

Section AB

12/2002

Ford Drilling Machine

Parts and
Instruction
Manual



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Information



The Ford Complete Drilling Machine Kit includes:

- The Drilling Machine (items 1 through 9A on page 3)
- Flare Copper Thread Adapters for 3/4" and 1" Corporation Stops (item 10)
- Two small adjustable open end wrenches (item 11)
- Tool box (item 12)

Optional Items

- 1/2" thru 1" Drills for Cast Iron and A/C
- 1/2", 3/4" & 1" Shell Cutters for PVC
- 1-1/2" and 2" Shell Cutters for PVC and A/C
- 1-1/2" and 2" Shell Cutters for Ductile Iron
- 1-1/2" and 2" Hole Saws for Ductile Iron, PVC and A/C
- Boring Bars for other sizes of Corporation Stops
- Adapters for different sizes and styles of Corporation Stops
- Chip flushing equipment (page 3) (See Ordering Information below)
 1. Substitute valve or hose adapter for plug. Attach hose.
 2. When Drill or PVC Cutter cuts through main, water pressure tends to wash chips through machine and hose.

Ordering Information

Drilling Machine only includes items 1 through 9A on page 3.

Complete Drilling Machine Kit includes items 1 through 12 on page 3. Drills, Shell Cutters and Hole Saws should be ordered separately.

Optional items and spare parts should be ordered separately by Name and Catalog Number on pages 3 & 4.

The Ford Drilling Machine

DRILLING MACHINE KITS

| CATALOG NUMBER | DESCRIPTION |
|------------------|---|
| DMO | Model 77 Drilling Machine body only (items 1 thru 8) (10 lb.) |
| DMO-1-9A | Model 77 Drilling Machine only (items 1 thru 9A) |
| DMK-1-12A | Model 77 Drilling Machine Kit Complete (items 1 thru 12) (36 lb.) |

Drills, Cutters and Hole Saws are not included with kits. See page 5 for a complete list of these items.

DRILLING MACHINE components

| REF. No. | DESCRIPTION | CATALOG NUMBER |
|----------|--|------------------|
| 1 | Handwheel and Feedscrew | DMHF |
| 2 | Ratchet Wrench | DMRW |
| 3 | Yoke | DMY |
| 4 | Yoke Bolts (2) | DMYB |
| 5 | Plug - 3/4" iron pipe thread | DMP-3 |
| 6 | Packing Bushing | DMPB |
| 7 | Boring Bar Packing (2) | DMBBP |
| 8 | Body | DMB |
| 9 | Boring Bar only (fits 11/16" Drill & Shell Cutter for 3/4" Corp Stop) | DMBB-3 |
| 9A | Boring Bar only (fits 7/8" Drill & Shell Cutter for 1" Corp Stop) | DMBB-4A |
| 10 | 3/4" Flare Copper adapter w/gaskets 1" Flare Copper adapter w/gaskets | DMA2-3 DMA2-4 |
| 11 | Open end adjustable wrenches (2) | DMAW-PR |
| 12 | Tool Box | DMTB |
| - | Drilling Machine Ratchet Wrench Repair Kit | DMRWK |

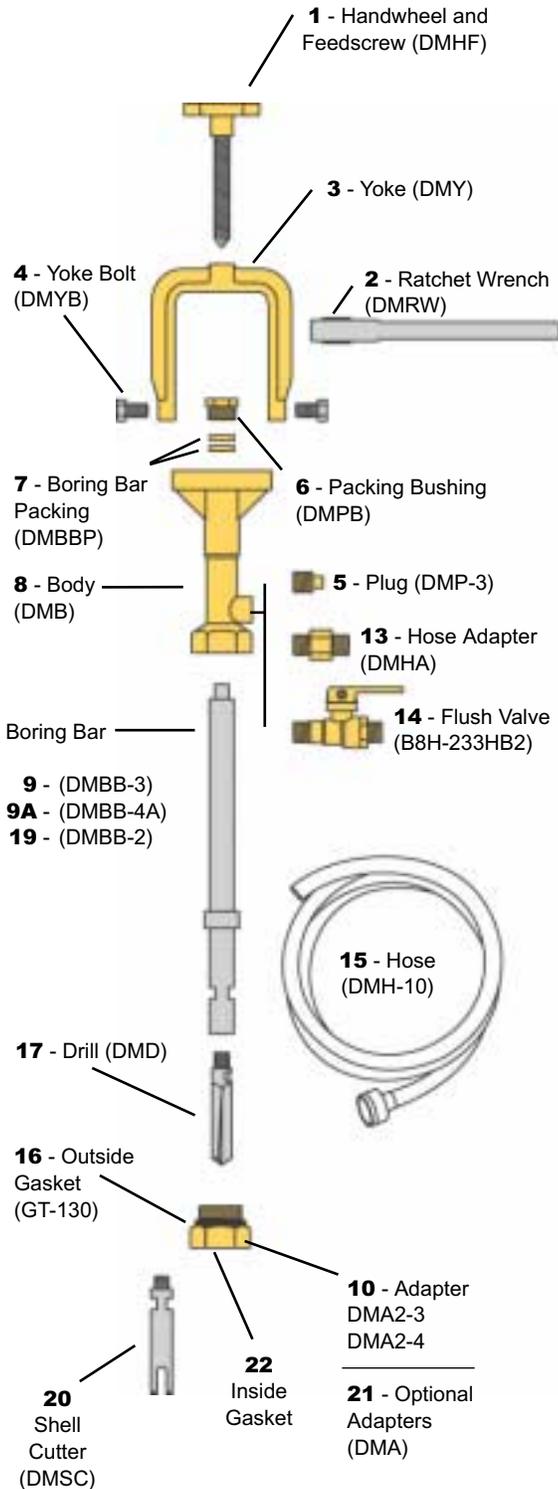
Optional items

| | | |
|----|--|------------|
| 13 | Hose adapter for chip flushing | DMHA |
| 14 | Ball Valve with hose threads for chip flushing | B8H-233HB2 |
| 15 | 12-1/2 ft. hose for chip flushing | DMH-10 |
| 16 | Outside gasket for all Corp Stop Adapters | GT-130 |

OPTIONS FOR 1/2" - 1-1/4" DRILLING REQUIREMENTS

| | | |
|---|--|----------|
| 17 | 7/16" Drill for 1/2" Corp Stop (fits Boring Bar DMBB-1) | DMD-1 |
| | 9/16" Drill for 5/8" Corp Stop (fits Boring Bar DMBB-2) | DMD-2 |
| | 11/16" Drill for 3/4" Corp Stop (fits Boring Bar DMBB-3) | DMD-3 |
| 19 | 7/8" Drill for 1" Corp Stop (fits Boring Bar DMBB-4A) | DMD-4A |
| | Boring Bar for 7/16" Drill for 1/2" Corp Stop | DMBB-1 |
| 20 | Boring Bar for 9/16" Drill for 5/8" Corp Stop | DMBB-2 |
| | 7/16" Shell Cutter for PVC (fits Boring Bar DMBB-1) | DMSC-1 |
| | 11/16" Shell Cutter for PVC (fits Boring Bar DMBB-3) | DMSC-3 |
| | 7/8" Shell Cutter for PVC (fits Boring Bar DMBB-4A) | DMSC-4A |
| 21 | 1/2" Flare Copper adapter with gaskets | DMA2-1 |
| | 5/8" Flare Copper adapter with gaskets | DMA2-2 |
| | 1-1/4" Flare Copper adapter with gaskets | DMA2-5 |
| | 1-1/4" Quick Joint adapter with gaskets (CTS) | DMA4-5-Q |
| | 3/4" Female Iron Pipe adapter with gaskets | DMA1-3 |
| | 1" Female Iron Pipe adapter with gaskets | DMA1-4 |
| | 1-1/4" Female Iron Pipe adapter with gaskets | DMA1-5 |
| 3/4" Quick Joint Adapter with gaskets (PEP) | DMA6-3-Q | |
| 22 | 1" Quick Joint Adapter with gaskets (PEP) | DMA6-4-Q |
| | Inside gasket for 1/2" Flare Copper adapter | GT-106 |
| | Inside gasket for 5/8" Flare Copper adapter | GT-107 |
| | Inside gasket for 3/4" Flare Copper adapter | GT-118 |
| | Inside gasket for 1" Flare Copper adapter | GT-119 |
| | Inside gasket for 1-1/4" Flare Copper adapter | GT-147 |
| | Inside gasket for 3/4" Iron Pipe adapter | GT-114 |
| | Inside gasket for 1" Iron Pipe adapter | GT-120 |
| Inside gasket for 1-1/4" Iron Pipe adapter | GT-119 | |

Note: 1-1/2" and 2" equipment on following page.



The Ford Drilling Machine

Optional Items for 1-1/2" and 2" drilling requirements

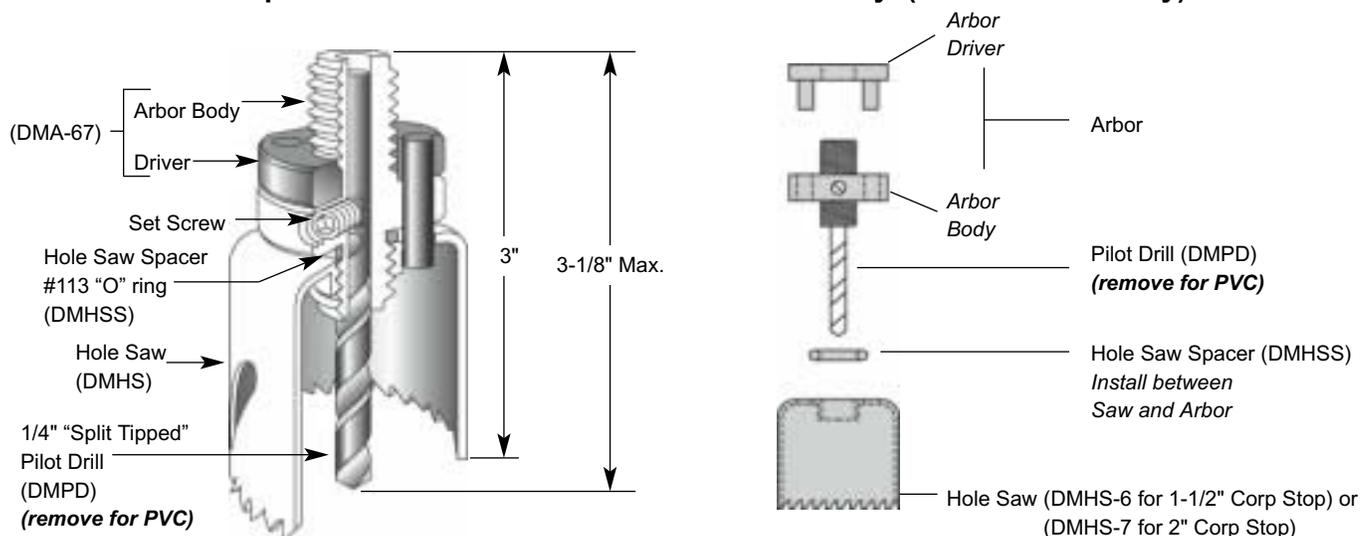
The Ford Drilling Machine, with its light-weight design and size, is ideal for making taps up to 1". The Ford Drilling Machine can be adapted for 1-1/2" and 2" taps. The following items will allow for OCCASIONAL taps for 1-1/2" and 2". Please note that the Ford Drilling Machine is not recommended for making routine taps larger than 1".

| CATALOG NUMBER | DESCRIPTION |
|-----------------------------------|---|
| ADAPTERS | |
| DMA1-6 | 1-1/2" FIP Adapter with gaskets |
| DMA2-6 | 1-1/2" Flare Copper Adapter with gaskets |
| DMA4-6-Q | 1-1/2" CTS Quick Joint Adapter with gaskets |
| DMA1-67 | 1-1/2" Adapter with 2" FIP threads for use with 1-1/2" FB800 and FB900 Corp Stops |
| DMA1-7 | 2" FIP Adapter with gaskets |
| DMA2-7 | 2" Flare Copper Adapter with gaskets |
| DMA4-7-Q | 2" CTS Quick Joint Adapter with gaskets |
| DMA1-78 | 2" Adapter with 2-1/2" FIP threads for use with 2" FB800 and FB900 Corp Stops |
| DMA6-3-Q | 3/4" PE Pipe Quick Joint Adapter with gaskets |
| DMA6-4-Q | 1" PE Pipe Quick Joint Adapter with gaskets |
| DMA8-6 | 1-1/2" Adapter with 1-1/2" MIP threads for use with 1-1/2" FB1600 and FB1700 Corp Stops |
| DMA8-7 | 2" Adapter with 2" MIP threads for use with 2" FB1600 and FB1700 Corp Stops |
| HOLE SAWS | |
| DMHS-6 | 1-3/8" Hole Saw for 1-1/2" Corp Stop (fits Arbor DMA-67) |
| DMHS-7 | 1-7/8" Hole Saw for 2" Corp Stop (fits Arbor DMA-67) |
| DMHSS | Package of 6 Hole Saw Spacers |
| DMA-67 | Arbor only for use with Boring Bar DMBB-67 (Includes DMPD Pilot Drill & DMHSS Spacer) |
| SHELL CUTTERS | |
| DMSC-6-DI | 1-3/8" Shell Cutter for Ductile Iron Pipe, 1-1/2" Corp Stop (fits Boring Bar DMBB-67) (Includes DMPD Pilot Drill) |
| DMSC-6-PVC | 1-3/8" Shell Cutter for PVC Pipe, 1-1/2" Corp Stop (fits Boring Bar DMBB-67) |
| DMSC-7-DI | 1-7/8" Shell Cutter for Ductile Iron Pipe, 2" Corp Stop (fits Boring Bar DMBB-67) (Includes DMPD Pilot Drill) |
| DMSC-7-PVC | 1-7/8" Shell Cutter for PVC Pipe, 2" Corp Stop (fits Boring Bar DMBB-67) |
| BORING BAR AND PILOT DRILL | |
| DMBB-67 | Boring Bar for 1-1/2" and 2" Corp Stops |
| DMPD | 1/4" Pilot Drill for use with DMSC-6-DI, DMSC-7-DI or DMA-67 Arbor |
| ADAPTER GASKETS | |
| GT-119 | Inside gasket for DMA6-3-Q Adapter |
| GT-128 | Inside gasket for DMA6-4-Q Adapter |
| GT-126 | Inside gasket for DMA4-6-Q Adapter |
| GT-127 | Inside gasket for DMA4-7-Q Adapter |
| GT-143 | Inside gasket for DMA2-6 and DMA1-67 Adapters |
| GT-142 | Inside gasket for DMA1-6 Adapter |
| GT-144 | Inside gasket for DMA1-7 Adapter |
| GT-132 | Inside gasket for DMA2-7 and DMA1-78 Adapters |

Note: 1-3/8" and 1-7/8" DMHS hole saws REQUIRE a DMA-67 Arbor

1-3/8" and 1-7/8" DMSC shell cutters ATTACH to the DMBB-67 boring bar and will not fit a DMA-67 Arbor

Example of an DMA-67 1-1/2" & 2" Arbor Assembly (for Hole Saws only)



The Ford Drilling Machine

Option Selection Charts: Cutting Tools, Adapters and Boring Bars

CUTTING TOOLS: To select a cutting tool, choose the proper column for type of water main. Select the Nominal Hole Size. The proper cutting tool catalog number is in the far left column.

| CATALOG NUMBER | DESCRIPTION | ACTUAL CUTTER DIAMETER | TYPE OF WATER MAIN (NOMINAL HOLE SIZE) | | |
|--|---|------------------------|--|--------|-----------------|
| | | | PVC | IRON | ASBESTOS CEMENT |
|  3/4" & 1" Drill |  3/4" & 1" Shell Cutter | DMD-1 | | 1/2" | 1/2" |
| | | DMD-2 | | 5/8" | 5/8" |
| | | DMD-3 | | 3/4" | 3/4" |
| | | DMD-4A | | 1" | 1" |
|  1-1/2" & 2" Shell Cutter for PVC |  1-1/2" & 2" Shell Cutter for Ductile Iron | DMSC-1 | 1/2" | | |
| | | DMSC-3 | 3/4" | | |
| | | DMSC-4A | 1" | | |
| | | DMSC-6-DI | | 1-1/2" | |
| | | DMSC-6-PVC | 1-1/2" | | 1-1/2" |
| | | DMSC-7-DI | | 2" | |
| | | DMSC-7-PVC | 2" | | 2" |
|  1-1/2" & 2" Hole Saw | | DMHS-6 | 1-1/2" | 1-1/2" | 1-1/2" |
| | | DMHS-7 | 2" | 2" | 2" |

ADAPTERS: To select an adapter, choose the proper column for corporation body outlet thread type (see Catalog Section A to determine a Corporation Body Outlet Thread type and size). Select the desired thread size. The catalog number for the proper adapter is in the far left column.

| CATALOG NUMBER | CORPORATION BODY OUTLET THREAD TYPE (NOMINAL THREAD SIZE) | | | |
|--|---|---------------------------------|----------------------------|---------------------------------------|
| | FLARE COPPER THREAD | MALE IRON PIPE THREADS | SPECIAL QUICK JOINT THREAD | FEMALE IRON PIPE THREAD |
|  Adapter for Flare Copper | DMA2-1 | 1/2" | | |
| | DMA2-2 | 5/8" | | |
| | ** DMA2-3 | 3/4" | | |
| | ** DMA2-4 | 1" | | |
| | DMA2-5 | 1-1/4" | | |
| | DMA2-6 | 1-1/2" | | |
| | DMA2-7 | 2" | | |
|  Adapter for Male Iron Pipe | DMA1-3 | 3/4" | | |
| | DMA1-4 | 1" | | |
| | DMA1-5 | 1-1/4" | | |
| | DMA1-6 | 1-1/2" | | |
| | DMA1-67 | 2" (1-1/2" FB800/900 Ballcorps) | | |
| | DMA1-7 | 2" | | |
| | DMA1-78 | 2-1/2" (2" FB800/900 Ballcorps) | | |
| | DMA4-5-Q | | 1-1/4" CTS Quick Joint | |
| | DMA4-6-Q | | 1-1/2" CTS Quick Joint | |
| | DMA4-7-Q | | 2" CTS Quick Joint | |
| | DMA6-3-Q | | 3/4" PEP Quick Joint | |
| | DMA6-4-Q | | 1" PEP Quick Joint | |
| | DMA8-6 | | | 1-1/2" (1-1/2" FB1600/1700 Ballcorps) |
| | DMA8-7 | | | 2" (2" FB1600/1700 Ballcorps) |

BORING BARS: Select the boring bar that corresponds to the cutting tool(s) that meet your drilling requirements. The catalog number for the proper boring bar is in the far left column.

| CATALOG NUMBER | CORRESPONDING CUTTING TOOLS |
|---|--|
|  DMBB-1 | DMD-1, DMSC-1 |
| ▲** DMBB-3 | DMD-3, DMSC-3, |
| ▲** DMBB-4A | DMD-4A, DMSC-4A |
| * DMBB-67 | DMSC-6-DI, DMSC-6-PVC, DMSC-7-DI, DMSC-7-PVC |
| * DMBB-67 & DMA-67 | DMHS-6, DMHS-7 |

NOTES: * DMA-67 (Drilling Machine Arbor) is required for 1-1/2" and 2" Hole Saws, DMHS-6 and DMHS-7
 ** This item is included in the complete Drilling Machine Kit, **Catalog Number DMK-1-12A.**
 ▲ This item is included in the Drilling Machine Only, **Catalog Number DMO-1-9A.**

Operating Instructions

CAUTION: Always follow pipe manufacturer's recommendations to protect from injury.

1. Remove the Drilling Machine from the Tool Box (DMTB) and lay it on a flat surface. Back the Feedscrew (DMHF) out until the end is flush with the Yoke Assembly (DMY).



2. Select the diameter of Boring Bar (DMBB) which will pass through the corporation stop when it is open. Attach the Drill (DMD) to the Boring Bar (DMBB) and lightly tighten with the adjustable wrenches.



3. Insert the Boring Bar (DMBB) into the body of the machine until the shoulder hits the stop. Gently tighten the Packing Bushing (DMPB).



4. Select the Adapter (DMA) that matches the outlet threads on the corporation stop. Attach the Adapter (DMA) to the bottom of the Drilling Machine.



5. Mount the pipe saddle and corporation stop on the water main and tighten the saddle straps. Mount the Drilling Machine onto the corporation stop. **Check to be sure the corporation stop is fully open.**



6. Carefully lower the Drill (DMD) until it touches the water main. Attach the Ratchet (DMRW) to the top of the Boring Bar (DMBB). Raise the Yoke (DMY) until the Feedscrew (DMHF) is centered over the Boring Bar (DMBB). Place a few drops of oil on the point of the Feedscrew (DMHF) and mate the point with the center of the Boring Bar (DMBB). Open Chip Flushing Port (if equipped.)



7. Rotate the Ratchet (DMRW) clockwise **only** while applying a **light** turn of the Feedscrew (DMHF). Make at least two (2) quarter turns of the Ratchet (DMRW) before applying more pressure on the Feedscrew (DMHF). Use Feedscrew (DMHF) as follower only and exert light pressure on the Boring Bar (DMBB). When drilling PVC pipe use a steady continuous cutting action and do **not** stop until the cutter is completely through the pipe. With PVC it is important to continue cutting until the Shell Cutter has penetrated the wall of the water main and the Boring Bar (DMBB) shoulder contacts the bottom stop in the Adapter (DMA).



8. Slowly reverse the Feedscrew (DMHF) and allow the Boring Bar (DMBB) to back out until it hits the top stop in the machine. Close the corporation stop and release the entrapped pressure before removing the Drilling Machine from the corporation stop.



IMPORTANT - GENERAL MAINTENANCE

1. Clean the tools and lightly oil the Boring Bar (DMBB) and Cutters before returning them to the Tool Box (DMTB).
2. When using the PVC Shell Cutter (DMSC), the assembly and operation is the same as using a Drill (DMD). For 3/4" PVC taps, use the 11/16" Shell Cutter (DMSC-3). For 1" PVC taps, use the 7/8" Shell Cutter (DMSC-4A).
3. Check the Cutters regularly for sharpness. Sharp Cutters will assure an easy tap. Professional sharpening is a good investment because the cutting edge will have the proper angle, lip clearance, and chisel point to match the hardness of the pipe.
4. When the day's work is completed, always dismantle and replace the Drilling Machine in the Tool Box so nothing will be lost or damaged. **Cutters will break easily if the machine assembly is dropped or mishandled.** Simple preventative maintenance will make this device last for many years at a minimal cost per tap.

Assembly Instructions for 1 1/2" and 2" Shell Cutters

For drilling Cast Iron, Ductile, PVC and A/C Pipe

1. Insert the Boring Bar (DMBB-67) into the Drilling Machine (Fig. 1).
2. Select the Adapter (DMA) that matches the outlet threads of the corporation stop and attach it to the bottom of the Drilling Machine (Fig. 2).
3. Follow the drilling procedure as outlined on page 6. **When a Shell Cutter is cutting into the pipe, NEVER reverse the direction of rotation or the carbide teeth will be destroyed. ALWAYS TURN CLOCKWISE.**
4. When making dry taps on Cast Iron, Ductile or A/C pipe, the 1/4" "Split Tipped" Pilot Drill should be used for coupon retention.

Fig. 1

Insert the Boring Bar into the Drilling Machine.



Fig. 2

Select the proper Drilling Machine Adapter and attach it to the Drilling Machine.



Fig. 3

Attach the Shell Cutter to the end of the Boring Bar.



Section AB

Ford Drilling Machine

Warranty

All merchandise is warranted to be free from defects in material and factory workmanship. We will provide, free of charge, new products in equal quantities for any that prove defective within one year from date of shipment from our factory. Manufacturer shall not be liable for any loss, damage, or injury, direct or consequential, arising out of the use of or the inability to use the product. Before using, user shall determine the suitability of the product for his intended use and user assumes all risk and liability whatever in connection therewith. No claims for labor or consequential damage will be allowed. The foregoing may not be changed except by agreement signed by an officer of the manufacturer.

Please Note:

The Ford Meter Box Company considers the information in this catalog to be correct at the time of publication. Items and option availability, including specifications, are subject to change without notice. Please verify that your product information is current.



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