in (7.6-cm) premium housing
296466147	3.5-in (8.9-cm) dia. Armor Lance bit bolt-on for 2.75-in (7-cm) premium housing
296466149	4-in (10.2-cm) dia. Armor Lance bit bolt-on for 3-in (7.6-cm) premium housing



VERMEER ACE™ BITS.
PICK THE BIT THAT'S IN IT FOR THE LONG HAUL.

Vermeer Ace bits provide durability and wearability. The plug-style tooth design of the Ace bit allows teeth to be positioned closer to each other.



Ace Standard drill bit

The standard bit features a rounded bit face to assist steering performance and offers durability, longevity and wearability for **softer ground conditions that are more abrasive, medium packed soils and light gravel**.

PART NO.	BOLT PATTERN	WIDTH
296415439	VM 6-hole – 1/2-in bolt	4 in (10.2 cm)
296415498	VM 6-hole – 1/2-in bolt	4.5 in (11.3 cm)
296415445	VM 6-hole – 1/2-in bolt	5 in (12.7 cm)
296415454	DW 5-hole – 12-mm bolt	4 in (10.2 cm)
296415451	DW 6-hole – 16-mm bolt	4 in (10.2 cm)
296415462	DW 5-hole – 12-mm bolt	5 in (12.7 cm)
296415459	DW 6-hole – 16-mm bolt	5 in (12.7 cm)



Ace Pro drill bit

A step up from our standard Ace bit, it features a semi-aggressive tapered front design for penetration in harder ground conditions — offering even greater durability, longevity and wearability to tackle **loam to moderately aggressive cobble, sand and hard pan**.

PART NO.	BOLT PATTERN	WIDTH
296449348	VM 5-hole – 3/8-in bolt	3 in (7.6 cm)
296415473	VM 6-hole – 1/2-in bolt	3.5 in (8.9 cm)
296415374	VM 6-hole – 1/2-in bolt	4 in (10.2 cm)
296415492	VM 6-hole – 1/2-in bolt	4.5 in (11.4 cm)
296415394	VM 6-hole – 1/2-in bolt	5 in (12.7 cm)
296449499	DW 3-hole – 12-mm bolt	3 in (7.6 cm)
296415417	DW 5-hole – 12-mm bolt	4 in (10.2 cm)
296415420	DW 6-hole – 16-mm bolt	4 in (10.2 cm)
296415448	DW 5-hole – 12-mm bolt	5 in (12.7 cm)
296415426	DW 6-hole – 16-mm bolt	5 in (12.7 cm)



Ace Pro Extreme drill bit

Sharing the same profile of the Ace Pro, the Ace Pro Extreme bit balances steerability and penetration. Features two times the carbide teeth along the full edge of the bit to help extend wear life in **cobble, hard pan and light rock.**

PART NO.	BOLT PATTERN	WIDTH
296537785	VM 5-hole – 3/8-in bolt	3 in (7.6 cm)
296537784	VM 6-hole – 1/2-in bolt	3.5 in (8.9 cm)
296537783	VM 6-hole – 1/2-in bolt	4 in (10.2 cm)
296537782	VM 6-hole – 1/2-in bolt	4.5 in (11.3 cm)
296537781	VM 6-hole – 1/2-in bolt	5 in (12.7 cm)
296537900	DW 6-hole – 16-mm bolt	4 in (10.2 cm)
296537903	DW 6-hole – 16-mm bolt	5 in (12.7 cm)



Domed button-style tooth is designed to absorb the shock of harder conditions.

Ace Premium drill bit

The Premium Ace bit features an aggressive tapered bit front to help penetration rates and offers superior durability, longevity and wearability for high risk, aggressive ground conditions such as **heavy cemented cobble, hard packed soils and softer shale**.

PART NO.	BOLT PATTERN	WIDTH
296449347	VM 6-hole – 1/2-in bolt	4 in (10.2 cm)
296449341	VM 6-hole – 1/2-in bolt	4.5 in (11.3 cm)
296449344	VM 6-hole – 1/2-in bolt	5 in (12.7 cm)
296449345	DW 5-hole – 12-mm bolt	4 in (10.2 cm)
296449346	DW 6-hole – 16-mm bolt	4 in (10.2 cm)
296449342	DW 5-hole – 12-mm bolt	5 in (12.7 cm)
296449343	DW 6-hole – 16-mm bolt	5 in (12.7 cm)



Bit bolts

PART NO.	DESCRIPTION	HOUSING COMPATIBILITY
512006	3/8-in Bolt	2-in (5.1-cm) – 2.25-in (5.7-cm) OD
129667010	1/2-in Bolt	2.75-in (7-cm) – 3.25-in (8.3-cm) OD
296260026	5/8-in Bolt	3.5-in (8.9-cm) OD
85627055	3/4-in Bolt	4.5-in (11.4-cm) OD

Don't see what you're looking for? Talk to your local Vermeer dealer for more information and options for competitor compatibilities.

DRILL BITS

Vermeer drill bits are, in a word, tough. They start with Vermeer-specified high-alloy, heat-treated steel for durability and wear-resistance. Each bit is designed to meet the exacting tolerances for Vermeer HDDs to help maintain peak performance.

Standard hardfaced drill bit

PART NO.	BOLT PATTERN	WIDTH
272446001	VM 5-hole – 3/8-in bolt	2.25 in (5.7 cm)
296274213	VM 5-hole – 3/8-in bolt	2.5 in (6.4 cm)
296274214	VM 5-hole – 3/8-in bolt	3 in (7.6 cm)
296274215	VM 5-hole – 3/8-in bolt	3.5 in (8.9 cm)
246798001	VM 6-hole – 1/2-in bolt	3 in (7.6 cm)
246799001	VM 6-hole – 1/2-in bolt	3.5 in (8.9 cm)
296255334	VM 6-hole – 1/2-in bolt	4 in (10.2 cm)
296255335	VM 6-hole – 1/2-in bolt	4.5 in (11.4 cm)
296255336	VM 6-hole – 1/2-in bolt	5 in (12.7 cm)
296255340*	VM 6-hole – 5/8-in bolt	5 in (12.7 cm)
296255341*	VM 6-hole – 5/8-in bolt	6 in (15.2 cm)
296449302	DW 5-hole – 12-mm bolt	4 in (10.2 cm)
296449295	DW 6-hole – 16-mm bolt	4 in (10.2 cm)
296449300	DW 5-hole – 12-mm bolt	5 in (12.7 cm)
296449296	DW 6-hole – 16-mm bolt	5 in (12.7 cm)

*Does not include quickshot hole.



Gladiator Saber bit

The Gladiator Saber bit features an aggressive tapered design for penetrating hard-packed soil conditions. Includes the Gladiator bit standard of carbide buttons to help extend wear life, making it ready for **highly abrasive ground conditions**.

PART NO.	BOLT PATTERN	WIDTH
296341835	6-hole – 1/2-in bolt	4 in (10.2 cm)
296341836	6-hole – 1/2-in bolt	4.5 in (11.4 cm)
296341837	6-hole – 1/2-in bolt	5 in (12.7 cm)



Don't see what you're looking for? Talk to your local Vermeer dealer for more information and options for competitor compatibilities.

Gladiator Spear bit

The Gladiator Spear bit is exclusively designed with oversized carbide buttons to help reduce premature wear — with a rugged, pointed design. The Gladiator spear bit lets you battle compatible ground conditions from **loam to cobble and other highly abrasive soil**.

PART NO.	BOLT PATTERN	WIDTH
296334309	6-hole – 1/2-in bolt	3.5 in (8.9 cm)
296334328	6-hole – 1/2-in bolt	4 in (10.2 cm)
296334306	6-hole – 1/2-in bolt	4.5 in (11.4 cm)
296334359	6-hole – 1/2-in bolt	5 in (12.7 cm)
296419299	6-hole – 1/2-in bolt	6 in (15.2 cm)



Gladiator Mallet bit

Steer into the clear with the Gladiator Mallet bit. It features the Gladiator-exclusive bit design with oversized carbide buttons for wear resistance as its flat face helps maximize steering control. It's ideal for **cobble and highly abrasive ground conditions**.

PART NO.	BOLT PATTERN	WIDTH
296334312	6-hole – 1/2-in bolt	3.5 in (8.9 cm)
296334324	6-hole – 1/2-in bolt	4 in (10.2 cm)
296334303	6-hole – 1/2-in bolt	4.5 in (11.4 cm)
296334356	6-hole – 1/2-in bolt	5 in (12.7 cm)



Gladiator Club bit

The Vermeer Gladiator Club bit brings you the power of our exclusively designed oversized carbide buttons for wear resistance. This versatile series is ideal for **cobble and highly abrasive ground conditions**.

PART NO.	BOLT PATTERN	WIDTH
296334350	6-hole – 1/2-in bolt	3.5 in (8.9 cm)
296334326	6-hole – 1/2-in bolt	4 in (10.2 cm)
296334300	6-hole – 1/2-in bolt	4.5 in (11.4 cm)
296334353	6-hole – 1/2-in bolt	5 in (12.7 cm)
296419303	6-hole – 1/2-in bolt	6 in (15.2 cm)



ULTRA X3 DRILLING SYSTEM

The needs of tomorrow's jobsites are quickly evolving. With this in mind, Vermeer introduces the Ultra X3 drilling system. The Ultra X3 offers interchangeable pilot and pullback tooling without torqued or threaded components, as well as the ability to ream directly off the transmitter housing. And (for certain applications), it can eliminate the expense of starter rods and adapters. The Ultra X3 has a strong spline connection capable of handling the torque of reaming diameters up to 10 inches (25 cm) directly off the transmitter housing in most conditions. This housing comes in three sizes, and is available for rigs up to 40,000 pounds (18,143.6 kg). The Ultra X3 housing unit is versatile and worth its weight.



PART NO.	PRODUCT
ULTRA X3 275	INTENDED FOR MODELS LIKE THE VERMEER D10X15 S3 HDD OR THE DITCH WITCH JT10
296566776	Ultra X3 275 housing 2.75-in (7-cm) OD x 2-in API IF (B)
296566803	Ultra X3 275 Lance Pro bit - 3.5-in (9-cm) cut with pullback hook
296566780	Ultra X3 275 Lance Trident bit - 3.5-in (9-cm) cut with pullback hook
296566774	Ultra X3 275 Gauntlet bit - 3.5-in (9-cm) cut with pullback hook
296569556	Ultra X3 275 single roller cone bit - 3.5-in (9-cm) cut
296566772	Ultra X3 275 plate bit sub - Vermeer .5-in 6-bolt pattern
296569603	Ultra X3 275 weld-on reamer adapter
296569553	Ultra X3 275 pull eye (for use with swivels 296496479 or 296496480)
296569570	Ultra X3 275 6-in (15-cm) fluted reamer x pull eye (for use with swivels 296496479 or 296496480)
296569572	Ultra X3 275 8-in (20-cm) fluted reamer x pull eye (for use with swivels 296496479 or 296496480)
296569566	Ultra X3 275 6-in (15-cm) mix reamer x pull eye (for use with swivels 296496479 or 296496480)
296569574	Ultra X3 275 8-in (20-cm) mix reamer x pull eye (for use with swivels 296496479 or 296496480)
ULTRA X3 325	INTENDED FOR MODELS LIKE THE VERMEER D24X40 S3 HDD OR THE DITCH WITCH JT24
296555441	Ultra X3 325 housing 3.25-in (8-cm) OD x 2.375-in API Reg (B)
296566924	Ultra X3 325 Lance Pro bit - 4.25-in (11-cm) cut with pullback hook
296566925	Ultra X3 325 Gauntlet bit - 4.25-in (11-cm) cut with pullback hook
296566930	Ultra X3 325 single roller cone bit - 4.25-in (11-cm) cut
296544190	Ultra X3 325 plate bit sub - Vermeer .5-in 6-bolt pattern
296566927	Ultra X3 325 weld-on reamer adapter
296566935	Ultra X3 325 pull eye (for use with swivel 296496480)
296566929	Ultra X3 325 6-in (15-cm) fluted reamer x pull eye (for use with swivel 296496480)
296566940	Ultra X3 325 8-in (20-cm) fluted reamer x pull eye (for use with swivel 296496480)
296566938	Ultra X3 325 10-in (25-cm) fluted reamer x pull eye (for use with swivel 296496480)
296566931	Ultra X3 325 6-in (15-cm) mix reamer x pull eye (for use with swivel 296496480)
296566941	Ultra X3 325 8-in (20-cm) mix reamer x pull eye (for use with swivel 296496480)
296566942	Ultra X3 325 10-in (25-cm) mix reamer x pull eye (for use with swivel 296496480)
ULTRA X3 375	INTENDED FOR MODELS LIKE THE VERMEER D40X55 S3 HDD OR THE DITCH WITCH JT40
296566842	Ultra X3 375 housing 3.75-in (10-cm) OD x 2.875-in API Reg (B)
296566864	Ultra X3 375 Lance Pro bit - 5-in (12.5-cm) cut with pullback hook
296566868	Ultra X3 375 Gauntlet bit - 5.5-in (14-cm) cut with pullback hook
296569561	Ultra X3 375 single roller cone bit - 5.5-in (14-cm) cut
296566858	Ultra X3 375 plate bit sub - Vermeer .5-in 6-bolt pattern
296566852	Ultra X3 375 plate bit sub - Vermeer .625-in 6-bolt pattern
296569604	Ultra X3 375 weld-on reamer adapter
296569563	Ultra X3 375 pull eye (for use with swivel 296500583)
296569592	Ultra X3 375 8-in (20-cm) fluted reamer x pull eye (for use with swivel 296500583)
296569594	Ultra X3 375 10-in (25-cm) fluted reamer x pull eye (for use with swivel 296500583)
296569602	Ultra X3 375 12-in (30-cm) fluted reamer x pull eye (for use with swivel 296500583)
296569597	Ultra X3 375 8-in (20-cm) mix reamer x pull eye (for use with swivel 296500583)
296569595	Ultra X3 375 10-in (25-cm) mix reamer x pull eye (for use with swivel 296500583)
296569596	Ultra X3 375 12-in (30-cm) mix reamer x pull eye (for use with swivel 296500583)



See how the new Ultra X3 system helps takes productivity to the next level for this crew.

DESIGNED **WITH YOU IN MIND.**



ARMOR DRILLING SYSTEM

Prepare to win the tough jobs with the Armor drilling system from Vermeer. It's a single HDD tooling system with multiple drilling options designed to provide versatility and performance — one housing, multiple bits.

BRING YOUR BIT **BACK TO LIFE.**

Every operator understands the value of the bits they use on the jobsite. Now, help extend the usable life of your bits with the Armor drilling system rebuild program. Send in your worn-down bits for rebuild by the manufacturer: Vermeer. Depending on the type of wear exhibited, Armor bits can be rebuilt multiple times. Before the rebuild process begins, every Armor bit will be reviewed by the Vermeer team of HDD tooling engineers and will undergo a comprehensive analysis by staff metallurgists.

Contact your local Vermeer dealer for more information on the Armor drilling system rebuild program.

Small Armor 2.375-in API REG (D16x20-D24x40 S3)

PART NO.	DESCRIPTION
296466151	Armor housing system 3.25-in (8.3-cm) OD, 2.375-in API Reg Box
296344406	Armor sonde lid kit (lid, roll pins)
296428974	Armor bit hardware kit (solid pin, O-rings, capscrews)
296466222	Armor Gauntlet bit – 4.25-in (10.8-cm) with pullback
296496183	Armor Gauntlet bit small pullback hook
296371274	Armor Gauntlet bit tooth – medium rock
296386883	Armor Gauntlet bit tooth – soft rock
296456950	Armor Lance Pro bit – 4.25-in (10.8-cm) with pullback
296540851	Lance (Pro or Original) bit small pullback hook
296456809	Armor Lance Original bit – 4.25-in (10.8-cm) with pullback
296428590	Pullback mount assembly
296428584	Armor single roller cone bit – 4.25-in (10.8-cm)
296428588	Armor bent sub adapter – 2.375-in API Reg
296428587	Armor pullback swivel – 24,000 lb (10,866.2-kg) rated
296479206	6-in (15.2-cm) Armor fluted reamer, rotary teeth, 24k pull eye
296496040	6-in (15.2-cm) Armor fluted reamer, rotary teeth, 24k swivel
296530680	8-in (20.3-cm) Armor fluted reamer, rotary teeth, 24k swivel

Medium Armor 2.875-in API REG (D24x40-D40x55DR)

PART NO.	DESCRIPTION
296466152	Armor side load housing system – 3.75-in (9.5-cm) OD, 2.875-in API
296344404	Armor sonde lid kit (Lid, Roll pins)
296428973	Armor Bit hardware kit
296456837	Armor Gauntlet bit – 5.5-in (14-cm) with pullback
296540854	Armor Gauntlet bit medium pullback hook
296352129	Armor Gauntlet bit tooth – medium rock
296352180	Armor Gauntlet bit tooth – soft rock
296456953	Armor Lance Pro bit 5-in (12.7-cm) with pullback
296540853	Armor Lance (Pro or Original) bit medium pullback hook
296456845	Armor Lance Original bit – 5-in (12.7-cm) with pullback
296428636	Pullback mount assembly
296428619	Armor single roller cone bit – 4.25-in (10.8-cm)
296428612	Armor bent sub adapter – 2.875-in API Reg
296428610	Armor swivel – 24,000 lb (10,866.2-kg) rated
296479204	6-in (15.2-cm) Armor fluted reamer, rotary teeth, 24k pull eye
296488188	6-in (15.2-cm) Armor fluted reamer, rotary teeth, 24k swivel
296493470	6-in (15.2-cm) Armor fluted reamer, rotary teeth, 24k swivel
296530678	8-in (20.3-cm) Armor fluted reamer, rotary teeth, 24k swivel

Large Armor 2.875-in API IF (D50x100-D100x43 S3)

PART NO.	DESCRIPTION
296466153	Armor housing system 4.25-in (10.8-cm) OD, 2.875-in API IF
296344404	Armor sonde lid kit
296428972	Armor bit hardware kit (solid pin, O-rings, capscrews)
296488183	Armor Gauntlet bit – 6.5-in (16.5-cm)
296341728	Armor Gauntlet bit tooth – medium rock
296392367	Armor Gauntlet bit tooth – soft rock
296484008	Armor Lance Pro bit – 6.25-in (15.8-cm)
296484086	Armor Lance Pro bit – 7.25-in (18.4-cm)
296341742	Armor Lance Original bit – 6.5-in (16.5-cm)
296341747	Armor Lance Original bit – 7.25-in (18.4-cm)
296396008	Armor single roller cone bit – 6.5-in (16.5-cm)
296396011	Armor bent sub adapter – 3.5-in API Reg

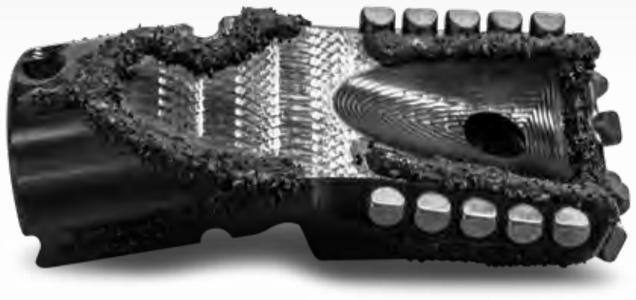
Armor Accessories

PART NO.	DESCRIPTION
296344264	Armor multi-tool small and medium
296392362	Armor multi-tool large
296344402	Armor sonde isolator and timing kit
296412939	Armor timing key – steel



Gauntlet bit

The Gauntlet bit was designed for use in **soft to medium rock, shale and caliche** ground conditions up to 10,000 psi (68.9 MPa) with exceptional steering capabilities. Carbide buttons and hardfacing are strategically placed on the bit to enhance wear and performance characteristics. A replaceable three-tooth design delivers a consistent cutting structure for steering corrections to help maximize drilling performance.



Lance Original bit

The Lance Original bit is intended for use in **hard-packed soil, gravel and cobble.** The bit features a scoop design for steering capabilities and operator control to help limit wandering in challenging ground conditions. Carbide buttons and robotically applied hardfacing help improve overall bit wear in most abrasive drilling conditions.

Bits designed to be compatible with multiple drilling systems.



Lance Pro bit

Featuring domed, plug-style teeth, the Lance Pro bit offers continuous carbide coverage across the front of the bit to help extend wear life. **Carbide buttons help protect the bit mount section from wear so it can be rebuilt.** With a tendency to cut on center, the Lance Pro bit helps you execute your bore as planned.



Single roller cone bit

Designed to deliver versatility in cobble and broken formations, the cone rotation helps smooth out the entire drill string, minimizing torque spikes. The bit is used for **extreme cobbles and soft to medium rock.**



API bent sub adaptor

For use in tandem with any API pin bit, including tricone and PDC configurations.

RESPONSIVE DOWNHOLE STEERING FOR ROCK BORES.

To get the most from your dual-rod HDD, choose rock drill heads designed to deliver an efficient performance. Vermeer RH15 and RH10 rock drill heads were developed in conjunction with the D40x55DR S3 and D23x30DR S3 horizontal directional drills to give operators steering control and sonde security with its proven single roll pin lid. These greasable rock drill heads can be rebuilt in the field and are priced right to deliver value.



Talk to your local dealer for tricone and PDC bit options.

PART NO.	DESCRIPTION	MODEL COMPATIBILITY
296490378	RH10 drill head 15-in (38.1-cm) sonde, 2.875-in API Reg bit box, 5.5-in (14-cm) dia. min. bit	D23x30DR S3
296529337	RH10 drill head 15-in (38.1-cm) sonde, 2.875-in API Reg bit box, 5.5-in (14-cm) dia. min. bit*	JT3020 AT, JT30 AT
296537909	RH10 50-hour rebuild kit	
296537911	RH10 200-hour rebuild kit	
296514826	RH10 drill head rebuild tool kit	
296521054	PG5 quick pullback grapple for 5.5-in (14-cm) Tricone bits	
296479658	RH15 drill head 15-in (38.1-cm) Sonde, 3.5-in API bit box, 6.25-in (15.9-cm) dia. min. bit	D40x55DR S3
296490296	RH15 drill head 19-in (48.3-cm) Sonde, 3.5-in API bit box, 6.25-in (15.9-cm) dia. min. bit	D40x55DR S3
296479686	RH15 drill head 15-in (38.1-cm) Sonde, 3.5-in API bit box, 6.25-in (15.9-cm) dia. min. bit	D36x50DR Series II
296490300	RH15 drill head 19-in (48.3-cm) Sonde, 3.5-in API bit box, 6.25-in (15.9-cm) dia. min. bit	D36x50DR Series II
296490302	RH15 50 hour rebuild kit	
296490303	RH15 200 hour rebuild kit - 15-in (38.1-cm) Sonde (For 296479658, 296479686)	
296490305	RH15 200 hour rebuild kit - 19-in (48.3-cm) Sonde (For 296490296, 296490300)	
296479732	RH15 drill head rebuild tool kit	
296514927	PG6 quick pullback grapple for 6.25-in (15.9-cm) Tricone Bits	
101562004	Vermeer polyurea grease (10-pack)	

* Does not include hex coupler

PG5/PG6 pullback grapples







See what it takes to rebuild the RH15 dual-road drill head.



DIRECT WITH **API THREAD PLATFORM SOLUTION.**

The Vermeer Armor Direct system allows drilling crews to use bits from the Armor system on an API thread platform. Designed to be an economical rock drilling solution, the Armor Direct system offerings include a new universal housing with single pin sonde lid retention; the Lance Pro bit for hard-packed gravel and cobble; the Gauntlet bit for soft rock, medium rock, shale and caliche up to 10,000 pounds per square inch (68.9 MPa); and the Vermeer single roller cone bit for cobble and broken formations.

PART NO.	DESCRIPTION	MODEL COMPATIBILTY
296520797	Armor Direct universal housing 2.375-in API Reg BxB, 15-in or 19-in DCI	D16x20 – D24x40 S3
296520790	4.25-in (10.8-cm) Lance Pro bit x 2.375-in API Reg	D16x20 – D24x40 S3
296488122	4.25-in (10.8-cm) Armor Gauntlet bit x 2.375-in API Reg	D16x20 – D24x40 S3
296520804	4.25-in (10.8-cm) Armor single roller cone x 2.375-in API Reg bit	D16x20 – D24x40 S3
296257756	Dirt bit sub - Vermeer .5-in 6-bolt bit x 2.375-in API Reg	D16x20 – D24x40 S3
296517138	Armor Direct universal housing 2.875-in API Reg BxB, 15-in or 19-in DCI	D24x40 – D40x55 S3
296517122	5-in (12.7-cm) Lance Pro bit x 2.875-in API Reg	D24x40 – D40x55 S3
296484199	5.5-in (14-cm) Armor Gauntlet bit x 2.875-in API Reg	D24x40 – D40x55 S3
296517142	5.5-in (14-cm) Armor single roller cone x 2.875-in API Reg bit	D24x40 – D40x55 S3
296268770	Dirt bit sub - Vermeer .63-in 6-bolt bit x 2.875-in API Reg bit	D24x40 – D40x55 S3
296517018	Armor Direct universal housing 3.5-in API Reg BxB, 15-in or 19-in DCI	D60x90 – D100x140 S3
296517046	7.25-in (18.4-cm) Lance Pro bit x 3.5-in API Reg	D60x90 – D100x140 S3
296488132	6.5-in (16.5-cm) Armor Gauntlet bit x 3.5-in API Reg	D60x90 – D100x140 S3
296517042	6.5-in (16.5-cm) Armor single roller cone x 3.5-in API Reg bit	D60x90 – D100x140 S3
296259972	Dirt bit sub - Vermeer .63-in 6-bolt bit x 3.5-in API Reg bit	D60x90 – D100x140 S3



HDD TOOLING SCIENCE — **VERMEER METALLURGY LAB TEST**

Just because one brand of tooling may look like another doesn't mean it's constructed the same. From drive chucks and drill rod, to transmitter housings, drill bits, reamers and adaptors, the quality of the metal used and how it was heat-treated can have a major impact on how it will perform and how long it can last in harsh working conditions. To make sure parts and pieces of HDD tooling produced meets high standards, Vermeer is one of the only manufacturers in the industry to invest in building its own metallurgy lab and staff it with experienced, degreed metallurgists.

Since 1992, the Vermeer Metallurgy Lab has been testing the chemical composition, tensile strength, hardness and impact toughness of Vermeer HDD tooling, parts and components. Using scientific methods, the Vermeer Metallurgy Lab examines the raw material used for manufacturing to determine quality, to help the productivity and longevity of the tooling.

Talk to your local Vermeer dealer to learn more.

EFFICIENCY ON THE JOB WITH **VERMEER PRODUCTIVITY TOOLS**

On the drill or at the office, Vermeer productivity tools make it easy to access information about your HDD machines and projects.

Find your jobsite solution by visiting store.vermeer.com.

Talk to your local Vermeer dealer to learn more.

REAMERS

Vermeer puts its full range of reamer solutions to work for you. From the tried-and-true to pioneering designs, our lineup is ready to handle a wide variety of ground conditions you run into. As always, with Vermeer you can expect a world-class product offering to help meet your needs. Plus, when you come across the unexpected, you can rely on us for customized tooling options to meet specific applications, ground conditions and, of course, your personal preferences.

Fluted reamer

Our fluted reamers get the job done with a robust through-shaft design and heat-treated, cast-alloy steel for durability. To help reduce the amount of resistance-causing spoil buildup, a built-in swivel minimizes the distance to the product pipe. Vermeer fluted reamers include robotically applied carbide mesh grit hardfacing for longevity. And they're available with rotary or shark teeth to create an aggressive cutting action. Ideal for rugged ground conditions ranging from **hard pan and soft rock to cobble.**



Standard threaded ports offer versatility in adjusting drilling fluid flow.

Fluted with eye – Shark teeth

PART NO.	MODEL COMPATIBILITY	FRONT CONNECTION	REAR CONNECTION	CUTTING SIZE	PULL EYE/PULL EYE CAPACITY
296341430	D6x6 – D10x15 S3	QuickFire system 300 pin	Pull eye	4.5 in (11.4 cm)	24,000 lb (10,886.2 kg)
296341431	D16x20 – D24x40 S3	QuickFire system 400 pin	Pull eye	4.5 in (11.4 cm)	24,000 lb (10,886.2 kg)
296341432	D6x6 – D10x15 S3	1.625-in hex pin	Pull eye	4.5 in (11.4 cm)	24,000 lb (10,886.2 kg)
296341433	D16x20 – D24x40 S3	2.125-in hex pin	Pull eye	4.5 in (11.4 cm)	24,000 lb (10,886.2 kg)
296341434	D7x11 – D24x40 S3	2.375-in API Reg box	Pull eye	6 in (15.2 cm)	24,000 lb (10,886.2 kg)
296341435	D7x11 – D24x40 S3	2.375-in API Reg box	Pull eye	8 in (20.3 cm)	24,000 lb (10,886.2 kg)
296341436	D7x11 – D24x40 S3	2.375-in API Reg box	Pull eye	10 in (25.4 cm)	24,000 lb (10,886.2 kg)
296341437	D7x11 – D24x40 S3	2.375-in API Reg box	Pull eye	12 in (30.5 cm)	24,000 lb (10,886.2 kg)
296341438	D7x11 – D24x40 S3	2.375-in API Reg box	Pull eye	14 in (35.6 cm)	24,000 lb (10,886.2 kg)
296341439	D7x11 – D24x40 S3	2.375-in API Reg box	Pull eye	16 in (40.6 cm)	24,000 lb (10,886.2 kg)
235095001	Replacement Shark teeth – 1.25-in (3.2-cm) weld-on				

Fluted with eye – Rotary teeth

PART NO.	MODEL COMPATIBILITY	FRONT CONNECTION	REAR CONNECTION	CUTTING SIZE	PULL EYE/PULL EYE CAPACITY
296341440	D6x6 – D10x15 S3	QuickFire system 300 pin	Pull eye	4.5 in (11.4 cm)	24,000 lb (10,886.2 kg)
296341441	D16x20 – D24x40 S3	QuickFire system 400 pin	Pull eye	4.5 in (11.4 cm)	24,000 lb (10,886.2 kg)
296341442	D6x6 – D10x15 S3	1.625-in hex pin	Pull eye	4.5 in (11.4 cm)	24,000 lb (10,886.2 kg)
296341443	D16x20 – D24x40 S3	2.125-in hex pin	Pull eye	4.5 in (11.4 cm)	24,000 lb (10,886.2 kg)
296341444	D7x11 – D24x40 S3	2.375-in API box	Pull eye	6 in (15.2 cm)	24,000 lb (10,886.2 kg)
296341445	D7x11 – D24x40 S3	2.375-in API box	Pull eye	8 in (20.3 cm)	24,000 lb (10,886.2 kg)
296341446	D7x11 – D24x40 S3	2.375-in API box	Pull eye	10 in (25.4 cm)	24,000 lb (10,886.2 kg)
296341447	D7x11 – D24x40 S3	2.375-in API box	Pull eye	12 in (30.5 cm)	24,000 lb (10,886.2 kg)
296341448	D7x11 – D24x40 S3	2.375-in API box	Pull eye	14 in (35.6 cm)	24,000 lb (10,886.2 kg)
296341449	D7x11 – D24x40 S3	2.375-in API box	Pull eye	16 in (40.6 cm)	24,000 lb (10,886.2 kg)
227684001	Replacement Rotary teeth – standard weld-on				

Fluted with swivel – Shark teeth

PART NO.	MODEL COMPATIBILITY	FRONT CONNECTION	REAR CONNECTION	CUTTING SIZE	PULL EYE/PULL EYE CAPACITY
296341426	D6x6 – D10x15 S3	QuickFire system 300 pin	Swivel	4.5 in (11.4 cm)	24,000 lb (10,886.2 kg)
296341427	D16x20 – D24x40 S3	QuickFire system 400 pin	Swivel	4.5 in (11.4 cm)	24,000 lb (10,886.2 kg)
235058001	D7x11 – D24x40 S3	1.625-in hex pin	Swivel	4.5 in (11.4 cm)	24,000 lb (10,886.2 kg)
235063001	D7x11 – D24x40 S3	2.125-in hex pin	Swivel	4.5 in (11.4 cm)	24,000 lb (10,886.2 kg)
296258154	D7x11 – D24x40 S3	2.375-in API Reg box	Swivel	6 in (15.2 cm)	24,000 lb (10,886.2 kg)
296258156	D7x11 – D24x40 S3	2.375-in API Reg box	Swivel	8 in (20.3 cm)	24,000 lb (10,886.2 kg)
296260059	D7x11 – D24x40 S3	2.375-in API Reg box	Swivel	10 in (25.4 cm)	24,000 lb (10,886.2 kg)
296260061	D7x11 – D24x40 S3	2.375-in API Reg box	Swivel	12 in (30.5 cm)	24,000 lb (10,886.2 kg)
296260063	D7x11 – D24x40 S3	2.375-in API Reg box	Swivel	14 in (35.6 cm)	24,000 lb (10,886.2 kg)
296260065	D7x11 – D24x40 S3	2.375-in API Reg box	Swivel	16 in (40.6 cm)	24,000 lb (10,886.2 kg)
235095001	Replacement Shark teeth – 1.25-in (3.2-cm) weld-on				

Fluted with swivel – Rotary teeth

PART NO.	MODEL COMPATIBILITY	FRONT CONNECTION	REAR CONNECTION	CUTTING SIZE	PULL EYE/PULL EYE CAPACITY
296341428	D6x6 – D10x15 S3	QuickFire system 300 pin	Swivel	4.5 in (11.4 cm)	24,000 lb (10,886.2 kg)
296341429	D16x20 – D24x40 S3	QuickFire system 400 pin	Swivel	4.5 in (11.4 cm)	24,000 lb (10,886.2 kg)
235013001	D6x6 – D10x15 S3	1.625-in hex pin	Swivel	4.5 in (11.4 cm)	24,000 lb (10,886.2 kg)
232555001	D7x11 – D24x40 S3	2.125-in hex pin	Swivel	4.5 in (11.4 cm)	24,000 lb (10,886.2 kg)
296258153	D7x11 – D24x40 S3	2.375-in API Reg box	Swivel	6 in (15.2 cm)	24,000 lb (10,886.2 kg)
296258155	D7x11 – D24x40 S3	2.375-in API Reg box	Swivel	8 in (20.3 cm)	24,000 lb (10,886.2 kg)
296260058	D7x11 – D24x40 S3	2.375-in API Reg box	Swivel	10 in (25.4 cm)	24,000 lb (10,886.2 kg)
296260060	D7x11 – D24x40 S3	2.375-in API Reg box	Swivel	12 in (30.5 cm)	24,000 lb (10,886.2 kg)
296260062	D7x11 – D24x40 S3	2.375-in API Reg box	Swivel	14 in (35.6 cm)	24,000 lb (10,886.2 kg)
296260064	D7x11 – D24x40 S3	2.375-in API Reg box	Swivel	16 in (40.6 cm)	24,000 lb (10,886.2 kg)
227684001	Replacement Rotary teeth – standard weld-on				

Fluted with swivel – Rotary teeth

PART NO.	MODEL COMPATIBILITY	FRONT CONNECTION	REAR CONNECTION	CUTTING SIZE	PULL EYE/PULL EYE CAPACITY
296341450	D36x50 – D60x90 S3	2.875-in API Reg box	Swivel	10 in (25.4-cm)	50,000 lb (22,679.6 kg)
296341451	D36x50 – D60x90 S3	2.875-in API Reg box	Swivel	12 in (30.5-cm)	50,000 lb (22,679.6 kg)
296341452	D36x50 – D60x90 S3	2.875-in API Reg box	Swivel	14 in (35.6-cm)	50,000 lb (22,679.6 kg)
296341453	D36x50 – D60x90 S3	2.875-in API Reg box	Swivel	16 in (40.6-cm)	50,000 lb (22,679.6 kg)
296341454	D36x50 – D60x90 S3	2.875-in API Reg box	Swivel	18 in (45.7-cm)	50,000 lb (22,679.6 kg)
296341455	D36x50 – D60x90 S3	2.875-in API Reg box	Swivel	20 in (50.8-cm)	50,000 lb (22,679.6 kg)
296341456	D36x50 – D60x90 S3	2.875-in API Reg box	Swivel	22 in (55.9-cm)	50,000 lb (22,679.6 kg)
296341457	D36x50 – D60x90 S3	2.875-in API Reg box	Swivel	24 in (61-cm)	50,000 lb (22,679.6 kg)
296341458	D36x50 – D60x90 S3	2.875-in API Reg box	Swivel	26 in (66-cm)	50,000 lb (22,679.6 kg)
296341459	D36x50 – D60x90 S3	2.875-in API Reg box	Swivel	28 in (71.1-cm)	50,000 lb (22,679.6 kg)
296341460	D36x50 – D60x90 S3	2.875-in API Reg box	Swivel	30 in (76.2-cm)	50,000 lb (22,679.6 kg)
296264865	Replacement Rotary teeth – heavy-duty weld-on				

Fluted with swivel – Rotary teeth

PART NO.	MODEL COMPATIBILITY	FRONT CONNECTION	REAR CONNECTION	CUTTING SIZE	SWIVEL/SWIVEL CAPACITY
296341461	D36x50 – D100x140 S3	3.5-in API Reg box	Swivel	10 in (25.4 cm)	100,000 lb (45,359.2 kg)
296341462	D36x50 – D100x140 S3	3.5-in API Reg box	Swivel	12 in (30.5 cm)	100,000 lb (45,359.2 kg)
296341463	D36x50 – D100x140 S3	3.5-in API Reg box	Swivel	14 in (35.6 cm)	100,000 lb (45,359.2 kg)
296341464	D36x50 – D100x140 S3	3.5-in API Reg box	Swivel	16 in (40.6 cm)	100,000 lb (45,359.2 kg)
296341465	D36x50 – D100x140 S3	3.5-in API Reg box	Swivel	18 in (45.7 cm)	100,000 lb (45,359.2 kg)
296341466	D36x50 – D100x140 S3	3.5-in API Reg box	Swivel	20 in (50.8 cm)	100,000 lb (45,359.2 kg)
296341467	D36x50 – D100x140 S3	3.5-in API Reg box	Swivel	22 in (55.9 cm)	100,000 lb (45,359.2 kg)
296341468	D36x50 – D100x140 S3	3.5-in API Reg box	Swivel	24 in (61 cm)	100,000 lb (45,359.2 kg)
296341469	D36x50 – D100x140 S3	3.5-in API Reg box	Swivel	26 in (66 cm)	100,000 lb (45,359.2 kg)
296341470	D36x50 – D100x140 S3	3.5-in API Reg box	Swivel	28 in (71.1 cm)	100,000 lb (45,359.2 kg)
296341471	D36x50 – D100x140 S3	3.5-in API Reg box	Swivel	30 in (76.2 cm)	100,000 lb (45,359.2 kg)
296341472	D36x50 – D100x140 S3	3.5-in API Reg box	Swivel	32 in (81.3 cm)	100,000 lb (45,359.2 kg)
296341473	D36x50 – D100x140 S3	3.5-in API Reg box	Swivel	34 in (86.4 cm)	100,000 lb (45,359.2 kg)
296341474	D36x50 – D100x140 S3	3.5-in API Reg box	Swivel	36 in (91.4 cm)	100,000 lb (45,359.2 kg)
296341475	D36x50 – D100x140 S3	3.5-in API Reg box	Swivel	38 in (96.5 cm)	100,000 lb (45,359.2 kg)
296341476	D36x50 – D100x140 S3	3.5-in API Reg box	Swivel	40 in (101.6 cm)	100,000 lb (45,359.2 kg)
296264865	Replacement Rotary teeth – heavy-duty weld-on				

Fluted box x pin – Rotary teeth

PART NO.	MODEL COMPATIBILITY	FRONT CONNECTION	REAR CONNECTION	CUTTING SIZE
296341477	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	10 in (25.4 cm)
296341478	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	12 in (30.5 cm)
296341479	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	14 in (35.6 cm)
296341480	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	16 in (40.6 cm)
296341481	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	18 in (45.7 cm)
296341482	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	20 in (50.8 cm)
296341483	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	22 in (55.9 cm)
296341484	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	24 in (61 cm)
296341485	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	26 in (66 cm)
296341486	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	28 in (71.1 cm)
296341487	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	30 in (76.2 cm)
296341488	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	32 in (81.3 cm)
296341489	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	34 in (86.4 cm)
296341490	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	36 in (91.4 cm)
296341491	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	38 in (96.5 cm)
296341492	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	40 in (101.6 cm)
296264865	Replacement Rotary teeth – heavy-duty weld-on			



What considerations should you be thinking about when selecting HDD tooling for your jobsite?



T-Rex reamer

Take a bite out of tough conditions. Ruggedly constructed with work-hardened, high-alloy steel, this reamer incorporates a unique, steep, rear-tapered design for ease of pushback when needed. Optional built-in swivel or through-shaft designs are available. High-wear areas are made with a resilient carbide mesh grit hardfacing. Equipped with oversized shark teeth tooling for aggressive, yet smooth, cutting action, the T-Rex reamer is ready for **cobble, chunk rock and soft rock.**



Reamer carriers

PART NO.	MAX REAMER DIA.	MAX SHAFT LENGTH	MAX WEIGHT
296255490	24 in (61 cm)	40 in (101.6 cm)	1,000 lb (453.6 kg)
296260037	48 in (121.9 cm)	108 in (274.3 cm)	2,400 lb (1,088.6 kg)



T-Rex with swivel

PART NO.	MODEL COMPATIBILITY	FRONT CONNECTION	REAR CONNECTION	CUTTING SIZE	SWIVEL/SWIVEL CAPACITY
296309260	D36x50 – D60x90 S3	2.875-in API box	Swivel	8 in (20.3 cm)	50,000 lb (22,679.6 kg)
296309261	D36x50 – D60x90 S3	2.875-in API box	Swivel	10 in (25.4 cm)	50,000 lb (22,679.6 kg)
296309262	D36x50 – D60x90 S3	2.875-in API box	Swivel	12 in (30.5 cm)	50,000 lb (22,679.6 kg)
296309263	D36x50 – D60x90 S3	2.875-in API box	Swivel	14 in (35.6 cm)	50,000 lb (22,679.6 kg)
296309264	D36x50 – D60x90 S3	2.875-in API box	Swivel	16 in (40.6 cm)	50,000 lb (22,679.6 kg)
296309265	D36x50 – D60x90 S3	2.875-in API box	Swivel	18 in (45.7 cm)	50,000 lb (22,679.6 kg)
296309266	D36x50 – D60x90 S3	2.875-in API box	Swivel	20 in (50.8 cm)	50,000 lb (22,679.6 kg)
296309267	D36x50 – D60x90 S3	2.875-in API box	Swivel	22 in (55.9 cm)	50,000 lb (22,679.6 kg)
296309268	D36x50 – D60x90 S3	2.875-in API box	Swivel	24 in (61 cm)	50,000 lb (22,679.6 kg)
296320016	D36x50 – D100x140 S3	3.5-in API Reg box	Swivel	12 in (30.5 cm)	100,000 lb (45,359.2 kg)
296320018	D36x50 – D100x140 S3	3.5-in API Reg box	Swivel	14 in (35.6 cm)	100,000 lb (45,359.2 kg)
296309286	D36x50 – D100x140 S3	3.5-in API Reg box	Swivel	16 in (40.6 cm)	100,000 lb (45,359.2 kg)
296309287	D36x50 – D100x140 S3	3.5-in API Reg box	Swivel	18 in (45.7 cm)	100,000 lb (45,359.2 kg)
296309288	D36x50 – D100x140 S3	3.5-in API Reg box	Swivel	20 in (50.8 cm)	100,000 lb (45,359.2 kg)
296309289	D36x50 – D100x140 S3	3.5-in API Reg box	Swivel	22 in (55.9 cm)	100,000 lb (45,359.2 kg)
296309290	D36x50 – D100x140 S3	3.5-in API Reg box	Swivel	24 in (61 cm)	100,000 lb (45,359.2 kg)
296309291	D36x50 – D100x140 S3	3.5-in API Reg box	Swivel	26 in (66 cm)	100,000 lb (45,359.2 kg)
296309292	D36x50 – D100x140 S3	3.5-in API Reg box	Swivel	28 in (71.1 cm)	100,000 lb (45,359.2 kg)
296309293	D36x50 – D100x140 S3	3.5-in API Reg box	Swivel	30 in (76.2 cm)	100,000 lb (45,359.2 kg)
296309294	D36x50 – D100x140 S3	3.5-in API Reg box	Swivel	32 in (81.3 cm)	100,000 lb (45,359.2 kg)
296294440	Replacement Shark teeth – 1.75-in (4.4-cm) weld-on				

T-Rex box x pin

PART NO.	MODEL COMPATIBILITY	FRONT CONNECTION	REAR CONNECTION	CUTTING SIZE
296309251	D16x20 – D60x90 S3	2.875-in API box	2.875-in API pin	8 in (20.3 cm)
296309252	D16x20 – D60x90 S3	2.875-in API box	2.875-in API pin	10 in (25.4 cm)
296309253	D16x20 – D60x90 S3	2.875-in API box	2.875-in API pin	12 in (30.5 cm)
296309254	D16x20 – D60x90 S3	2.875-in API box	2.875-in API pin	14 in (35.6 cm)
296309255	D16x20 – D60x90 S3	2.875-in API box	2.875-in API pin	16 in (40.6 cm)
296309256	D16x20 – D60x90 S3	2.875-in API box	2.875-in API pin	18 in (45.7 cm)
296309257	D16x20 – D60x90 S3	2.875-in API box	2.875-in API pin	20 in (50.8 cm)
296309258	D16x20 – D60x90 S3	2.875-in API box	2.875-in API pin	22 in (55.9 cm)
296309259	D16x20 – D60x90 S3	2.875-in API box	2.875-in API pin	24 in (61 cm)
296320012	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	12 in (30.5 cm)
296320014	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	14 in (35.6 cm)
296309269	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	16 in (40.6 cm)
296309270	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	18 in (45.7 cm)
296309271	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	20 in (50.8 cm)
296309272	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	22 in (55.9 cm)
296309273	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	24 in (61 cm)
296309274	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	26 in (66.0 cm)
296309275	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	28 in (71.1 cm)
296309276	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	30 in (76.2 cm)
296309277	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	32 in (81.3 cm)
296294440	Replacement Shark teeth – 1.75-in (4.4-cm) weld-on			

Mix Master reamer

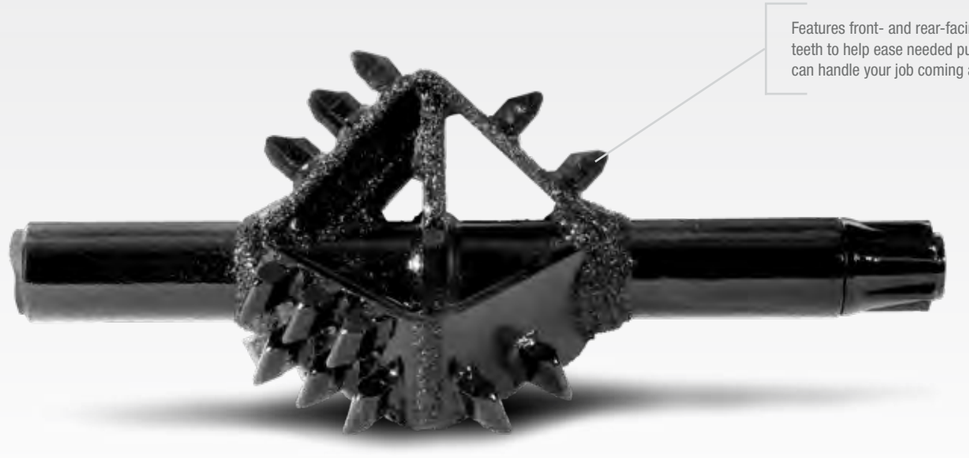
Like the name says, this series puts together aggressive cutting and mixed design characteristics to help reduce the amount of pullback and rotational force needed from the drill rig. Vermeer Mix Master reamers are intended for **sandy loam, sticky clay and other reactive ground conditions**, and are equipped with carbide shark teeth tooling for an effective shearing action.



PART NO.	MODEL COMPATIBILITY	FRONT CONNECTION	REAR CONNECTION	CUTTING SIZE
296320135	D7x11 – D24x40 S3	2.375-in API Reg box	2.375-in API pin	6 in (15.2 cm)
296320136	D7x11 – D24x40 S3	2.375-in API box	2.375-in API pin	8 in (20.3 cm)
296320137	D7x11 – D24x40 S3	2.375-in API box	2.375-in API pin	10 in (25.4 cm)
296320138	D7x11 – D24x40 S3	2.375-in API box	2.375-in API pin	12 in (30.5 cm)
296320139	D7x11 – D24x40 S3	2.375-in API box	2.375-in API pin	14 in (35.6 cm)
296320140	D7x11 – D24x40 S3	2.375-in API box	2.375-in API pin	16 in (40.6 cm)
296320141	D16x20 – D80x100 Series II	2.875-in API box	2.875-in API pin	8 in (20.3 cm)
296320142	D16x20 – D80x100 Series II	2.875-in API box	2.875-in API pin	10 in (25.4 cm)
296320143	D16x20 – D80x100 Series II	2.875-in API box	2.875-in API pin	12 in (30.5 cm)
296320144	D16x20 – D80x100 Series II	2.875-in API box	2.875-in API pin	14 in (35.6 cm)
296320145	D16x20 – D80x100 Series II	2.875-in API box	2.875-in API pin	16 in (40.6 cm)
296320146	D16x20 – D80x100 Series II	2.875-in API box	2.875-in API pin	18 in (45.7 cm)
296320147	D16x20 – D80x100 Series II	2.875-in API box	2.875-in API pin	20 in (50.8 cm)
296320148	D16x20 – D80x100 Series II	2.875-in API box	2.875-in API pin	22 in (55.9 cm)
296320149	D16x20 – D80x100 Series II	2.875-in API box	2.875-in API pin	24 in (61 cm)
296320150	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	8 in (20.3 cm)
296320151	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	10 in (25.4 cm)
296320152	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	12 in (30.5 cm)
296320153	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	14 in (35.6 cm)
296320154	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	16 in (40.6 cm)
296320155	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	18 in (45.7 cm)
296320156	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	20 in (50.8 cm)
296320157	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	22 in (55.9 cm)
296320158	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	24 in (61 cm)

Diamond Wing Cutter reamer

Efficient and effective, the Diamond Wing Cutter features a dual-tapered, open-bodied design to maintain mixing action which helps allow reduced pullback and rotational forces required from the drill rig.



PART NO.	MODEL COMPATIBILITY	FRONT CONNECTION	REAR CONNECTION	CUTTING SIZE
296417717	D7x11 – D24x40 S3	2.375-in API Reg box	2.375-in API Reg pin	10 in (25.4 cm)
296417708	D7x11 – D24x40 S3	2.375-in API Reg box	2.375-in API Reg pin	12 in (30.5 cm)
296417699	D7x11 – D24x40 S3	2.375-in API Reg box	2.375-in API Reg pin	14 in (35.6 cm)
296417690	D7x11 – D24x40 S3	2.375-in API Reg box	2.375-in API Reg pin	16 in (40.6 cm)
296417726	D7x11 – D24x40 S3	2.375-in API Reg box	2.375-in API Reg pin	18 in (45.7 cm)
296412817	D16x20 – D60x90 S3	2.875-in API Reg box	2.875-in API Reg pin	12 in (30.5 cm)
296412818	D16x20 – D60x90 S3	2.875-in API Reg box	2.875-in API Reg pin	14 in (35.6 cm)
296412819	D16x20 – D60x90 S3	2.875-in API Reg box	2.875-in API Reg pin	16 in (40.6 cm)
296412820	D16x20 – D60x90 S3	2.875-in API Reg box	2.875-in API Reg pin	18 in (45.7 cm)
296412821	D16x20 – D60x90 S3	2.875-in API Reg box	2.875-in API Reg pin	20 in (50.8 cm)
296412822	D16x20 – D60x90 S3	2.875-in API Reg box	2.875-in API Reg pin	22 in (55.9 cm)
296412823	D16x20 – D60x90 S3	2.875-in API Reg box	2.875-in API Reg pin	24 in (61 cm)
296412826	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	14 in (35.6 cm)
296412827	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	16 in (40.6 cm)
296412828	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	18 in (45.7 cm)
296412829	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	20 in (50.8 cm)
296412830	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	22 in (55.9 cm)
296412831	D36x50 – D100x140 S3	3.5-in API Reg box	3.5-in API Reg pin	24 in (61 cm)

Fly Cutter

This robust flat-face reamer is designed for higher-powered HDD rigs. You can also count on the Vermeer Fly Cutter in a variety of ground conditions including **sandy soil loam and soft, medium and hard soil,** with its changeable carbide fluid nozzles that help optimize flow (including front and rear fluid nozzles to help increase spoil displacement). Also designed with C20 pockets and replaceable C21HD rotary teeth to supply you with durable cutting performance.



Supreamer reamer

Take on big jobs with the Supreamer reamer's exceptional mixing action — made possible by its open-bodied design and ruggedly large paddles.

Includes front- and rear-facing oversized carbide shark teeth tooling for aggressive cutting action and ease of pushback when needed.



Barrel reamer

Vermeer Barrel reamers give you steady bore-hole stabilization in **sandy soil loam, soft soil and medium soil.** They also include front and rear fluid nozzles to help increase spoil displacement. And they're designed with C20 pockets and replaceable C21HD rotary teeth to dish out durable cutting performance. Plus, you'll get heavy performance without hefty weight. In fact, they're designed with a unique internal baffle system that limits the amount of drilling fluid mass — decreasing overall tool weight to help protect structural integrity.



Helical Plus reamer

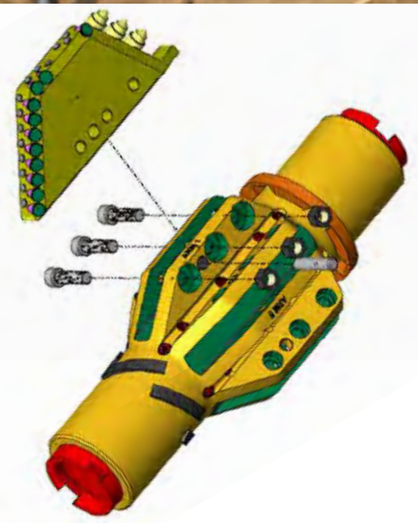
This Vermeer-original design helps you tame **sandy loam and clay.** The secret to its success is a helical bar design with shark teeth tooling and rear-facing paddles. It all adds up for efficient cutting and mixing action.



DON'T SEE WHAT YOU NEED HERE?

Reamers are one of the most productive and popular options for HDD contractors. That's why Vermeer provides custom reamers for the full drill and maxi rig lineups. Looking for something you don't see here? Talk to your local Vermeer dealer to learn about our custom reamer build options or get additional product information at BORESTORE.com.





CHANGE ON THE FLY

PDC hole opener

Maximize your efficiency in the field with the new replaceable wing (polycrystalline diamond compact) PDC hole opener from Vermeer. These hole openers bring performance and reliability to consolidated rock formations less than 25,000 psi (1,700 bar). With replaceable wing options available in three sizes, users can change sizes to maximize their investment in the single body. In the event of wing damage, a single replacement wing can be purchased and installed in the field, rather than taking the tool out of service for repairs. The convenience can't be beat.

OPERATING PARAMETERS			ROTATION	PULLBACK	FLOW
CUT DIAMETER	NO. OF BLADES	MIN PILOT	MAX RPM	MAX WEIGHT ON BIT (WOB)	MIN GPM
8 in (20.3 cm)	5	4.75 in (12.1 cm)	100	16,000 lb (7,257.5 kg)	10
10 in (25.4 cm)	5	4.75 in (12.1 cm)	100	20,000 lb (9,071.8 kg)	10
12 in (30.5 cm)	5	4.75 in (12.1 cm)	100	24,000 lb (10,886.2 kg)	10



See how Vermeer rock hole openers help you change wings on the fly.

GO **FULL BORE**

Roller cone hole opener

Performance meets durability with Vermeer roller cone hole openers. This lineup is manufactured using new (never reused) cutters to help operators navigate in the hard conditions. And, Vermeer engineers maximized cone size on the tool for increased weight on the bit for optimum surface penetration. The precision manufacturing process also helps create optimized concentricity of the tool for even wear. Plus, all cutters feature metal-faced seals rather than the conventional rubber seals to help maximize wear life in gritty conditions. If you want quality tooling, go with Vermeer.

DETAILS
CUTTER
Available with IADC 617 (hard rock) and IADC 537 (medium rock) cutters
NOZZLE
5/8-in (16-mm) #20 carbide nozzles
Other options upon request
PUSH CUTTERS
Gussets with welded rotary teeth
Customization upon request

WATCH

See how Vermeer roller cone hole openers work in some of the hardest ground conditions.

SPECIFICATIONS

REAMER DIAMETER	STABILIZER DIAMETER (BAR STYLE WITH HARDFACING)	THREAD CONNECTION
8 in (20 cm)	4.5 in – 5.5 in (12 cm – 14 cm) Also offered with no stabilizer	2.375-in API Reg 2.875-in API Reg
10 in (25 cm)	5.5 in – 7 in (14 cm – 18 cm) Also offered with no stabilizer	
12 in (30 cm)	5.5 in – 9 in (14 cm – 23 cm)	2.875-in API Reg
14 in (36 cm)	6.25 in – 11 in (15.9 cm – 28 cm)	
16 in (41 cm)	8 in – 13 in (20 cm – 33 cm)	3.5-in API Reg
18 in (46 cm)	8 in – 15 in (20 cm – 38 cm)	
20 in (50 cm)	10 in – 17 in (25 cm – 43 cm)	
22 in (56 cm)	12 in – 19 in (30 cm – 48 cm)	3.5-in API IF
24 in (61 cm)	14 in – 20 in (36 cm – 50 cm)	
	Custom ring, spiral or bar with carbide options upon request	Custom shaft length and thread type upon request

ADAPTERS AND PULLING EYES

Vermeer provides standard sub and adapter products to meet your immediate needs with proven Vermeer-specified heat-treated alloy steel that is finished off with a 100 percent thread inspection process. A full line of adapters and pulling eyes are available for small drills up to maxi drill rigs.



QuickFire system x API

The parts listed represent a small percentage — Vermeer can meet virtually all of your connectivity needs, including other manufacturers' thread profiles.



PULLING EYES		
PART NO.	CONNECTION	RATING
289443001	2.375-in API Reg box	10,000 lb (4,535.9 kg)
289442001	2.375-in API Reg pin	10,000 lb (4,535.9 kg)
289445001	2.375-in API Reg box	24,000 lb (10,886.2 kg)
296312688	2.375-in API Reg pin	24,000 lb (10,886.2 kg)
289447001	2.875-in API Reg box	24,000 lb (10,886.2 kg)
296312689	2.875-in API Reg pin	24,000 lb (10,886.2 kg)
289449001	2.875-in API Reg box	50,000 lb (22,679.6 kg)
296312692	2.875-in API Reg pin	50,000 lb (22,679.6 kg)
289451001	3.5-in API Reg box	50,000 lb (22,679.6 kg)
289450001	3.5-in API Reg pin	50,000 lb (22,679.6 kg)
296328327	2.875-in API Reg box	90,000 lb (40,823.3 kg)
289452001	2.875-in API Reg pin	90,000 lb (40,823.3 kg)
289455001	3.5-in API Reg box	90,000 lb (40,823.3 kg)
289454001	3.5-in API Reg pin	90,000 lb (40,823.3 kg)

ADAPTERS	
PART NO.	DESCRIPTION
262392001	1.625-in LPT (P) x 2-4 ACME (P)
289400001	1.625-in LPT (P) x 2.375-in API Reg (P)
280086001	1.625-in LPT (P) x 2.125-in LPT (B)
227743001	1.625-in LPT (P) x weld-on
296364040	QuickFire system 300 (P) x 2-4 ACME (P)
296364041	QuickFire system 300 (P) x 2.375-in API Reg (P)
296364054	QuickFire system 300 (P) x weld-on
296364075	QuickFire system 300 (P) x weld-on spud
296364053	QuickFire system 300 (P) x 1.625-in LPT (P) weldover
296364055	QuickFire system 300 (P) x 2.125-in LPT (P) weldover
296279067	2.125-in LPT (P) x 2.375-in API Reg (P), 3-in (7.6-cm) OD
296258005	2.125-in LPT (P) x 2.375-in API Reg (P), 3.25-in (8.3-cm) OD
289403001	2.125-in LPT (P) x 2.375-in API Reg (P), 3.5-in (8.9-cm) OD
289406001	2.125-in LPT (P) x 2.875-in API Reg (P)
296312604	2.125-in LPT (P) x 3.5-in API Reg (P)
227676001	2.125-in LPT (P) x weld-on
296344203	2.125-in LPT (P) x 2.125-in LPT (P) weldover
296364095	QuickFire system 400 (P) x 2.125-in LPT (B)
296364037	QuickFire system 400 (P) x 2.375-in API Reg (P)
296364038	QuickFire system 400 (P) x 2.875-in API Reg (P)
296364050	QuickFire system 400 (P) x weld-on, 3-in (7.6-cm) long
296364073	QuickFire system 400 (P) x weld-on, 3.75-in (9.5-cm) long
296364072	QuickFire system 400 (P) x 1.625-in LPT (P) weldover
296364052	QuickFire system 400 (P) x 2.125-in LPT (P) weldover
296364077	QuickFire system 460 (P) x 2.125-in LPT Hex (B)
296364013	QuickFire system 460 (P) x 2.375-in API Reg (P)
296364014	QuickFire system 460 (P) x 2.875-in API Reg (P)
296364017	QuickFire system 460 (P) x 3.5-in API Reg (P)
296364016	QuickFire system 460 (P) x weld-on, 5.5-in (14-cm) long
296364074	QuickFire system 460 (P) x weld-on, 6.75-in (17.1-cm) long
296364015	QuickFire system 460 (P) x 2.125-in LPT (P) weldover
296560794	QuickFire HD system 300 (B) X 2-in API IF (P)
296555470	QuickFire HD system 300(B) X 2-4 ACME (P)
296555451	QuickFire HD system 400 (B) x 2.375-in API Reg (P)
296555451	QuickFire HD system 400 (B) x 2.375-in API Reg (P)
296555451	QuickFire HD system 400 (B) x 2.375-in API Reg (P)
296555453	QuickFire HD system 400 (B) x 2.875-in API Reg (P)
296560761	QuickFire HD system 460 (B) x 2.375-in API Reg (P)
296560763	QuickFire HD system 460 (B) x 2.875-in API Reg (P)
296560761	QuickFire HD system 460 (B) x 2.375-in API Reg (P)
296560763	QuickFire HD system 460 (B) x 2.875-in API Reg (P)
296560761	QuickFire HD system 460 (B) x 2.375-in API Reg (P)
296560763	QuickFire HD system 460 (B) x 2.875-in API Reg (P)
296337363	2.875-in FST #900 (B) x 2.875-in API Reg (P)
289435001	2.875-in FST #900 (B) x 3.5-in API Reg (P)
296257929	3.5-in FST #800 (B) x 2.875-in API Reg (P)
296312589	3.5-in FST #800 (B) x 3.5-in API Reg (P)
296312587	3.5-in FST #1000 (B) x 2.875-in API Reg (P)
296312588	3.5-in FST #1000 (B) x 3.5-in API Reg (P)
296312585	3.5-in FST #1000 (B) x 4.5-in API IF (P)

VERMEER QUICKSHOT SWIVEL TOOLS

The new quickshot swivel tools give HDD crews dependable pullback performance on small-diameter bores. Quickshot swivel tools are designed to work in conjunction with most quickshot drill bits and are available in four sizes with ratings ranging from 9,000 pounds to 30,000 pounds (4082.3 kg-13,607.8 kg). For optimized in-line pullback and to help prevent binding, Vermeer also offers a quick pullback swivel attachment plate.



See how to use and get the most out of Vermeer Quickshot swivels.



QUICKSHOT SWIVEL SELECTED	PART NO.	DESCRIPTION
9,000 lb (4,082.3 kg)	296529021	Pullback plate for Vermeer 5-bolt bits
9,000 lb (4,082.3 kg)	296529129	Pullback plate for Vermeer 6-bolt standard / standard hardfaced bits
9,000 lb (4,082.3 kg)	296529012	Pullback plate for Vermeer 6-bolt Gladiator and Ace bits
12,000 (5,443.1 kg)	296529129	Pullback plate for Vermeer 6-bolt standard / standard hardfaced bits
12,000 (5,443.1 kg)	296529012	Pullback plate for Vermeer 6-bolt Gladiator and Ace bits
21,000 (9,525.4 kg)	296529130	Pullback plate for Vermeer 6-bolt standard / standard hardfaced bits
21,000 (9,525.4 kg)	296529016	Pullback plate for Vermeer 6-bolt Gladiator and Ace bits
30,000 (13,607.7 kg)	296529131	Pullback plate for Vermeer 6-bolt standard / standard hardfaced bits
30,000 (13,607.7 kg)	296529018	Pullback plate for Vermeer 6-bolt Gladiator and Ace bits

PART NO.	3:1 SAFE WORKING LOAD	ULTIMATE LOAD
296496479	9,000 lb (4,082.3 kg)	27,000 lb (12,247 kg)
296496480	12,000 (5,443.1 kg)	36,000 lb (16,329.3 kg)
296500583	21,000 (9,525.4 kg)	63,000 lb (28,576.3 kg)
296500584	30,000 (13,607.7 kg)	90,000 lb (40,823.3 kg)



SWIVELS

Vermeer swivels give you important job flexibility that goes beyond the "nice-to-have." Choose from a full line of options, fitting small to large rigs. Available connections include hex collar, QuickFire connection system and API for ease of compatibility with a wide range of reamers and other tooling. Plus, count on our angular contact bearing design to handle thrust and radial load.





QuickFire connection system

Designed for ease of use with the Vermeer QuickFire connection system.

PULLBACK SWIVEL – QUICKFIRE CONNECTION SYSTEM			
PART NO.	MODEL COMPATIBILITY	CONNECTION TYPE	CAPACITY
296364127	D7x11A – D10x15 S3	QuickFire system 300 pin	10,000 lb (4,535.9 kg)
296364110	D7x11A – D10x15 S3	QuickFire system 300 pin	24,000 lb (10,886.2 kg)
296364108	D16x20 – D24x40 S3	QuickFire system 400 pin	24,000 lb (10,886.2 kg)
296364109	D16x20 – D24x40 S3	QuickFire system 460 pin	24,000 lb (10,886.2 kg)
296364150	D36x50, D36x50 Series II, D40x55 S3	QuickFire system 460 pin	40,000 lb (18,143.7 kg)



Hex

For use with the low-profile hex connection system.

PULLBACK SWIVEL – HEX			
PART NO.	MODEL COMPATIBILITY	CONNECTION TYPE	CAPACITY
235086001	D7x11A – D10x15 S3	1.625-in (4.1-cm) hex pin	7,000 lb (3,175.2 kg)
235039001	D16x20 – D24x40 S3	2.125-in (5.4-cm) hex pin	24,000 lb (10,886.2 kg)
280486001	D24x40 – D40x55 S3	2.125-in (5.4-cm) hex pin	40,000 lb (18,143.7 kg)



Double eye

The double eye is a universal design that can be used with any reamer that doesn't include a built-in swivel.

PULLBACK SWIVEL – DOUBLE EYE			
PART NO.	MODEL COMPATIBILITY	CONNECTION TYPE	CAPACITY
296448894	D7x11A – D10x15 S3	Recessed bolt	7,000 lb (3,175.5 kg)
296448874	D16x20 – D20x22 S3	Recessed bolt	10,000 lb (4,535.9 kg)
296448829	D16x20 – D24x40 S3	Recessed bolt	24,000 lb (10,886.2 kg)
296258123	D36x50, D36x50 Series II, D40x55 S3	Eye x clevis	50,000 lb (22,679.6 kg)
296258124	D50x100 – D100x140 S3	Eye x clevis	90,000 lb (40,823.3 kg)
296268977	D50x100 – D100x140 S3	Eye x clevis	100,000 lb (45,359.2 kg)



API

Designed for use with API thread reamers.

PULLBACK SWIVEL – API			
PART NO.	MODEL COMPATIBILITY	CONNECTION TYPE	CAPACITY
296364178	D7x11A – D10x15 S3	2.375-in API box	7,000 lb (3,175.5 kg)
296364177	D16x20 – D24x40 S3	2.375-in API box	24,000 lb (10,886.2 kg)
296364234	D24x40, D24x40 S3	2.875-in API box	24,000 lb (10,886.2 kg)
296364179	D36x50, D36x50 Series II, D40x55 S3	2.875-in API box	50,000 lb (22,679.6 kg)
296260235	D50x100 – D100x140 S3	3.5-in API box	100,000 lb (45,359.2 kg)



Plate bit swivel

Designed to be a quick and convenient solution — pulls on center and greases with replaceable bearing stack.

PLATE BIT SWIVEL			
PART NO.	MODEL COMPATIBILITY	CONNECTION TYPE	CAPACITY
296406701	D7x11A – D10x15 S3	Cross bolt	7000 lb (3,175.2 kg)



Shackles

Used to attach end product to swivel.

SHACKLES		
PART NO.	DESCRIPTION	RATED CAPACITY
296415190	3/8-in (.375-in, 10-mm) threaded (P)	2,000 lb (907.2 kg)
296415191	7/16-in (.348-in, 11-mm) threaded (P)	3,000 lb (1,360.8 kg)
296415192	1/2-in (.5-in, 13-mm) threaded (P)	4,000 lb (1,814.4 kg)
296415193	5/8-in (.625-in, 16-mm) threaded (P)	6,500 lb (2,948.4 kg)
296415161	.88-in (22-mm) threaded (P)	13,000 lb (5896.7 kg)
296415390	1-in (25-mm) threaded (P)	17,000 lb (7711.1 kg)

PULLERS

Whether you're working with HDPE, PVC or PE, you'll find a full range of puller options to help meet your product pipe type and size.





Duct

You can get a grip on the job with our duct puller that features high thread engagement. It's durable, too, with heat-treated, high-alloy steel construction.

PART NO.	DESCRIPTION	SIZE
231802001	Duct puller	.5 in – 1 in (1.3 cm – 2.5 cm)
296255297	Duct puller	1 in (2.5 cm)
289295001	Duct puller	1 in – 1.25 in (2.5 cm – 3.2 cm)
296255533	Duct puller	1.25 in (3.2 cm)
231805001	Duct puller	1.25 in – 1.5 in (3.2 cm – 3.8 cm)
296255298	Duct puller	1.5 in (3.8 cm)
231807001	Duct puller	2 in (5.1 cm)
296448883	Duct puller	2.5 in (6.35 cm)



Sleeved

With Vermeer sleeved pullers, a protective sleeve guards the leading edge of the installation product, reducing the possibility of contamination and helping to prevent accidental release from the puller.

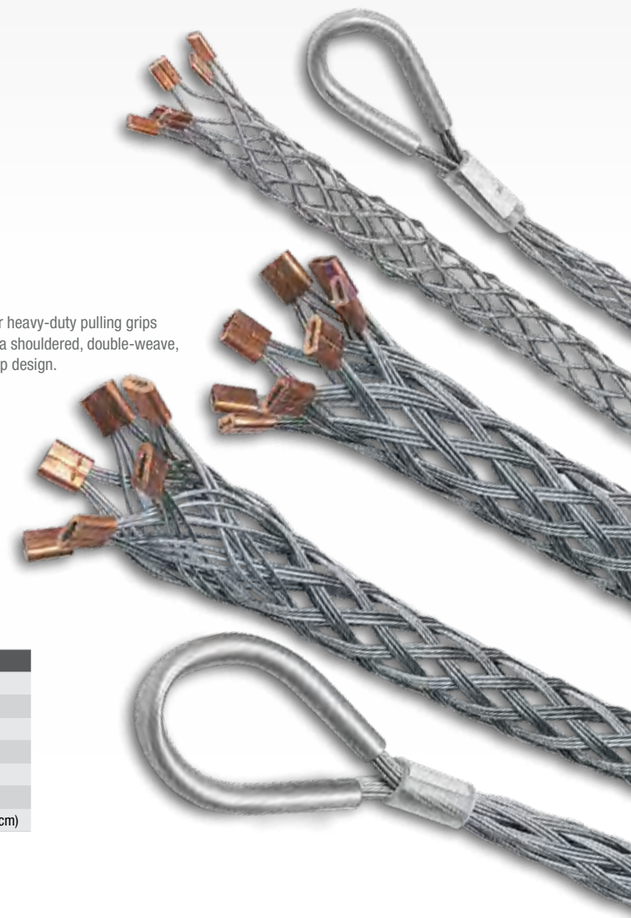
PART NO.	DESCRIPTION	SIZE
296401388	Sleeved puller	1 in (2.5 cm)
296401386	Sleeved puller	1.25 in (3.2 cm)
296401384	Sleeved puller	1.5 in (3.8 cm)
296401366	Sleeved puller	2 in (5.1 cm)
296401367	Sleeved puller	2.5 in (6.4 cm)
296341810	Sleeved puller	3 in (7.6 cm)
296341812	Sleeved puller	4 in (10.2 cm)
296404503	Sleeved puller	6 in (15.2 cm)
296448980	Sleeved puller	8 in (20.32 cm)
296449000	Sleeved puller	10 in (25.4 cm)



Expanded tapered

As the leading edge of the installation product makes its way, it's guarded by a protective sleeve that minimizes the possibility of contamination and helps prevent accidental release from the puller. An advanced taperlock design helps prevent accidental unscrewing of the puller during installation or removal of pipe.

PART NO.	DESCRIPTION	SIZE
296401387	Expanding taper puller	1 in (2.5 cm)
296401385	Expanding taper puller	1.25 in (3.2 cm)
296401383	Expanding taper puller	1.5 in (3.8 cm)
296401368	Expanding taper puller	2 in (5.1 cm)
296401369	Expanding taper puller	2.5 in (6.4 cm)
296341809	Expanding taper puller	3 in (7.6 cm)
296341811	Expanding taper puller	4 in (10.2 cm)
296404501	Expanding taper puller	5 in (12.7 cm)
296404502	Expanding taper puller	6 in (15.2 cm)
296404516	Expanding taper puller	8 in (20.3 cm)
296404517	Expanding taper puller	10 in (25.4 cm)
296404518	Expanding taper puller	12 in (30.5 cm)



Vermeer heavy-duty pulling grips feature a shouldered, double-weave, no-crimp design.

Pulling grips

Help meet your job's need. Available in double- and triple-galvanized wire weave.

PART NO.	DESCRIPTION	SIZE
204965001	Pulling grips	.75 in – 1.25 in (1.9 cm – 3.2 cm)
296278316	Pulling grips	.75 in – 1.25 in (1.9 cm – 3.2 cm)
204966001	Pulling grips	1.25 in – 2 in (3.2 cm – 5.1 cm)
204967001	Pulling grips	2 in – 2.75 in (5.1 cm – 7 cm)
204968001	Pulling grips	2.75 in – 3.5 in (7 cm – 8.9 cm)
204969001	Pulling grips	3.5 in – 4.25 in (8.9 cm – 10.8 cm)
223750001	Pulling grips	4.25 in – 4.875 in (10.8 cm – 12.4 cm)

MAKING THE CONNECTION

Vermeer breakout devices provide an efficient solution for torqued direct tooling connections.



Choose from the Vermeer PBD11500 breakout tongs for smaller utility directional drilling applications and tooling ranging from 1.66 inches to 3.5 inches (4.2-cm to 8.9-cm) in diameter or one of two powerful hydraulic breakout device tools ranging from 2.5 inches to 5.75 inches (6.3-cm to 14.6-cm) in diameter.

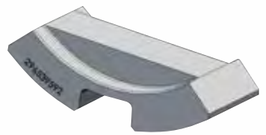
The Vermeer PBD21500MP is operated using a manual hydraulic hand pump, while the premium Vermeer PBD21500 kit is operated using a 28-volt hydraulic power unit with one Milwaukee lithium battery to help minimize the labor involved with making and breaking tooling connections.

Vermeer breakout device kits include forged alloy wrenches, two sets of dies and a power source (hydraulic models only). Vermeer also offers specialty bit breakout arms for use with PDC and tricone rock bits for hydraulic breakout devices.

TRICONE BIT BREAKER



PDC BIT BREAKER



PART NO.	Description
PBD11500	11,500-ft-lb (29,150 Nm) Portable Breakout Device
PBD21500	21,500-ft-lb (29,150 Nm) Portable Breakout Device (115 V charger intended for US/Canada)
PBD215001	21,500-ft-lb (29,150 Nm) Portable Breakout Device (115 V charger intended for Lat Am/So Am/Japan)
PBD215002	21,500-ft-lb (29,150 Nm) Portable Breakout Device (230 V charger intended for Aus/NZ)
PBD215003	21,500-ft-lb (29,150 Nm) Portable Breakout Device (230 V charger intended for Eur/ME/Afr/Asia)
PBD21500MP	21,500-ft-lb (29,150 Nm) Portable Breakout Device with manual hand pump
ACCESSORIES	
296522914	2.5-in – 3.75-in (6.3 – 9.5-cm) Die Set (8 required)
296539594	2.875-in API Reg PDC bit breaker (4 required)
296539592	3.5-in API Reg PDC bit breaker (4 required)
296522949	5-in – 5.75-in (12.7-cm – 14.6-cm) diameter Tricone bit breaker
296522909	5.75-in – 6.5-in (14.6 – 16.5-cm) diameter Tricone bit breaker
296539505	6.5-in – 7.25-in (16.5 – 18.4-cm) diameter Tricone bit breaker

Premium PBD21500MP portable breakout device kit

- Forged alloy wrenches
- Two die sets
- Hydraulic cylinder
- Hydraulic hoses
- 28-volt hydraulic power unit
- One Milwaukee lithium battery
- Battery charger
- Hard-cover case

Manual PBD21500 portable breakout device

- Forged alloy wrenches
- Two die sets
- Hydraulic cylinder
- Hydraulic hoses
- Manual hand pump

PBD11500 breakout tongs kit

- Forged alloy wrenches
- Three sizes of vise jaws
- Tension rod
- Connector pins
- Two die sets
- Laser-cut wrench
- Hard-cover case

Thread lube

Find thread lubes specially designed for seasonal applications and various HDD models, including the environmentally friendly Bio-Stick grease.

PART NO.	DESCRIPTION	VOLUME
296337339	Bio-Stick grease	1 gal (3.8 L)
296337340	Bio-Stick grease	2 gal (7.6 L)
296426100	Bio-Stick grease	5 gal (18.9 L)
296337372	Bio-Stick grease	30-pk cartridge
235983001	Vermeer thread lube	1 gal (3.8 L)
235983002	Vermeer thread lube – Winter	1 gal (3.8 L)
296408629	Vermeer thread lube – Winter	5 gal (18.9 L)
905508003	Vermeer thread lube – Summer	2 gal (7.6 L)
296426101	Vermeer thread lube – Summer	5 gal (18.9 L)
296264990	Thread lube brush – Tapered	
296264991	Thread lube brush – Beveled	
296274856	Thread lube brush – Long Tapered	



Bio-Stick grease is biodegradable, nontoxic and washable, making it an environmentally friendly solution to your thread lube needs.

BORESTORE®

HDD TOOLING AND ACCESSORIES WAREHOUSE

Vermeer®

PN 5906605