



The Actuating Motor 741 is designed to operate any of the tekmar 3-way and 4-way brass mixing valves from type 710 through to type 724. The 741 provides 6 N•m (53 in•lbs) of torque over a 90° rotation. The actuating motor rotates its output shaft whenever 24 V (ac) is applied between either the counter clockwise (↺) or clockwise (↻) terminals and the Com terminal. The motor is compatible with any control having a 24 V (ac) floating output.

Installation

STEP ONE GETTING READY

Check the contents of the package. If any of the items listed below are missing or damaged, please refer to the Limited Warranty and Product Return Procedure on the back of this brochure and contact your wholesaler or local tekmar representative.

Type 741 includes:

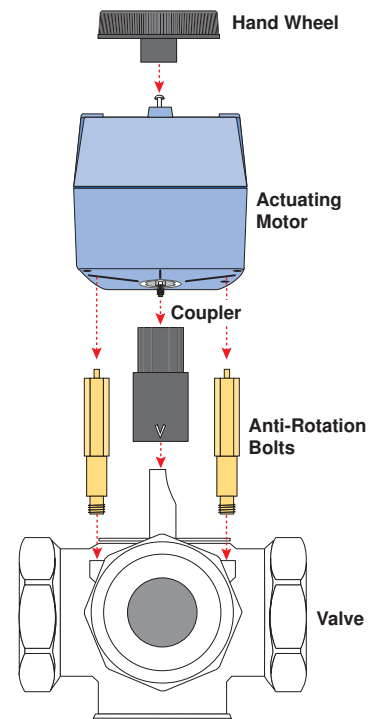
- One Actuating Motor 741, One coupler with white arrow, One coupler with red arrow, One hand wheel with red indicator stripe, Two anti-rotation bolts & One Manual 741_D.

STEP TWO MOUNTING

- Remove the manual valve handle from the mixing valve.
- Thread the two anti-rotation bolts to the two top holes on the valve body.
- Use the following chart to select the proper coupler:

Type	Coupler Arrow Color
710, 711, 712, 713, 714	White
720, 721, 722, 723, 724	Red

- The arrow on the coupler points towards the valve body. Place the coupler onto the valve shaft.
- Set the actuating motor's automatic/manual selector to the manual setting.
- Place the actuating motor onto the coupler. Ensure that the actuating motor's rotation range matches that of the mixing valve. Manually rotate the valve using the actuator hand wheel.
- Ensure the actuating motor's hand wheel position indicator (clear plastic film with red stripe) indicates the proper direction to open the valve. If required, the clear position indicator can be reversed.
- Remove the hand wheel and fasten the actuating motor to the mixing valve using the screw under the hand wheel. Replace the hand wheel when finished.
- Set the actuating motor's automatic/manual selector to the automatic setting.



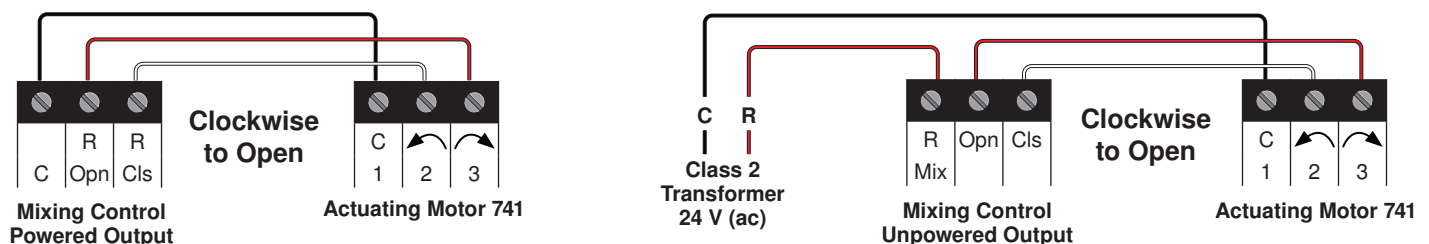
STEP THREE WIRING

- Use a Phillips screwdriver to remove the two screws on the top of the actuating motor to remove the wiring cover.
- All electric wiring enters the actuating motor through the 1/2" (12 mm) conduit hole on the bottom. Standard 18 AWG solid wire is recommended for all connections to the motor terminals.

CAUTION

The actuating motor is not suitable for use with rigid conduit.

- The diagram below shows wiring for clockwise to open. Reverse the Open and Close wires for counter clockwise to open.
- Use the Test button on the mixing control to verify that the mixing valve fully opens and closes.
- The protection provided by the equipment may be impaired if not installed in a manner specified by these instructions.



Replacement Parts and Accessories

Actuating Motor Handle Kit M3045 includes:

- One hand wheel with red indicator stripe, One screw with screw adaptor.

Coupling Kit M3046 includes:

- One replacement coupler with white arrow, One replacement coupler with red arrow, Two replacement anti-rotation bolts.

Actuating Motor Adaptor Kit M3048 includes:

- Two pairs of anti-rotation bolts that allow the Actuating Motor 741 to mount onto the following mixing valves:

Mixing Valve Types	Size	Anti-rotation bolt size	Coupler Arrow Color
Danfoss or ESBE 3MG	1/2" through 1-1/4"	Small	White
Danfoss or ESBE 4MG	1/2" through 1-1/4"	Small	Red
Danfoss or ESBE G1 series	1-1/2" through 2"	Large	White
Danfoss or ESBE G4 series	1-1/2" through 2"	Large	Red

Technical Data

Actuating Motor 741 Floating Action

Literature	— 741_D	Control signal	— 24 V (ac), floating action, 1.5 VA
Packaged Weight	— 1.2 lb. (520 g)	Angle of rotation	— Electrically limited to 90° shaft rotation
Enclosure	— Blue PPO plastic	Running time	— 105 seconds at 60 Hz
Approvals	— CSA C US, CSA/UL 61010-1	Maximum torque	— 6 N•m (53 in•lbs)
Ambient conditions	— Indoor use only, 32 to 122°F (0 to 50°C) RH ≤ 90%, Altitude <3000 m, Installation Category I, Pollution Degree 2		
Power Supply	— 24 V (ac) ±10%, 60 Hz		

Limited Warranty and Product Return Procedure

Limited Warranty *The liability of tekmar under this warranty is limited. The Purchaser, by taking receipt of any tekmar product ("Product"), acknowledges the terms of the Limited Warranty in effect at the time of such Product sale and acknowledges that it has read and understands same.*

The tekmar Limited Warranty to the Purchaser on the Products sold hereunder is a manufacturer's pass-through warranty which the Purchaser is authorized to pass through to its customers. Under the Limited Warranty, each tekmar Product is warranted against defects in workmanship and materials if the Product is installed and used in compliance with tekmar's instructions, ordinary wear and tear excepted. The pass-through warranty period is for a period of twenty-four (24) months from the production date if the Product is not installed during that period, or twelve (12) months from the documented date of installation if installed within twenty-four (24) months from the production date.

The liability of tekmar under the Limited Warranty shall be limited to, at tekmar's sole discretion: the cost of parts and labor provided by tekmar to repair defects in materials and/or workmanship of the defective product; or to the exchange of the defective product for a warranty replacement product; or to the granting of credit limited to the original cost of the defective product, and such repair, exchange or credit shall be the sole remedy available from tekmar, and, without limiting the foregoing in any way, tekmar is not responsible, in contract, tort or strict product liability, for any other losses, costs, expenses, inconveniences, or damages, whether direct, indirect, special, secondary, incidental or consequential, arising from ownership or use of the product, or from defects in workmanship or materials, including any liability for fundamental breach of contract.

The pass-through Limited Warranty applies only to those defective Products returned to tekmar during the warranty period. This Limited Warranty does not cover the cost of the parts or labor to remove or transport the defective Product, or to reinstall the repaired or replacement Product, all such costs and expenses being subject to Purchaser's agreement and warranty with its customers.

Any representations or warranties about the Products made by Purchaser to its customers which are different from or in excess of the tekmar Limited Warranty are the Purchaser's sole responsibility and obligation. Purchaser shall indemnify and hold tekmar harmless from and against any and all claims, liabilities and damages of any kind or nature which arise out of or are related to any such representations or warranties by Purchaser to its customers.

The pass-through Limited Warranty does not apply if the returned Product has been damaged by negligence by persons other than tekmar, accident, fire, Act of God, abuse or misuse; or has been damaged by modifications, alterations or attachments made subsequent to purchase which have not been authorized by tekmar; or if the Product was not installed in compliance with tekmar's instructions and/or the local codes and ordinances; or if due to defective installation of the Product; or if the Product was not used in compliance with tekmar's instructions.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, WHICH THE GOVERNING LAW ALLOWS PARTIES TO CONTRACTUALLY EXCLUDE, INCLUDING, WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, DURABILITY OR DESCRIPTION OF THE PRODUCT, ITS NON-INFRINGEMENT OF ANY RELEVANT PATENTS OR TRADEMARKS, AND ITS COMPLIANCE WITH OR NON-VIOLATION OF ANY APPLICABLE ENVIRONMENTAL, HEALTH OR SAFETY LEGISLATION; THE TERM OF ANY OTHER WARRANTY NOT HEREBY CONTRACTUALLY EXCLUDED IS LIMITED SUCH THAT IT SHALL NOT EXTEND BEYOND TWENTY-FOUR (24) MONTHS FROM THE PRODUCTION DATE, TO THE EXTENT THAT SUCH LIMITATION IS ALLOWED BY THE GOVERNING LAW.

Product Warranty Return Procedure All Products that are believed to have defects in workmanship or materials must be returned, together with a written description of the defect, to the tekmar Representative assigned to the territory in which such Product is located. If tekmar receives an inquiry from someone other than a tekmar Representative, including an inquiry from Purchaser (if not a tekmar Representative) or Purchaser's customers, regarding a potential warranty claim, tekmar's sole obligation shall be to provide the address and other contact information regarding the appropriate Representative.



tekmar Control Systems Ltd., A Watts Water Technologies Company. Head Office: 5100 Silver Star Road, Vernon, B.C. Canada V1B 3K4, 250-545-7749, Fax. 250-545-0650 Web Site: www.tekmarControls.com