

Please read and save these instructions. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain instructions for future reference.

# Dayton® Rotary Machine

## Description

Dayton Rotary Machine is hand operated and will form sheet metal up to 22 gauge (.030 thick) mild steel (or equivalent). The rotary machine is constructed of cast iron and steel ensuring minimum deflection of the workpiece during forming operations. Six die sets are included allowing the following operations to be performed: large and small turning, burring, wiring, ogee beading and crimping.

## Unpacking

Refer to Figure 1 and 4.

Check for shipping damage. If damage has occurred, a claim must be filed with carrier. Check for completeness. Immediately report missing parts to dealer.

The rotary machine comes assembled as one unit with one die set attached.

Additional parts which need to be fastened to the tool should be located and accounted for before assembling:

- A. Base assembly
- B. Crank handle assembly
- C. Adjusting handle assembly
- D. Wrench
- E. Spacers, 2 each
- F. Small turning die set
- G. Ogee bead die set
- H. Burring die set
- I. Large turning die set
- J. Wiring die set
- K. Crimping die set

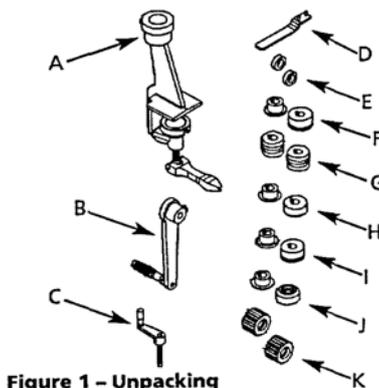


Figure 1 - Unpacking

**IMPORTANT:** Rotary machine and dies are coated with a protectant. To ensure proper fit and operation, remove coating. Coating is easily removed with mild solvents, such as mineral spirits, and soft cloth. Avoid getting cleaning solution on paint or any of the rubber or plastic parts. Solvents may deteriorate these finishes. Use soap and water on paint, plastic or rubber components. After cleaning, cover all exposed surfaces with a light coating of oil.

**▲WARNING** Never use highly volatile solvents. Non-flammable solvents are recommended to avoid possible fire hazard.

## Specifications

Refer to Figure 2.

### ROTART MACHINE

Maximum thickness .....	.030" mild steel
Throat length .....	6"
Material stop range .....	0-6"
Maximum thickness of mounting surface .....	2"
Weight .....	49 lbs

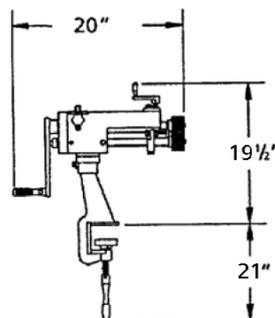


Figure 2 - Dimensions

## General Safety Information

**▲WARNING** For your own safety, read all of the instructions and precautions before operating tool.

**▲CAUTION** Always follow proper operating procedures as defined in this manual even if you are familiar with use of this or similar tools. Remember that being careless for even a fraction of a second can result in severe personal injury.

## BE PREPARED FOR JOB

1. Wear proper apparel. Do not wear loose clothing, gloves, neckties, rings, bracelets or other jewelry which may get caught in moving parts of machine.
2. Wear protective hair covering to contain long hair.
3. Wear safety shoes with non-slip soles.
4. Wear safety glasses complying with United States ANSI Z87.1. Everyday glasses have only impact resistant lenses. They are NOT safety glasses.
5. Be alert and think clearly. Never operate tools when tired, intoxicated or when taking medications that cause drowsiness.

## PREPARE WORK AREA FOR JOB

1. Keep work area clean. Cluttered work areas invite accidents.
2. Work area should be properly lighted.
3. Keep visitors at a safe distance from work area.
4. Keep children out of workplace. Make workshop childproof. Use padlocks to prevent any unintentional use of tools.

# Dayton<sup>®</sup> Rotary Machine

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**TOOL SHOULD BE MAINTAINED**

1. Consult manual for specific maintaining and adjusting procedures.
2. Keep tool lubricated and clean for safest operation.
3. Remove adjusting tools. Form habit of checking to see that adjusting tools are removed before using machine.
4. Keep all parts in working order. Check to determine that the guard or other parts will operate properly and perform their intended function.
5. Check for damaged parts. Check for alignment of moving parts, binding, breakage, and mounting or any other condition that may affect a tool's operation.
6. A guard or other damaged part should be properly repaired or replaced. Do not perform makeshift repairs. (Use parts list provided to order repair parts.)

**KNOW HOW TO USE TOOL**

1. Use right tool for job. Do not force tool or attachment to do a job for which it was not designed.
2. Keep hands out of path of shearer blades and clear from male and female dies.
3. The maximum capacity of this machine is 22 gauge (.030") mild steel or equivalent. Exceeding capacity may be dangerous to operator and damage may occur to machine.
4. Bolt machine to sturdy stand that is bolted to floor to prevent sliding or tipping of machine.

**Assembly**

Refer to figure 4.

**MOUNT BASE ASSEMBLY**

Mount base assembly (Ref. Nos. 1-7) to a suitable area on workbench. The thickness of the mounting surface cannot exceed 2". Secure in position using clamp handle (Ref. No. 4)

**MOUNT ROTARY MACHINE TO BASE**

Mount rotary machine body (Ref. No. 18) to base (Ref. No. 1). Secure with hex head bolt (Ref. No. 7).

**MOUNT HANDLE TO MACHINE**

Mount the crank assembly (Ref. Nos. 8-12) to the driving shaft (Ref. No. 53). Secure with hex head bolt (Ref. No. 8). Mount the adjusting handle assembly (Ref. Nos. 38-40, 60-61) into top of body (Ref. No. 18).

**Installation**

Machine should be installed on a level surface, with proper lighting. Machine is to be bench mounted. Be sure to provide clearance for crank arm rotation. Area around machine should be clear of scraps, oil or dirt. Apply a suitable non-skid material to floor.

**Operation**

Refer to Figures 3 and 4.

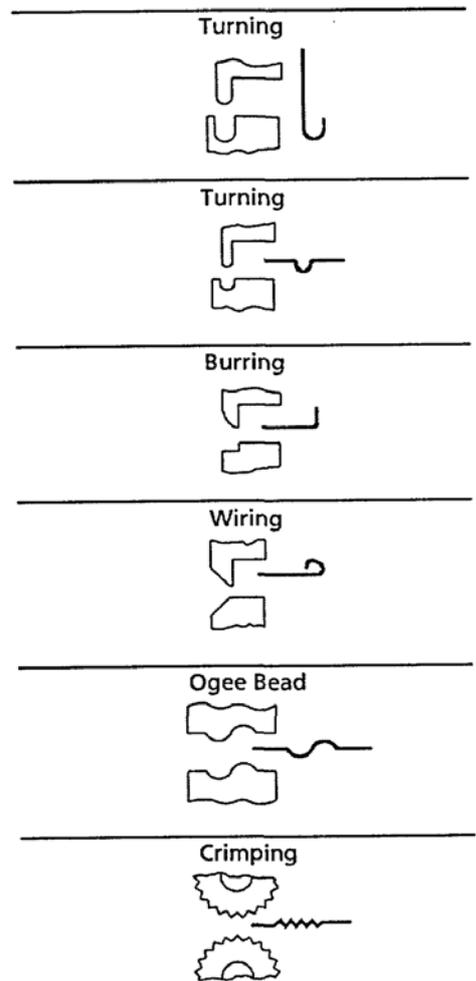
Be sure to keep hands clear of forming dies when rotating crank handle. The maximum capacity of the machine is 22 gauge (.030") mild steel or equivalent. Below is an equivalency chart for use when working with material other than mild steel:

**EQUIVALENCY CHART**

Mild steel .....	.030"
Stainless steel .....	.020"
SAE 1050 cold rolled steel .....	.024"
Aluminum .....	.055"
Soft brass .....	.046"
½ Hard brass .....	.030"
Annealed phosphor bronze.....	.034"
Soft copper .....	.046"
Hard copper .....	.034"

1. Select the die set required for the operation to be performed.
2. Place spacers (Ref. No. 50), dies and retaining nuts (Ref. No. 52) onto the driving and driven shafts (Ref. Nos. 47 and 53). Tighten the retaining nuts with wrench (Ref. No. 59 (provided).

NOTE: Some die sets require two spacers on each shaft.



**Figure 3 – Profiles of Roll Dies included with Rotary Machine**

# Model 13W880

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### Operation (Con't)

3. Adjust the position of the upper die according to thickness of the workpiece by using the adjusting handle (Ref. No. 60).
4. Adjust the horizontal position of the upper die by rotating the adjusting nut (Ref. No. 27).
5. Adjust the stop gauge (Ref. Nos. 10 and 15) or the stop plate (Ref. No. 14) to the required size. The required size is the distance the form will be from the edge of the metal. Use the stop gauge for sheet and use the stop plate for cylinders. The stop gauge can be finely adjusted using the thumb nuts (Ref. No. 13).

6. Insert metal between dies and slowly rotate the crank arm (Ref. No. 9). Check the workpiece. It may be necessary to fine tune the adjustments made in steps 3 and 4. Repeat steps 3 and 4 until the correct form is obtained.

### Maintenance

Refer to Figure 4.

### LUBRICATION

1. All exposed iron surfaces should be coated with light oil to prevent rusting. Use a mutlli-purpose or bearing grease for lubrication.

2. The adjusting block (Ref. No. 35) should he greased.
3. Oil the driving shaft (Ref. No. 53) through the oil ports (Ref. Nos. 17 and 62) monthly.

## Troubleshooting Chart

Symptom	Possible Cause(s)	Corrective Action
Dies cut through metal	1. Dies are too close together	1. Adjust die position using adjusting handle (Ref. No. 60)
Dies do not make the form correctly	1. Dies are improperly adjusted	1. Adjust die position using adjusting nut (Ref. No. 27)
	2. Thumb screw loose (Ref. No. 36)	2. Tighten thumb screw
	3. Workpiece material too thick	3. Do not exceed machine capacity of .030" mild steel or equivalent, See Equivalency Chart, page 2
Crank arm difficult to turn	1. Adjusting block (Ref. No. 35) loose or not in proper position	1.Adjust set screws (Ref. No. 21) and secure by tightening lock nuts (Ref. No. 20). Loosen knob (Ref. No. 22) and adjust position of adjusting block (Ref. No. 35) by turning adjusting bolts (Ref. No. 33). Retighten knob (Ref. No 22).
	2. Improper lubrication	2.Lubrication properly, See Lubrication, page 3

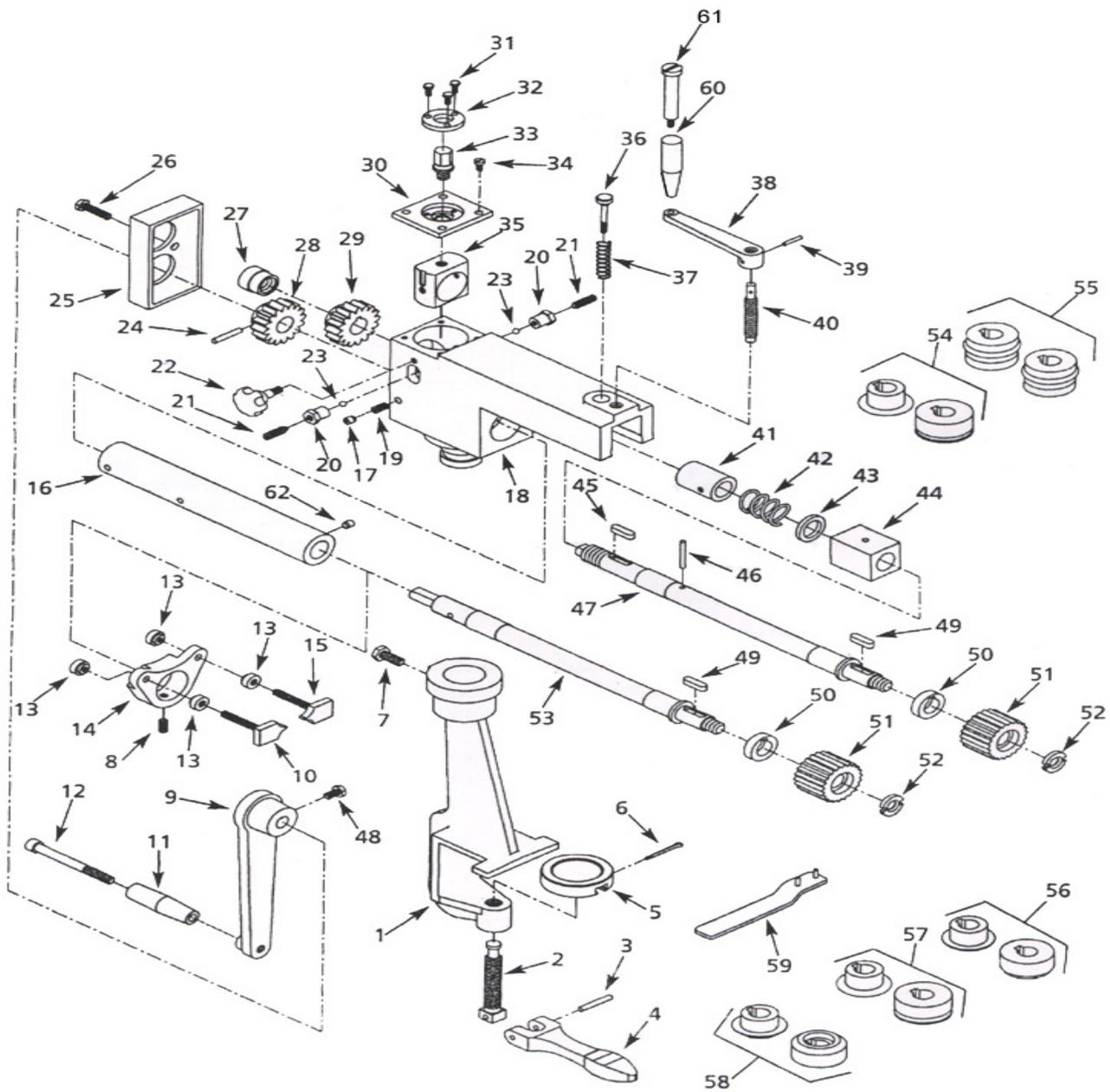
**For Repair Parts, call 1-800-323-0620**

**24 hours a day – 365 days a year**

Please provide following information:

- Model number
- Serial number (if any)
- Part description and number as shown in parts list

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**Figure 1 – Repair Parts Illustration for Rotary Machine**

# Repair Parts List for Rotary Machine – 13W880

Ref. No.	Description	Part No.	QTY
1	Base	†	1
2	Clamp bolt M16X100	†	1
3	6 x 45mm Dowel Pin	†	1
4	Clamp handle	†	1
5	Clamp head	†	1
6	3 x 36 mm Cotter pin	†	1
7	10-1.50 x 25mm Dog point bolt	*	1
8	8-1.25 x 8mm Set Screw	*	1
9	Crank arm	†	1
10	Stop gauge (left)	†	1
11	Handle	TT40807011G	1
12	Handle bolt	TT40807012G	1
13	Thumb nut M8	†	4
14	Stop plate	†	1
15	Stop gauge (right)	†	1
16	Shaft sleeve	†	1
17	Oil port	†	1
18	Body	†	1
19	Set Screw (M8 x 10)	†	1
20	Lock Nut (M8 x 20)	†	2
21	Set Screw (M8 x 10)	†	2
22	Knob	†	1
23	6mm Steel ball	†	2
24	5 x 5.6 x 30mm Taper Pin	†	1
25	Cover	†	1
26	8-1.25 x 35mm Hex head bolt	*	2
27	Adjusting nut	†	1
28	Driving gear	†	1
29	Driven gear	†	1
30	Square plate	†	1
31	5-0.8 x 8mm Pan head screw	*	3

Ref. No.	Description	Part No.	QTY
32	Round plate	†	1
33	Adjusting bolt	†	1
34	6-1.0 x 16mm Flat head screw	*	4
35	Adjusting block	†	1
36	Thumb screw (M6 x 55)	†	1
37	Spring	†	1
38	Adjusting handle	†	1
39	3 x 3.4x 22mm Taper Pin	†	1
40	Adjusting Screw	†	1
41	Sleeve	†	1
42	Spring	†	1
43	Collar	†	1
44	Adjusting block	†	1
45	6 x6 20mm key	†	1
46	5 x 35mm Dowel Pin	†	1
47	Driven shaft	†	1
48	8-1.25 x 20mm Hex head bolt	*	1
49	6 x6 25mm Key	†	2
50	Spacer	†	4
51	Crimping roll dies (Set of 2)	TT40807051G	1
52	Retaining nut	†	1
53	Driving shaft	†	1
54	Small turning roll dies (Set of 2)	TT40807054G	1
55	Ogee bead roll dies (Set of 2)	TT40807055G	1
56	Burring roll dies (Set of 2)	TT40807056G	1
57	Large turning roll dies (Set of 2)	TT40807057G	1
58	Wiring roll dies (Set of 2)	TT40807058G	1
59	Wrench	†	1
60	Handle	†	1
61	Handle bolt	†	1
62	Oil port	†	1

(†) Not available as repair part.

(\*) Standard hardware item, available locally.





# Dayton<sup>®</sup> Rotary Machine

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## LIMITED WARRANTY

### DAYTON ONE-YEAR LIMITED WARRANTY.

DAYTON<sup>®</sup> Rotary Machine, MODELS COVERED IN THIS MANUAL, ARE WARRANTED BY DAYTON ELECTRIC MFG. CO. (DAYTON) TO THE ORIGINAL USER AGAINST DEFECTS IN WORKMANSHIP OR MATERIALS UNDER NORMAL USE FOR ONE YEAR AFTER DATE OF PURCHASE. ANY PART WHICH IS DETERMINED TO BE DEFECTIVE IN MATERIAL OR WORKMANSHIP AND RETURNED TO AN AUTHORIZED SERVICE LOCATION, AS DAYTON DESIGNATES, SHIPPING COSTS PREPAID, WILL BE, AS THE EXCLUSIVE REMEDY, REPAIRED OR REPLACED AT DAYTON'S OPTION. FOR LIMITED WARRANTY CLAIM PROCEDURES, SEE "PROMPT DISPOSITION" BELOW. THIS LIMITED WARRANTY GIVES PURCHASERS SPECIFIC LEGAL RIGHTS WHICH VARY FROM JURISDICTION TO JURISDICTION.

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**Manufactured for Dayton Electric Mfg. Co., 5959 W. Howard St., Niles, Illinois 60714-4014 U.S.A.**