

Dayton® General Purpose Solenoid Valves Normally Closed, 2-Way

COIL ELECTRICAL RATINGS (50/60 HZ) @ 208-240 VAC

Models	Inrush @ 60 Hz		Holding @ 60 Hz		Watts
	Volt Amps	Current (Amps)	Volt Amps	Current (Amps)	
1A576 thru 1A579	24	0.10	19	0.08	9.0
1A580, 1A581	26	0.11	19	0.08	9.1
3A433, 3A434, 3A436, 4A697, 4A699, 4A700	31	0.12	19	0.08	12.0

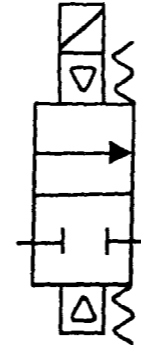


Figure 2 —
Operational Schematic

DEFECTS OR OTHER REPRODUCTIVE HARM. Notice to California owners: Under California ballot measure proposition 65, California residents must be notified if a product contains more than 1/1000 of the safe lifetime exposure level of a carcinogen or birth defect causing agent. More than 300 chemicals are on the list. This valve contains brass parts. Lead is present in all forms of brass. To minimize exposure to lead in all water systems, don't drink hot water and don't drink the first glass of water from a system. Direct any questions to Grainger's Technical Support Department.

General Safety Information

1. Read instructions thoroughly. Failure to comply may result in valve failure, system damage or personal injury.
2. Use only fluids compatible with valve materials of construction.
3. Do not use a solenoid valve on any system where system pressure can exceed maximum working pressure of the valve.
4. Do not utilize a solenoid valve as a safety shut off.
5. Do not exceed maximum operating pressure differential; valve will fail to open.
6. Proper valve sizing is important. An oversized valve may result in hammering or chattering. An undersized solenoid valve may considerably reduce system capacity.
7. Before energizing valve, be sure source voltage and frequency matches that on coil. Do not energize coil unless coil is securely attached to valve. See Installation.
8. Do not use solenoid valve where ambient temperature may exceed 40°C (104°F). Prolonged use in excessive ambient temperature or humidity may damage coils.
9. Do not dent or bend or use enclosing tube as lever. A damaged enclosing tube may result in coil burnout or inoperative valve.
10. Foreign matter in the valve may

result in seat leakage, sticking open or closed, or coil burnout.

⚠ WARNING *Disconnect power and depressurize system before servicing. If the power disconnect is out-of-sight, lock it in the off position and tag to prevent unexpected application of power.*

11. Follow all local electrical and safety codes, the National Electrical Code (NEC) and the Occupational Safety & Health Act (OSHA).
12. The solenoid valve must be securely grounded by connecting a ground wire to the bare metal of the valve and wiring it to a suitable electrical ground, such as a grounded water pipe, a grounded metallic raceway or a ground wire system.
13. Solenoid valves have a finite life. Normal failure modes include valve's failure to open or valve's failure to close. Installations where property damage and/or personal injury might result require further installation of back up systems.

⚠ WARNING *Do not use with flammable or explosive fluids or gases. Do not use in explosive atmospheres as defined by The National Electric Code (NEC).*

14. **NOTICE TO OWNERS: WARNING — THIS PRODUCT CONTAINS A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA TO CAUSE BIRTH**

Installation

1. For ease of installation, the Dayton solenoid valve can be installed in any position. Gravity will not affect valve operation, as all Dayton valves are spring loaded.

NOTE: Valves can be operated in any position, but upright mounting reduces the chance of malfunction caused by the collection of foreign material in the top of the enclosing tube.

2. The solenoid coil can be rotated 360° for ease of wiring. If possible, do not reduce the length of the solenoid coil wire leads, so that if it becomes necessary to remove coil at a later date (for valve cleanout, etc.), wire leads will not have to be disconnected.
3. To allow for removal of the solenoid coil without removing the valve from its piping, allow at least two inches of clearance above the solenoid.
4. Install the valve with the flow arrow on the valve body corresponding to direction of flow thru piping.

COIL INSTALLATION INSTRUCTIONS

⚠ WARNING *Before removing coil from valve, disconnect electrical power source! Failure to do so will cause coil to burn out or could result in personal injury.*

1. Verify coil type, voltage and frequency. This information appears on the coil nameplate.

Models 1A576 thru 1A581, 3A433, 3A434, 3A436, 4A697, 4A699 and 4A700

- Place coil over the enclosing tube and press down firmly until clip engages. Coil may be rotated 360° for easy wiring.

WIRING

Be sure your wiring conforms to all local and national electric codes and that the valve is grounded properly. A grounding screw is provided in the junction box for connecting the ground wire.

CAUTION Do not mistake a power lead for a ground wire when making the connection to the junction box grounding screw. Be sure the wire you connect to the grounding screw is the ground wire.

TESTING

- Apply correct voltage to solenoid valve and cycle solenoid several times. A distinct click should be heard each time the solenoid is energized.
- Pressurize valve and check for leaks.

NOTE: Solenoid valves are equipped with a continuous-duty solenoid coil, which, when energized for an extended period of time, becomes hot to the touch. This is normal.

Troubleshooting Chart

Symptom	Possible Cause(s)	Corrective Action
Valve will not open	<ol style="list-style-type: none"> Valve improperly assembled Movement of plunger or diaphragm restricted due to: <ol style="list-style-type: none"> Corroded parts; Dirt lodged inside of enclosing tube; Dented or bent enclosing tube; Distorted body due to: <ol style="list-style-type: none"> Crushing in vise Excess or uneven torque on flange bolts Overtightening of inlet or outlet piping Coil burnout Damaged Wiring Coil assembly improperly matched to power supply 	<ol style="list-style-type: none"> Assemble parts in proper position, making certain none are missing from valve assembly <ol style="list-style-type: none"> Clean or replace as required Clean Replace enclosing tube Replace valve body See coil burnout, page 4. Replace coil assembly Check for loose or broken connections. Repair as needed Check coil assembly voltage, frequency, and current ratings against power supply ratings. Replace improper coil assembly with assembly of proper rating

Maintenance

WARNING Disconnect power and depressurize system before servicing. If power disconnect is out-of-sight, lock it in the off position and tag to prevent unexpected application of power.

- Periodically inspect valve for worn or damaged parts.
- Replace parts when necessary. Refer to parts illustration as an aid in disassembly and assembly.

CLEANING

Periodically clean valve to maintain peak operating conditions. Use Dayton degreasing solvent 2X726 or a similar solvent. Remove other foreign matter and deposits with air and a crocus cloth.

INSPECTION

- All internal metal parts should be clean and free of corrosion.
- All gaskets and diaphragms should be clean and permanently set or brittle.
- Check the enclosing tube for excessive wear, corrosion, and dents which would prevent free movement for the plunger.

- Check the valve seat for cleanliness and corrosion.
- Replace worn or damaged parts. Refer to parts list for ordering information.

Assembly

- Lubricate the gasket with a silicone base or similar lubricant.
- Ensure that all moving parts do not bind over the full length of travel.
- Assemble the valve as shown in the parts illustration.
- Tighten the capscrews to the torque values given in the chart below.
- Test valve as indicated in Step 6 of Installation.

CAPSCREW TORQUE CHART

MODELS	TORQUE
1A576, 1A577, 1A578	40 in-lbs
1A579	75 in-lbs
1A580, 1A581	30-35 ft-lbs
3A433, 4A699, 4A700	50 in-lbs
3A434, 3A436, 4A697	40 in-lbs

For Replacement Parts, call 1-800-323-0620

Please provide following information:

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

Address parts correspondence to:
 Parts Company of America
 1657 Sherman Road
 Northbrook, IL 60062-5362

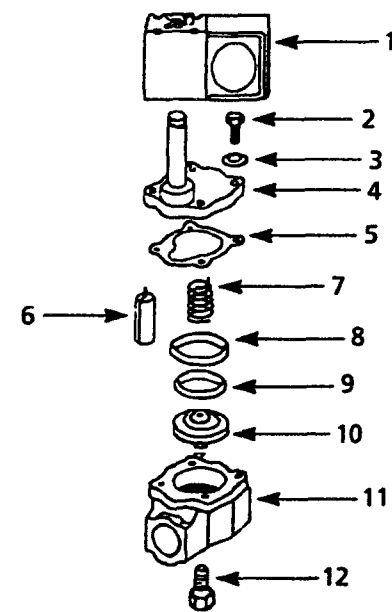


Figure 5 — Replacement Parts Illustration for Models 1A580 & 1A581

Replacement Parts List for Models 1A580 & 1A581

Ref. No.	Description	Part No.
1	Coil assembly 24 volts, 50/60 Hz (Standard)	6X542/3A439/4A705
	Coil assembly 120 volts, 50/60 Hz (Standard)	6X543/3A440/4A706
	Coil assembly 208-240 volts, 50/60 Hz	6X544/3A441/4A707
2	Capscrew (set 4)	PS160-5
3	Lockwasher (set 4)	PS1210-9
4	†Tube assembly for 1A580	X-13812-14
	†Tube assembly for 1A581	X-13816-12
5	Gasket	▲
6	Plunger & spring assembly	▲
7	Piston spring	▲
8	Piston ring	▲
9	Piston ring expander	▲
10	Piston	▲
11	Valve body	□
12	Piston stem guide for 1A580	11210-3
	Piston stem guide for 1A581	11210-2
▲	Repair kit for Model 1A580	K1282
▲	Repair kit for Model 1A581	K1283

(□) Not available as a replacement part. Purchase new unit.
 (▲) Includes top plate assembly.

Replacement Parts List for Models 3A433, 4A699 & 4A700

Ref. No.	Description	Part No.
1	Coil assembly:	
	24 volt	6X542/3A439
	120 volt	6X543/3A440
	208-240 volt	6X544/3A441
2	Enclosing tube assembly	X22039-7
3	Plunger & spring assembly	X13805-1
4	O-ring	▲
5	Piston	▲
6	Body	□
▲	Repair kit	K1262

(□) Not available as a replacement part. Purchase new unit.
 (▲) Includes top plate assembly.

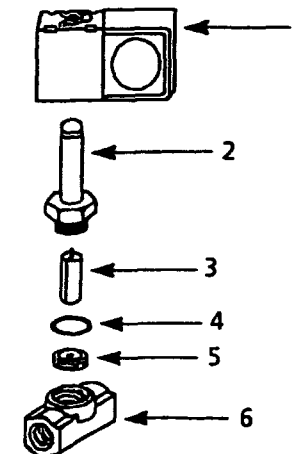
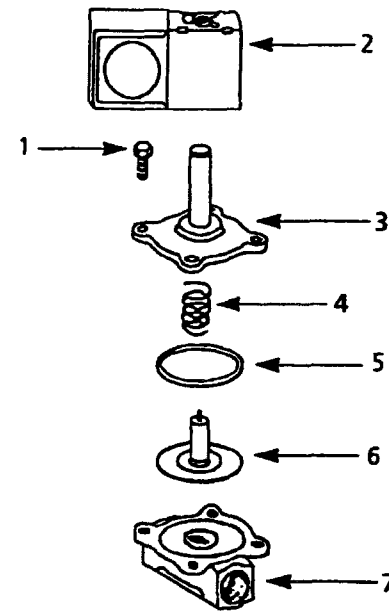


Figure 6 — Replacement Parts Illustration for Models 3A433, 4A699 & 4A700

Replacement Parts List



Replacement Parts List for Models 3A434, 4A436 & 4A697

Ref. No.	Description	Part No.
1	Capscrew (set 4)	PS1546-1
2	Coil assembly:	
	24 volt	6X542/3A439
	120 volt	6X543/3A440
	208-240 volt	6X544/3A441
3	Enclosing tube assembly	X22204-1
4	Diaphragm spring	▲
5	Gasket	▲
6	Plunger & diaphragm assembly	▲
7	Body	□
▲	Repair kit	K1263

(□) Not available as a replacement part. Purchase new unit.

(▲) Includes top plate assembly.

Figure 7 — Replacement Parts Illustration for Models 3A434, 3A436 & 4A697

Limited Warranty

Dayton One-Year Limited Warranty. Dayton General purpose solenoid valves, Models 1A576 thru 1A581, 3A433, 3A434, 3A436, 4A697, 4A699 & 4A700, 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 state to state.

Limitation of Liability. To the extent allowable under applicable law, Dayton's liability for consequential and incidental damages is expressly disclaimed. Dayton's liability in all events is limited to and shall not exceed the purchase price paid.

Warranty Disclaimer. Dayton has made a diligent effort to illustrate and describe the products in this literature accurately; however, such illustrations and descriptions are for the sole purpose of identification, and do not express or imply a warranty that the products are merchantable, or fit for a particular purpose, or that the products will necessarily conform to the illustrations or descriptions.

Except as provided below, no warranty or affirmation of fact, expressed or implied, other than as stated in the "LIMITED WARRANTY" above is made or authorized by Dayton.

Product Suitability. Many states and localities have codes and regulations governing sales, construction, installation, and/or use of products for certain purposes, which may vary from those in neighboring areas. While Dayton attempts to assure that its products comply with such codes, it cannot guarantee compliance, and cannot be responsible for how the product is installed or used. Before purchase and use of a product, please review the product application, and national and local codes and regulations, and be sure that the product, installation, and use will comply with them.

Certain aspects of disclaimers are not applicable to consumer products; e.g., (a) some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you; (b) also, some states do not allow a limitation on how long an implied warranty lasts, consequentially the above limitation may not apply to you; and (c) by law, during the period of this limited warranty, any implied warranty of implied merchantability or fitness for a particular purpose applicable to consumer products purchased by consumers, may not be excluded or otherwise disclaimed.

Prompt Disposition. Dayton will make a good faith effort for prompt correction or other adjustment with respect to any product which proves to be defective within limited warranty. For any product believed to be defective within limited warranty, first write or call dealer from whom the product was purchased. Dealer will give additional directions. If unable to resolve satisfactorily, write to Dayton at address below, giving dealer's name, address, date, and number of dealer's invoice, and describing the nature of the defect. Title and risk of loss pass to buyer on delivery to common carrier. If product was damaged in transit to you, file claim with carrier.

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

Dayton®

Notes

Lined area for handwritten notes.



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® Solenoid Coils

Description

Dayton solenoid coils with junction box, conduit hub or spade terminals are readily accessible for wire splicing. Junction box models have snap on covers and 7/8" diameter conduit holes. Spade terminal models have 1/4" male spade terminals for use with female connectors and have an open frame housing.

These coils are for use only with Dayton valve models: 1A574 thru 1A583, 2A194 thru 2A196, 3A422 thru 3A438, 4A688 thru 4A697, 4A699 thru 4A701, 4A703 thru 4A704, and 4A776.

Serviceable without disturbing piping. Not for use in hazardous atmospheres.

Specifications

Model	Insulation*	Voltage AC	Hz	Shpg. Wt.
SPADE TERMINAL, OPEN FRAME TYPE				
3A439	B	24	50/60	0.8
3A449	B	120	50/60	0.8
3A441	B	208-240	50/60	0.8
JUNCTION BOX TYPE				
2A203	H	24	50/60	0.6
2A204	H	120	50/60	0.6
2A205	H	208-240	50/60	0.6
6X542	F	24	50/60	0.6
6X543	F	120	50/60	0.6
6X544	F	208-240	50/60	0.7
CONDUIT HUB TYPE				
4A705	F	24	50/60	0.8
4A706	F	120	50/60	0.8
4A707	F	208-240	50/60	0.8

* Maximum operating temperatures are: Class B 266°F; Class H 356°F; Class F 311°F.

⚠ WARNING Do not exceed these temperature applications.

General Safety Information

1. Read instructions thoroughly. Failure to comply may result in coil failure, system damage or personal injury.
2. Use only fluids compatible with valve and coil materials of construction.

3. DO NOT energize coil unless coil is securely attached to valve. Be sure source voltage and frequency matches that on coil.

4. Prolonged use in excessive ambient temperature or humidity may damage coil.

⚠ WARNING Disconnect power and depressurize system before servicing. If the power disconnect is out-of-sight, lock it in the off position and tag to prevent unexpected application of power.

5. Follow all local electrical and safety codes, the National Electrical Code (NEC) and the Occupational Safety & Health Act (OSHA).

⚠ WARNING Do not use with flammable or explosive fluids or gases. Do not use in explosive atmospheres.

Installation

GENERAL

1. Verify selection of proper coil type, coil voltage and frequency. This information appears on coil name tag.
2. Before removing coil from valve, always disconnect electrical power source. Failure to do so will cause a good coil to burn out.
3. Remove original coil.
4. Install new coil over enclosing tube. Coil may be rotated 360° for easy wiring.

TO SECURE COIL

1. Enclosing tubes with threaded tops:
 - Replace coil, install star washer and replace locknut in that order.
 - Tighten locknut to firmly hold coil housing. Do not overtighten. Overtightening may result in damage to valve enclosing tube or the coil housing.
2. Enclosing tubes with non-threaded tops:
 - Install new coil assembly
 - Press down firmly on coil assembly to insure that it is properly secured.
 - Star washer should not be used.

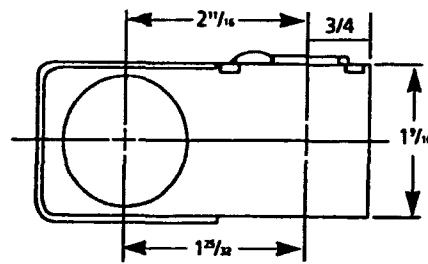


Figure 1 — Dimensions, Junction Box
Models 6X542, 6X543, 6X544, 2A203,
2A204 and 2A205

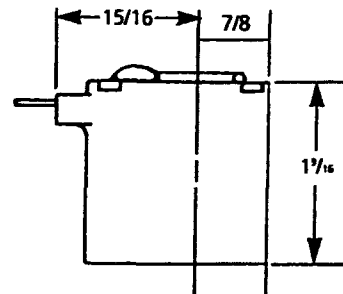


Figure 2 — Dimensions, Spade
Terminal, Open Frame Models 3A439,
3A440 and 3A441

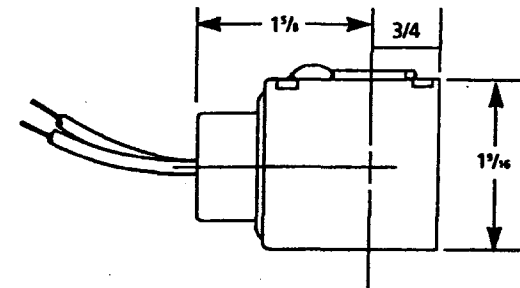


Figure 3 — Dimensions, Conduit Hub
Models 4A705, 4A706 and 4A707

Limited Warranty

Dayton One-Year Limited Warranty. Solenoid coils, Models 2A203 thru 2A205, 3A439 thru 3A441, 6X542 thru 6X544, and 4A705 thru 4A707, 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 state to state.

Limitation of Liability. To the extent allowable under applicable law, Dayton's liability for consequential and incidental damages is expressly disclaimed. Dayton's liability in all events is limited to and shall not exceed the purchase price paid.

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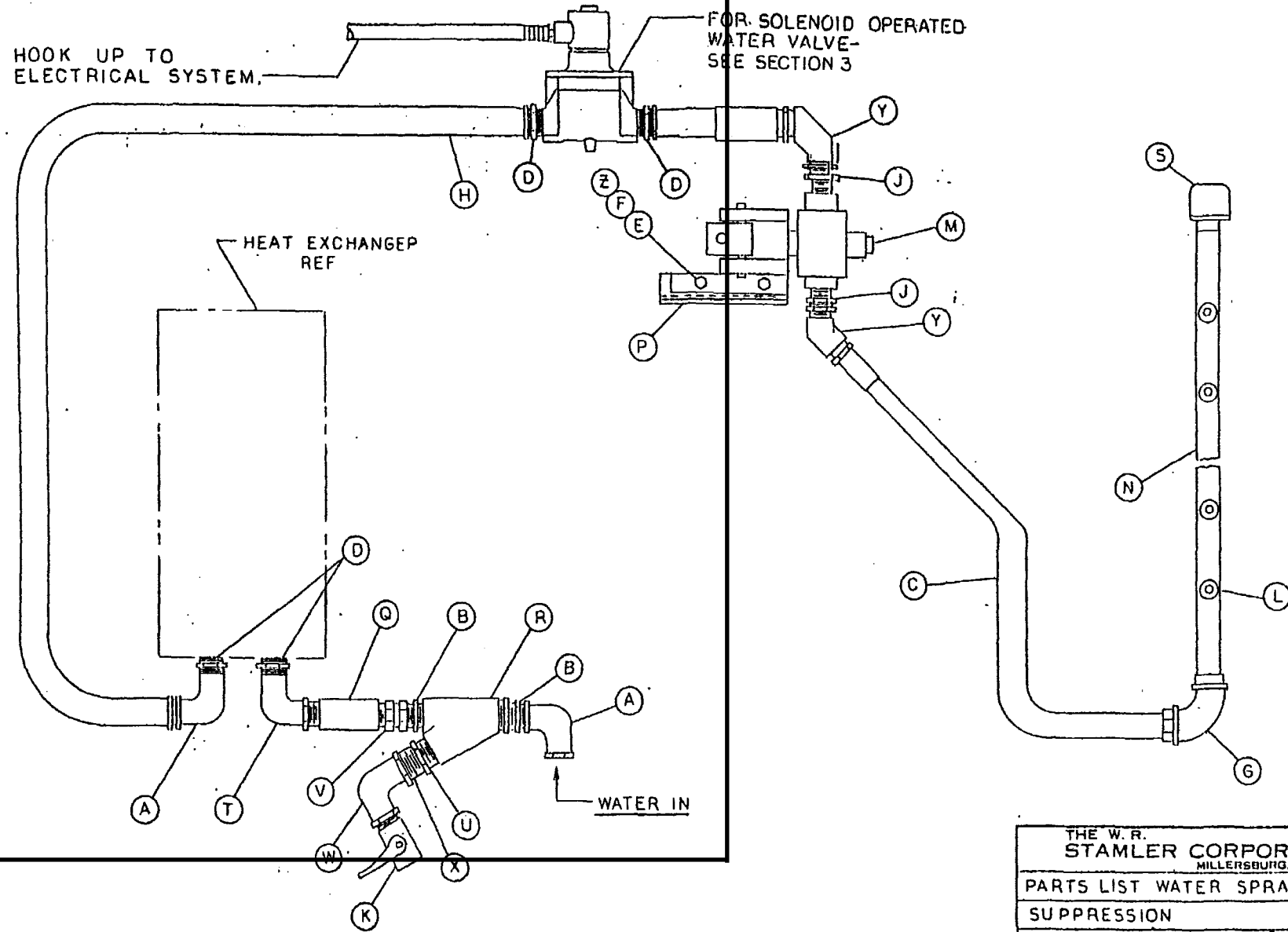
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Prompt Disposition. Dayton will make a good faith effort for prompt correction or other adjustment with respect to any product which proves to be defective within limited warranty. For any product believed to be defective within limited warranty, first write or call dealer from whom the product was purchased. Dealer will give additional directions. If unable to resolve satisfactorily, write to Dayton at address below, giving dealer's name, address, date, and number of dealer's invoice, and describing the nature of the defect. Title and risk of loss pass to buyer on delivery to common carrier. If product was damaged in transit to you, file claim with carrier.

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



			E	C	N	REV
THE W. R. STAMLER CORPORATION MILLERSBURG, KENTUCKY						
PARTS LIST WATER SPRAY DUST SUPPRESSION						
DATE DRAWN	DRAWN BY	DWG. NO.				
25 JAN 94	RB	33-015-0633				

PART NO. - 310152606

DESCRIPTION - ASSY, WATER SPRAY DUST SUPPR U/M - EA

ITEM	PART NO.	DRAWING NO.	DESCRIPTION	QUANTITY	U/M
A	CTXS12		ELBOW-MALE 90 DEG	2.000	EA
B	480570022		FITTING, HYDRAULIC *	2.000	EA
C	350570218		ASSY, HOSE-.75 WATER, 72.00 IN.	1.000	EA
D	480570023		FITTING, HYDRAULIC *	4.000	EA
E	A5A0813024		SCREW, HEX HEAD CAP *	2.000	EA
F	A5P0800000		WASHER, LOCK *	2.000	EA
G	DTXS1215		ELBOW-90 DEG	1.000	EA
H	350571018		ASSY, HOSE-.75 WATER, 108.00 IN	1.000	EA
J	FTXS128		CONNECTOR-MALE 128FTXS	2.000	EA
K	480550012		VALVE, WATER-W/HANDLE	1.000	EA
L	7280115		NOZZLE	5.000	EA
M	480550173		VALVE *	1.000	EA
N	7842		ASSY, PIPE-WATER SPRAY	1.000	EA
P	300120155		BRACKET, WATER SPRAY VALVE	1.000	EA
Q	880110039		NIPPLE, 3/4" X 5" LG *	1.000	EA
R	490520003		STRAINER, WATER-BLOW OUT	1.000	EA
S	480570021		FITTING, HYDRAULIC *	1.000	EA
T	480570007		FITTING, HYDRAULIC *	1.000	EA
U	480570048		FITTING, HYDRAULIC *	1.000	EA
V	01071212		CONNECTOR-MALE PIPE	1.000	EA
W	480570005		FITTING, HYDRAULIC *	1.000	EA
X	880110064		NIPPLE, CLOSE-3/8" X 1" LG *	1.000	EA
Y	V6XS12		ELBOW-SWIVEL NUT 45 DEG	2.000	EA
Z	A5S0813000		NUT, HEAVY HEX *	2.000	EA

- NOTES -
1. FOR USE WITH 50 IN. CONVEYOR WIDTH.
 2. PART NO. AT TOP OF PAGE INCLUDES ALL LISTED COMPONENTS.
 3. FOR PARTS ILLUSTRATION SEE DWG NO. 33-015-0633.

STAMLER CORPORATION
MILLERSBURG, KENTUCKY

PARTS LIST,
ASSY, WATER SPRAY DUST SUPPR

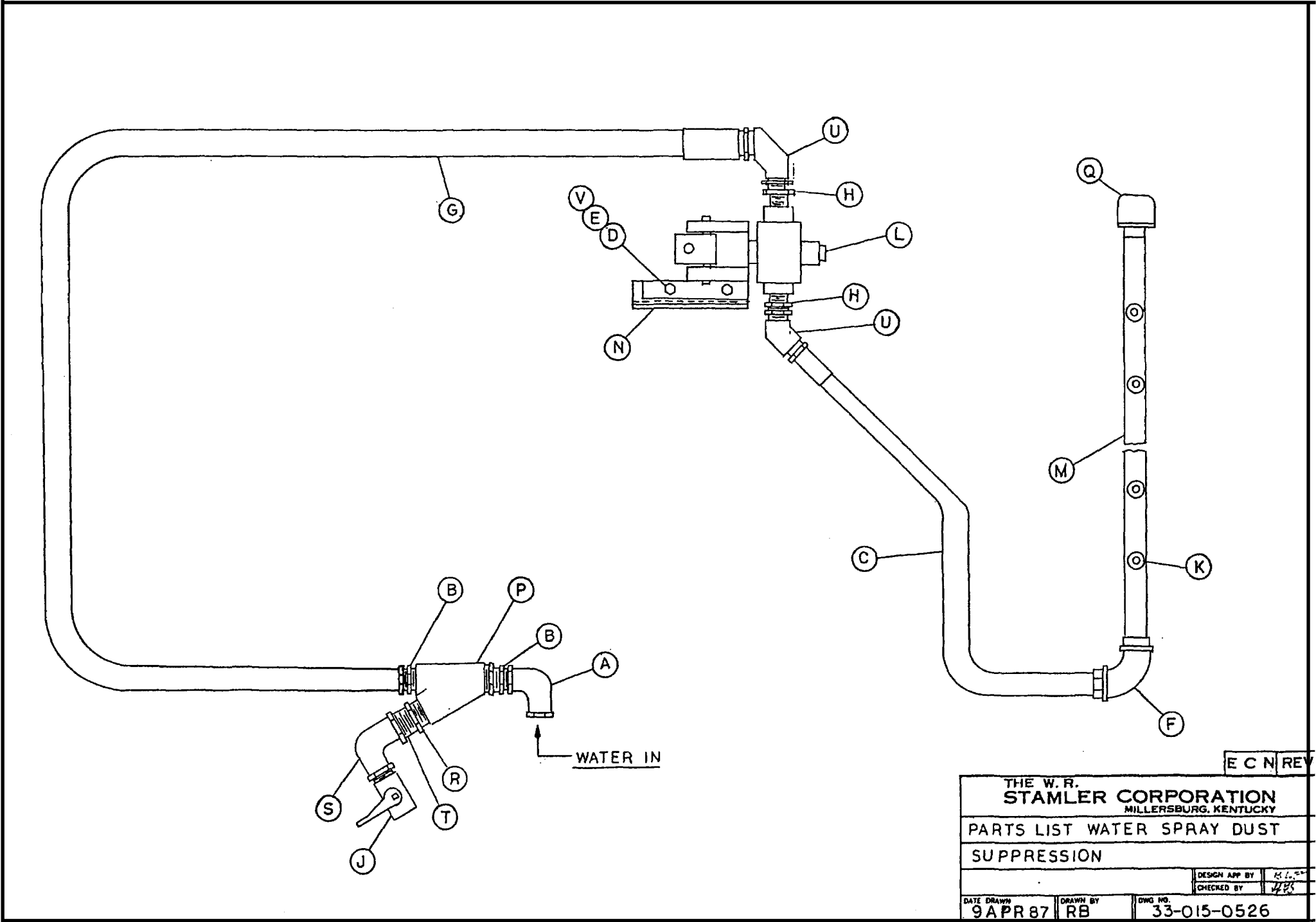
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DATE 1/24/94
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DRAWING NO. 310152606

E.C.N.

REV.

LAST REVISED
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E C N REV		
THE W. R. STAMLER CORPORATION MILLERSBURG, KENTUCKY		
PARTS LIST WATER SPRAY DUST SUPPRESSION		
DESIGN APP BY	K.L.	
CHECKED BY	J.P.S.	
DATE DRAWN	DRAWN BY	DWG NO.
9 APR 87	RB	33-015-0526

PART NO. - 310152270

DESCRIPTION - ASSY, WATER SPRAY-DUST SUPPR U/M - EA

ITEM PART NO.	DRAWING NO.	DESCRIPTION	QUANTITY	U/M
A	CTXS12	ELBOW-MALE 90 DEG	1.000	EA
B	480570052	BUSHING, 1" X 3/4" *	2.000	EA
C	350570218	ASSY, HOSE-.75 WATER, 72.00 IN.	1.000	EA
D	A5A0813028	SCREW, HEX HEAD CAP *	2.000	EA
E	A5P0800000	WASHER, LOCK *	2.000	EA
F	DTXS1216	ELBOW-90 DEG	1.000	EA
G	350571018	ASSY, HOSE-.75 WATER, 108.00 IN	1.000	EA
H	FTXS128	CONNECTOR-MALE 128FTXS	2.000	EA
J	480560012	VALVE, WATER-W/HANDLE	1.000	EA
K	7280116	NOZZLE	5.000	EA
L	480560173	VALVE *	1.000	EA
M	7842	ASSY, PIPE-WATER SPRAY	1.000	EA
N	300120155	BRACKET, WATER SPRAY VALVE	1.000	EA
P	490520003	STRAINER-WATER, BLOW OUT	1.000	EA
Q	480570021	CAP, PIPE-1" *	1.000	EA
R	480570048	BUSHING, 3/4" X 3/8" *	1.000	EA
S	480570005	ELBOW-90 DEG	1.000	EA
T	880110064	NIPPLE, CLOSE-3/8" X 1" LG *	1.000	EA
U	V6XS12	ELBOW-SWIVEL NUT 45 DEG	2.000	EA
V	A5S0813000	NUT, HEAVY HEX *	2.000	EA

- NOTES-
1. FOR USE WITH 50 IN. CONVEYOR WIDTH.
 2. PART NO. AT TOP OF PAGE INDICATES COMPLETE ASSY.
 3. FOR PARTS ILLUSTRATION SEE DWG NO. 33-015-0526.

THE W.R. STAMLER CORPORATION
MILLERSBURG, KENTUCKY

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PARTS LIST,
ASSY, WATER SPRAY-DUST SUPPR

DATE DRWN BY DRAWING NO.
4/09/87 RB 31-015-2270

E.C.N.

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REV. A

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9/04/91