

CARRIER 23 XRV SCREW CHILLER HEAD PRESSURE 2-WAY VALVE CONTROL WIRING

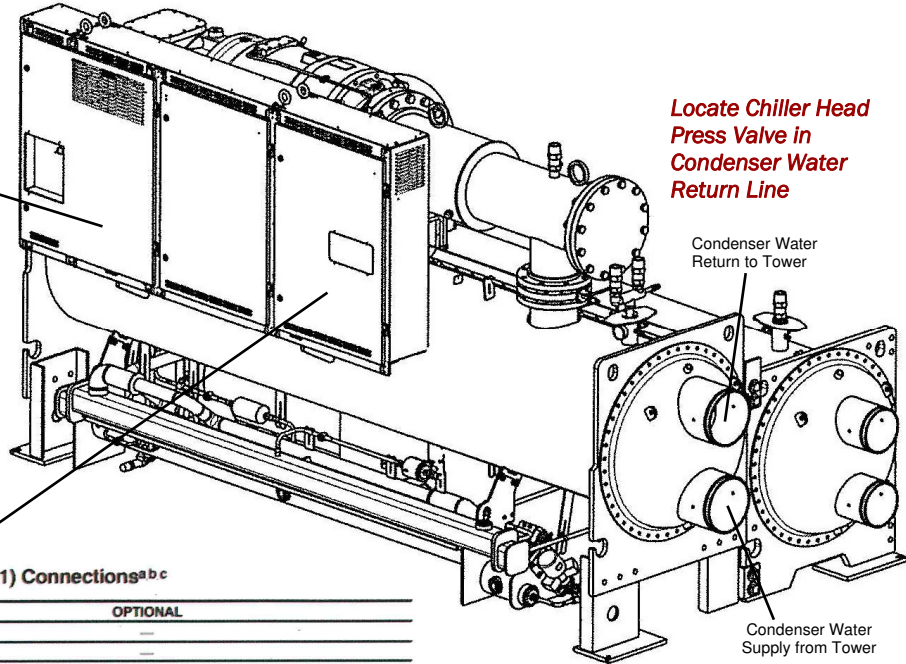
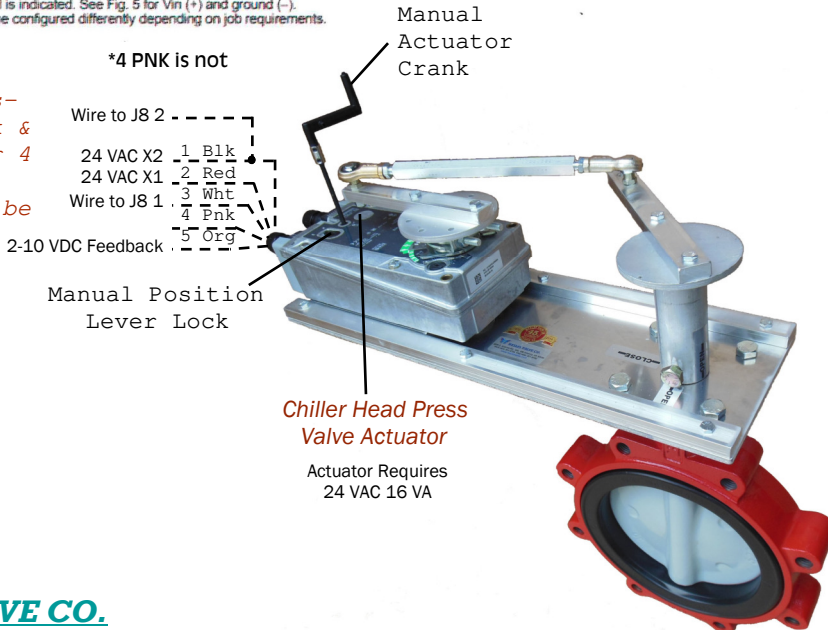


Table 2 – 23XRV Input/Output Board 1 (IOB1) Connections^{a b c}

DESCRIPTION	CHANNEL	TERMINAL	TYPE	OPTIONAL
Compressor Discharge Temperature	AI1	J16-1,5	5K Ohm	—
Motor Winding Temperature	AI2	J16-2,6	5K Ohm	—
Oil Vaporizer Temperature	AI3	J16-3,7	5K Ohm	—
Oil Sump Temperature	AI4	J16-4,8	5K Ohm	—
Remote Reset Sensor	AI5	J15-6,12	5K Ohm	Optional Field Connection 7TB-17, 18
Economizer Gas Temperature	AI6	J15-5,11	5K Ohm	—
Oil Pump Discharge Pressure	AI7	J15-4,10	5V	—
Oil Sump Pressure	AI8	J15-3,9	5V	—
Refrigerant Leak Sensor	AI9	J15-2,8	4-20mA	Optional Field Connection 7TB-19, 20 (Ensure channel 5 on SW2 dip switch is ON)
Auto Chilled Liquid Reset	AI10	J15-1,7	4-20mA	Optional Field Connection 7TB-21, 22 (Ensure channel 9 on SW2 dip switch is ON)
Head Pressure Output	AO3	J14-3,6	4-20mA	Optional Field Connection 7TB-34, 35
Remote Contact Input	DI1	J13-1,5	24 VAC	Optional Field Connection 7TB-9,10, Dry contact. Must be configured in "Configure Startup Options" in Chiller Start/Stop Menu.
Emergency Stop	DI2	J13-2,6	24 VAC	Optional Field Connection 7TB-11,12, Dry contact
Evaporator Flow Switch	DI3	J13-4,7	24 VAC	Optional Field Connection 7TB-13,14; Closed indicates flow
Condenser Flow Switch	DI4	J13-4,8	24 VAC	Optional Field Connection 7TB-15,16; Closed indicates flow
Chiller Alert	DO1	J12-6,7	24 VAC	Optional Field Connection 7TB-24V, 27
Chiller Alarm	DO2	J12-9,10	24 VAC	Optional Field Connection 7TB-24V, 29
Discrete Chiller Run Status Output (OFF=0V, ON=24VAC)	DO3	J12-1,2	24 VAC	Optional Field Connection 7TB-24V, 31
VFD Run Permissive	DO4	J12-4,5	24 VAC	—
Condenser Liquid Level Sensor	AI11	J10-1,7	0-5V	NOTE: For TP compressors only.

NOTE(S):
a. See Fig. 5 for IOB1 wiring diagram.
b. For pressure readings, only Vout (output) terminal is indicated. See Fig. 5 for Vin (+) and ground (-).
c. Defaults are shown. In some cases the IOB can be configured differently depending on job requirements.

Add 500 Ohm Resistor between 1 Blk & 3 Wht for Chiller 4-20 mA Signal or the Resistor may be located at the Chiller Terminal Strip



ACTUATOR HAS 4 TO 1 LEVER

90 DEG ACTUATOR TO 60 DEG VALVE ROTATION OR A 1.5 TO 1 RATIO INCREASES THROTTLING DISC REPOSITIONS

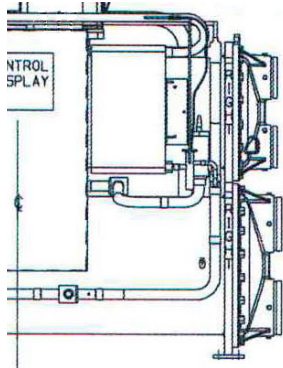


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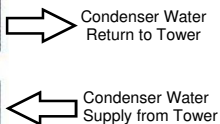
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CONDENSOR WATER VALVE

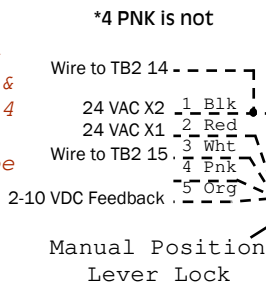
CARRIER 30 HXC SCREW CHILLER UNITS HEAD PRESSURE VALVE CONTROL WIRING



Locate Chiller Head Press Valve in Condenser Water Return Line



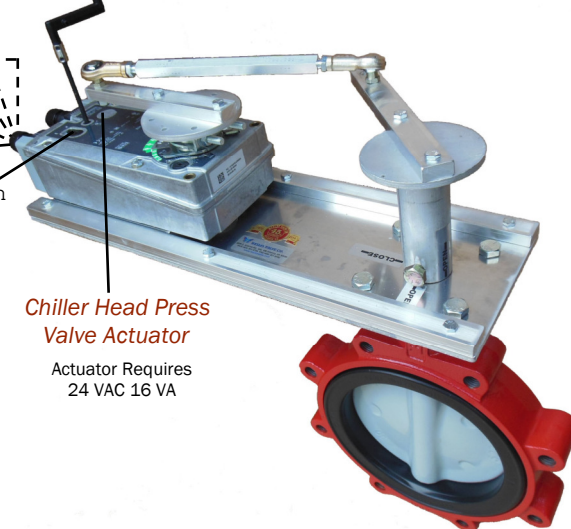
Add 500 Ohm Resistor between 1 Blk & 3 Wht for Chiller 4-20 mA Signal or the Resistor may be located at the Chiller Terminal Strip



Manual Actuator Crank

Chiller Head Press Valve Actuator

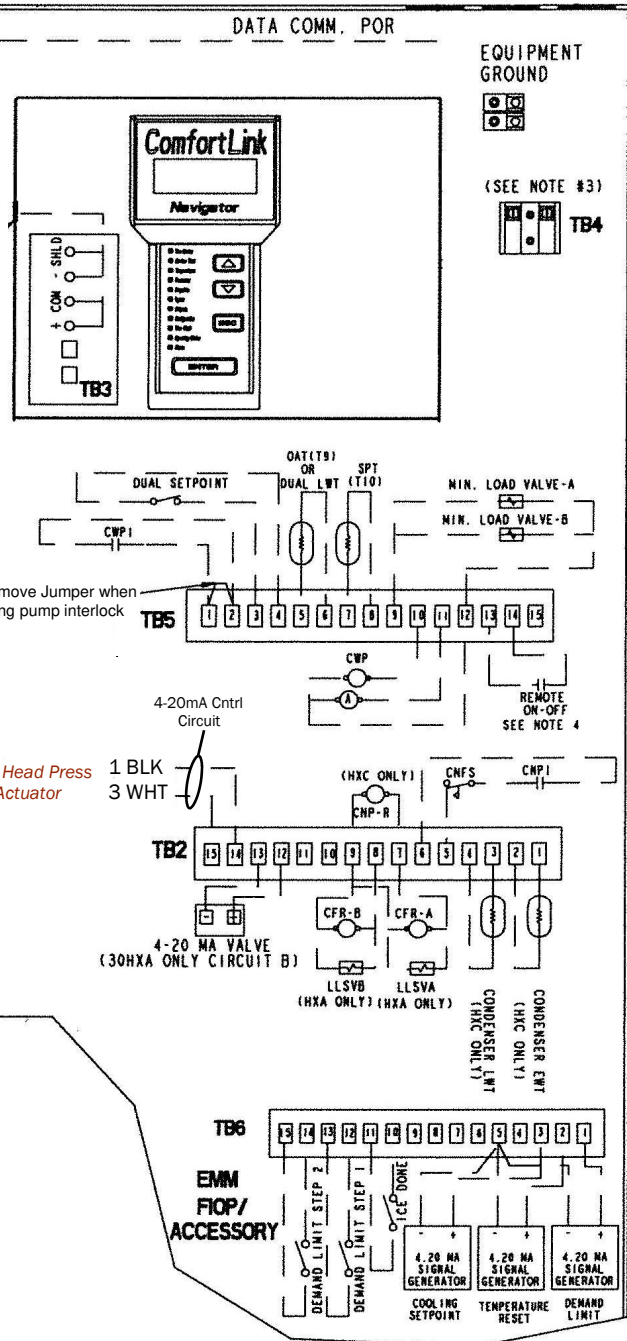
Actuator Requires 24 VAC 16 VA



ACTUATOR HAS 4 TO 1 LEVER

90 DEG ACTUATOR TO 60 DEG VALVE ROTATION OR A 1.5 TO 1 RATIO INCREASES THROTTLING DISC REPOSITIONS

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CARRIER 19 XR CENTRIFUGAL CHILLER HEAD PRESSURE 2-WAY VALVE CONTROL WIRING

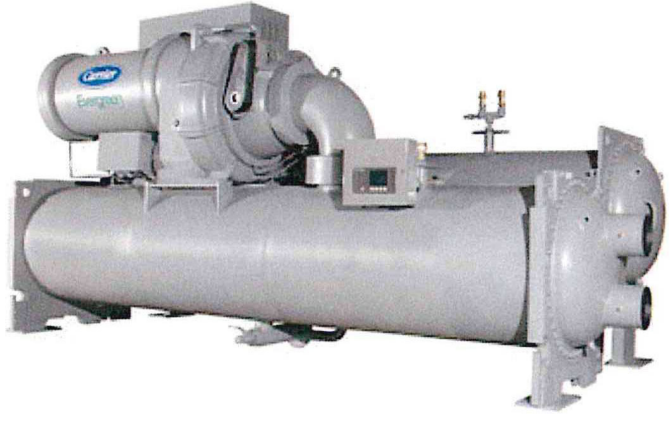
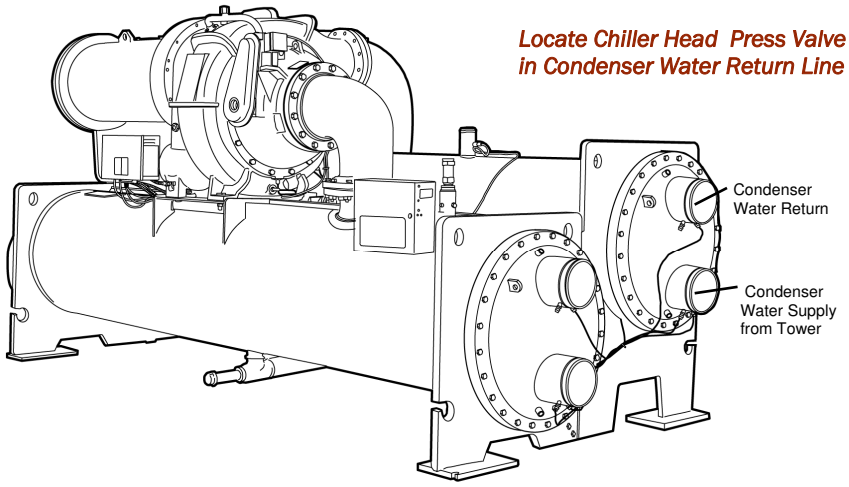


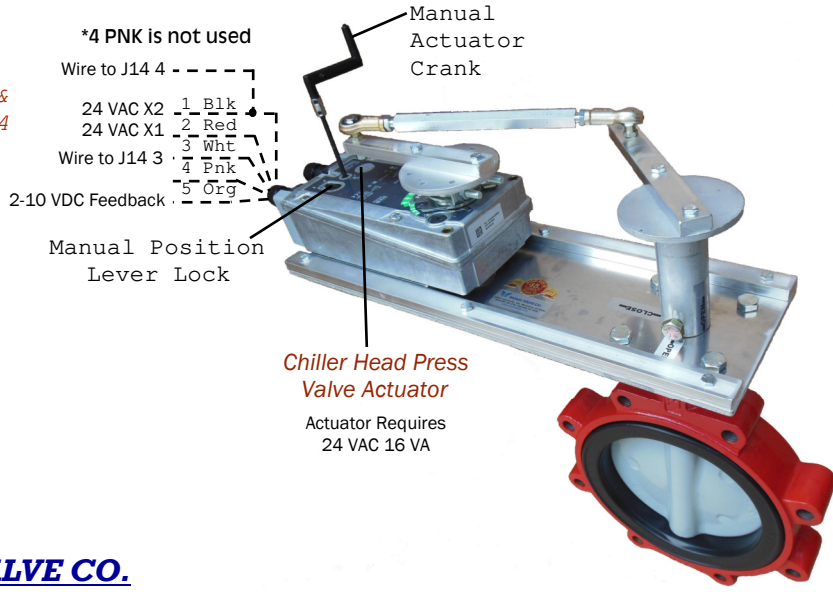
Table 4 — 19XR3-E IOB2 Connections a,b,c

DESCRIPTION	CHANNEL	TERMINAL	TYPE	OPTIONAL
Motor Winding Temperature 1	AI1	J16-1,5	5 kΩ	—
Thrust Bearing Oil Temperature	AI2	J16-2,6	5 kΩ	—
Oil Sump Temperature	AI3	J16-3,7	5 kΩ	—
Oil Supply Temperature	AI4	J16-4, 8	5 kΩ	Yes
Guide Vane Actual Position	AI5	J15-6,12	4 to 20 mA	Yes, standard for 19XRC
Oil Supply Pressure	AI6	J15-5	5 VDC	—
Oil Sump Pressure	AI7	J15-4	5 VDC	—
EC (HGBP) Valve Feedback	AI8	J15-3,9	4 to 20 mA	Yes, standard for 19XRC
Motor Winding Temperature 2	AI9	J15-2,8	5 kΩ	Yes
Motor Winding Temperature 3	AI10	J15-7	5 kΩ	—
Diffuser Pressure	AI11	J10-8	5 VDC	—
Guide Vane 1 Output	AO1	J14-1,4	4 to 20 mA	—
Diffuser Output (Option Enabled)	AO2	J14-2,5	4 to 20 mA	Yes
Liquid Bypass Valve (Option Enabled)	AO2	J14-2-5	4 to 20 mA	Yes
Head Pressure Output	AO3	J14-3 (2TB-3,4)	4 to 20 mA	Yes, NO (dry contact)
Evap Water Flow Switch	DI1	J13-5 (2TB-5,6)	24 VAC	Yes, NO (dry contact)
Cond Water Flow Switch	DI2	J13-6 (2TB-7,8)	24 VAC	Yes, NO (dry contact)
High Pressure Switch	DI3	J13-7,3	24 VAC	—
Ice Build Contact	DI4	J13-8,4 (2TB-11,12)	24 VAC	Yes, NO (dry contact)
Oil Heater Relay	DO1	J12-7	24 VAC	—
Oil Pump Relay	DO2	J12-10	24 VAC	—
EC (HGBP) Solenoid Valve / Open	DO3	J12-2	24 VAC	Yes
Vapor Source SV (19XRC Only)	DO4	J12-5	24 VAC	XRC Only

NOTE(S):
 a. See Fig. 5 for IOB2 wiring diagram.
 b. For pressure readings, only Vout (output) terminal is indicated. See Fig. 5 for Vin (+) and ground (-).
 c. Defaults are shown. In some cases the IOB can be configured differently depending on job requirements.

LEGEND
 IOB — Input/Output Board
 NO — Normally Open

Add 500 Ohm Resistor between 1 Blk & 3 Wht for Chiller 4 -20 mA Signal or the Resistor may be located at the Chiller Terminal Strip



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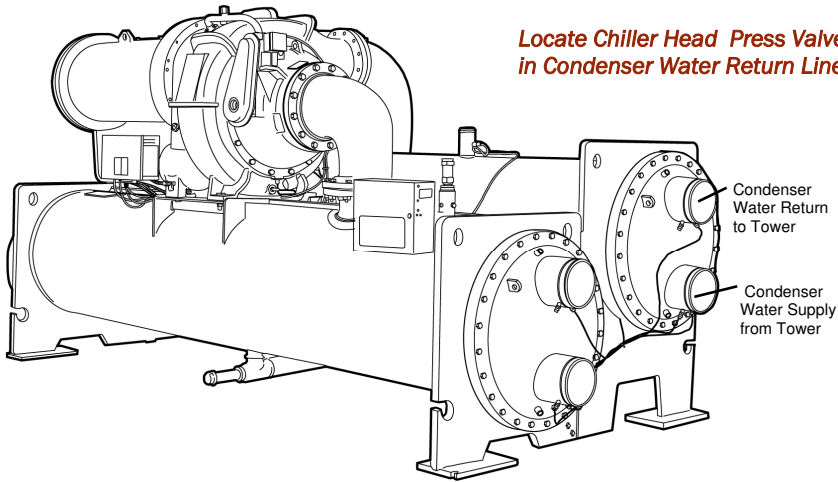
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CARRIER 19 XR CENTRIFUGAL CHILLER

HEAD PRESSURE 2-WAY VALVE CONTROL WIRING



Locate Chiller Head Press Valve
in Condenser Water Return Line

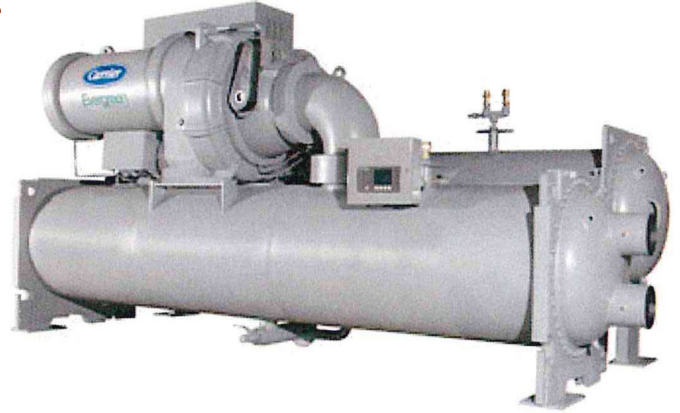


Table 4 — 19XR3-E IOB2 Connections a,b,c

DESCRIPTION	CHANNEL	TERMINAL	TYPE	OPTIONAL
Motor Winding Temperature 1	AI1	J16-1,5	5 kΩ	—
Thrust Bearing Oil Temperature	AI2	J16-2,6	5 kΩ	—
Oil Sump Temperature	AI3	J16-3,7	5 kΩ	—
Oil Supply Temperature	AI4	J16-4, 8	5 kΩ	Yes
Guide Vane Actual Position	AI5	J15-6,12	4 to 20 mA	Yes, standard for 19XRC
Oil Supply Pressure	AI6	J15-5	5 VDC	—
Oil Sump Pressure	AI7	J15-4	5 VDC	—
EC (HGBP) Valve Feedback	AI8	J15-3,9	4 to 20 mA	Yes, standard for 19XRC
Motor Winding Temperature 2	AI9	J15-2,8	5 kΩ	Yes
Motor Winding Temperature 3	AI10	J15-7	5 kΩ	—
Diffuser Pressure	AI11	J10-8	5 VDC	—
Guide Vane 1 Output	AO1	J14-1,4	4 to 20 mA	—
Diffuser Output (Option Enabled)	AO2	J14-2,5	4 to 20 mA	Yes
Liquid Bypass Valve (Option Enabled)	AO2	J14-2-5	4 to 20 mA	Yes
Head Pressure Output	AO3	J14-3 (2TB-3,4)	4 to 20 mA	Yes, NO (dry contact)
Evap Water Flow Switch	DI1	J13-5 (2TB-5,6)	24 VAC	Yes, NO (dry contact)
Cond Water Flow Switch	DI2	J13-6 (2TB-7,8)	24 VAC	Yes, NO (dry contact)
High Pressure Switch	DI3	J13-7,3	24 VAC	—
Ice Build Contact	DI4	J13-8,4 (2TB-11,12)	24 VAC	Yes, NO (dry contact)
Oil Heater Relay	DO1	J12-7	24 VAC	—
Oil Pump Relay	DO2	J12-10	24 VAC	—
EC (HGBP) Solenoid Valve / Open	DO3	J12-2	24 VAC	Yes
Vapor Source SV (19XRC Only)	DO4	J12-5	24 VAC	XRC Only

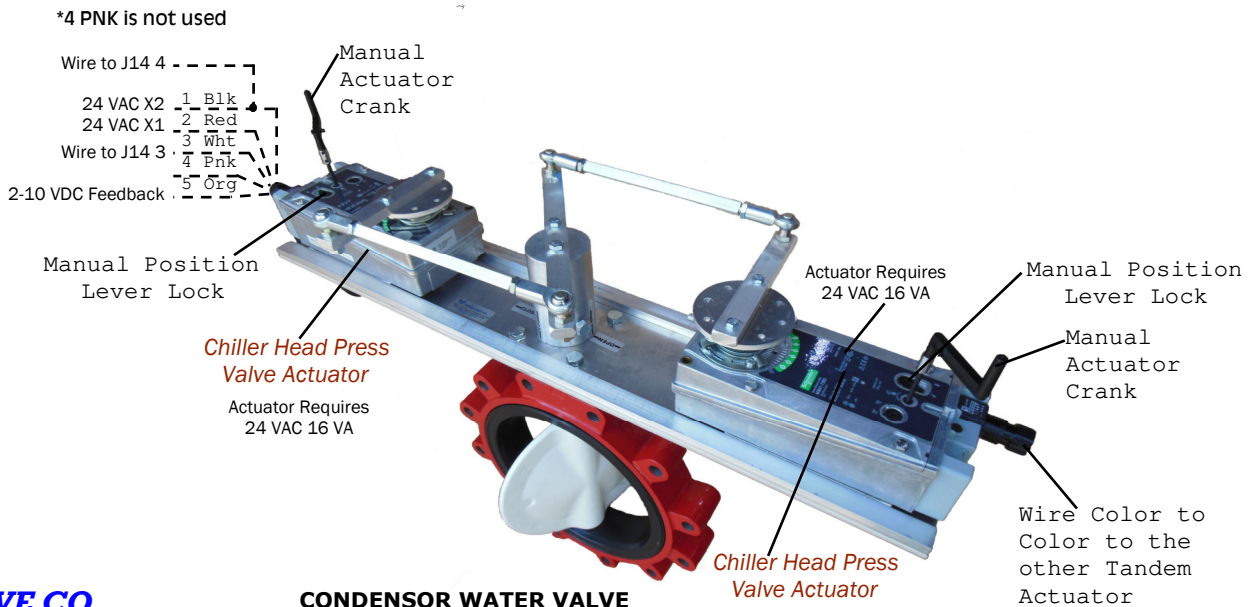
NOTE(S):

- a. See Fig. 5 for IOB2 wiring diagram.
- b. For pressure readings, only Vout (output) terminal is indicated. See Fig. 5 for Vin (+) and ground (-).
- c. Defaults are shown. In some cases the IOB can be configured differently depending on job requirements.

LEGEND

- IOB — Input/Output Board
- NO — Normally Open

Add 500 Ohm Resistor between 1 Blk & 3 Wht for Chiller 4 -20 mA Signal or the Resistor may be located at the Chiller Terminal Strip



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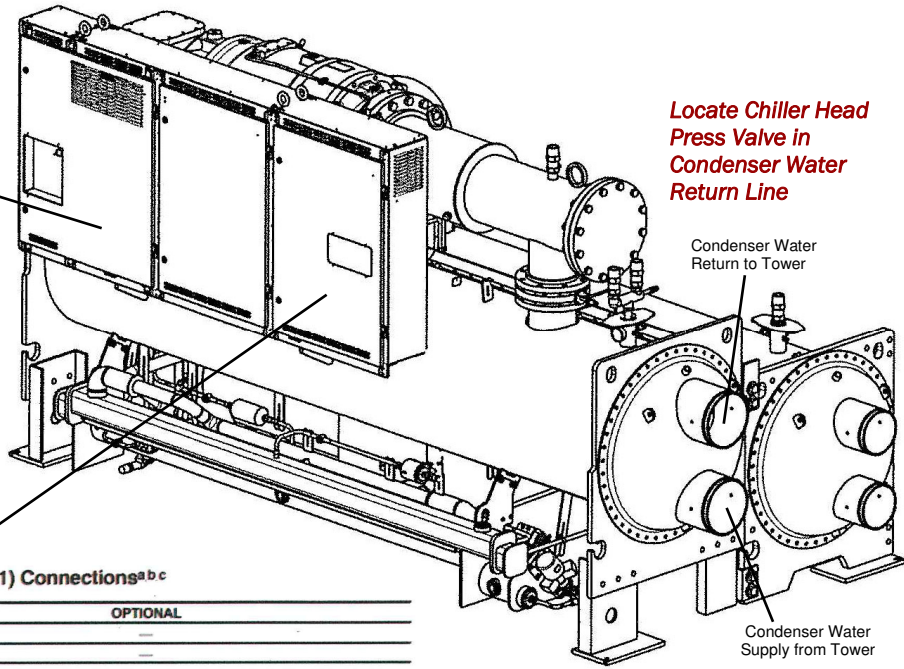
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ACTUATOR HAS 4 TO 1 LEVER OR TORQUING ADVANTAGE

90 DEG ACTUATOR TO 60 DEG VALVE ROTATION OR A 1.5 TO 1 RATIO INCREASES THROTTLING

CARRIER 23 XRV SCREW CHILLER HEAD PRESSURE 3-WAY VALVE CONTROL WIRING



Locate Chiller Head Press Valve in Condenser Water Return Line

Table 2 – 23XRV Input/Output Board 1 (IOB1) Connections^{a b c}

DESCRIPTION	CHANNEL	TERMINAL	TYPE	OPTIONAL
Compressor Discharge Temperature	AI1	J16-1.5	5K Ohm	—
Motor Winding Temperature	AI2	J16-2.6	5K Ohm	—
Oil Vaporizer Temperature	AI3	J16-3.7	5K Ohm	—
Oil Sump Temperature	AI4	J16-4.8	5K Ohm	—
Remote Reset Sensor	AI5	J15-6,12	5K Ohm	Optional Field Connection 7TB-17, 18
Economizer Gas Temperature	AI6	J15-5,11	5K Ohm	—
Oil Pump Discharge Pressure	AI7	J15-4,10	5V	—
Oil Sump Pressure	AI8	J15-3,9	5V	—
Refrigerant Leak Sensor	AI9	J15-2,8	4-20mA	Optional Field Connection 7TB-19, 20 (Ensure channel 5 on SW2 dip switch is ON)
Auto Chilled Liquid Reset	AI10	J15-1,7	4-20mA	Optional Field Connection 7TB-21, 22 (Ensure channel 9 on SW2 dip switch is ON)
Head Pressure Output	AO3	J14-3,6	4-20mA	Optional Field Connection 7TB-34, 35
Remote Contact Input	DI1	J13-1,5	24 VAC	Optional Field Connection 7TB-9,10, Dry contact. Must be configured in "Configure Startup Options" in Chiller Start/Stop Menu.
Emergency Stop	DI2	J13-2,6	24 VAC	Optional Field Connection 7TB-11,12, Dry contact
Evaporator Flow Switch	DI3	J13-4,7	24 VAC	Optional Field Connection 7TB-13,14; Closed indicates flow
Condenser Flow Switch	DI4	J13-4,8	24 VAC	Optional Field Connection 7TB-15,16; Closed indicates flow
Chiller Alert	DO1	J12-6,7	24 VAC	Optional Field Connection 7TB-24V, 27
Chiller Alarm	DO2	J12-9,10	24 VAC	Optional Field Connection 7TB-24V, 29
Discrete Chiller Run Status Output (OFF=0V, ON=24VAC)	DO3	J12-1,2	24 VAC	Optional Field Connection 7TB-24V, 31
VFD Run Permissive	DO4	J12-4,5	24 VAC	—
Condenser Liquid Level Sensor	AI11	J10-1,7	0-5V	NOTE: For TP compressors only.

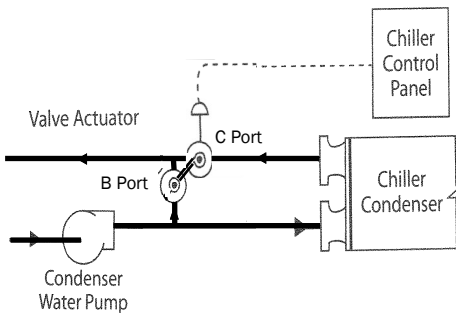
NOTE(S):

- a. See Fig. 5 for IOB1 wiring diagram.
- b. For pressure readings, only Vout (output) terminal is indicated. See Fig. 5 for Vin (+) and ground (-).
- c. Defaults are shown. In some cases the IOB can be configured differently depending on job requirements.

Add 500 Ohm Resistor between 1 Blk & 3 Wht for Chiller 4-20 mA Signal or the Resistor may be located at the Chiller Panel Terminal Strip

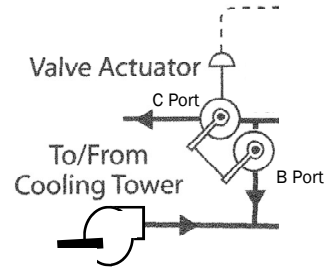
*4 PNK is not used

- Wire to J14 6 - - - - -
- 24 VAC X2 1 Blk
- 24 VAC X1 2 Red
- Wire to J14 3 3 Wht
- 4 Pnk
- 2-10 VDC Feedback 5 Org



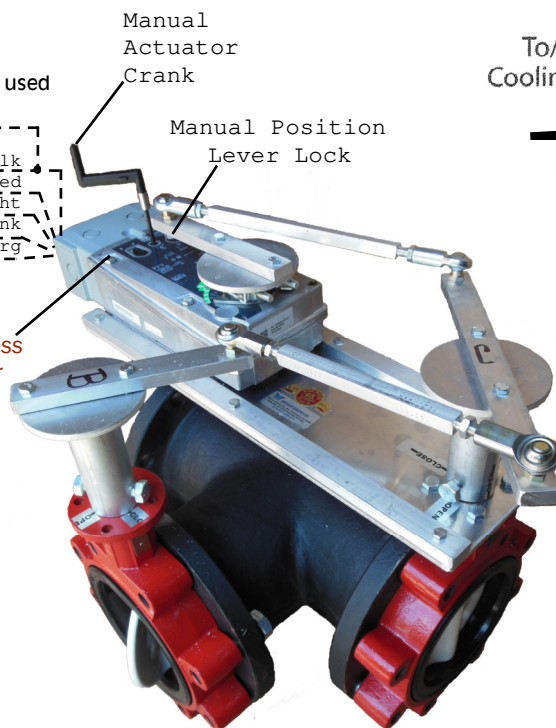
CORRECT 3-WAY VALVE PIPING

During Pipe Installation, DO NOT Spin the Valve on it's B Port Axis so that it ends up as Shown



ECT 3-WAY VALVE PIPING

Chiller Head Press Valve Actuator
Actuator Requires 24 VAC 16 VA



ACTUATOR HAS 4 TO 1 LEVER

90 DEG ACTUATOR TO 60 DEG VALVE ROTATION OR A 1.5 TO 1 RATIO INCREASES THROTTLING DISC REPOSITIONS

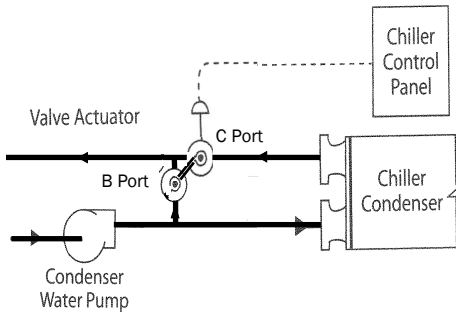
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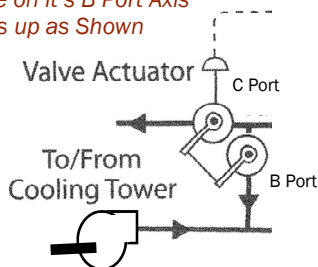
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CARRIER 30 HXC SCREW CHILLER UNITS HEAD PRESSURE VALVE CONTROL WIRING



CORRECT 3-WAY VALVE PIPING

During Pipe Installation, DO NOT Spin the Valve on it's B Port Axis so that it ends up as Shown

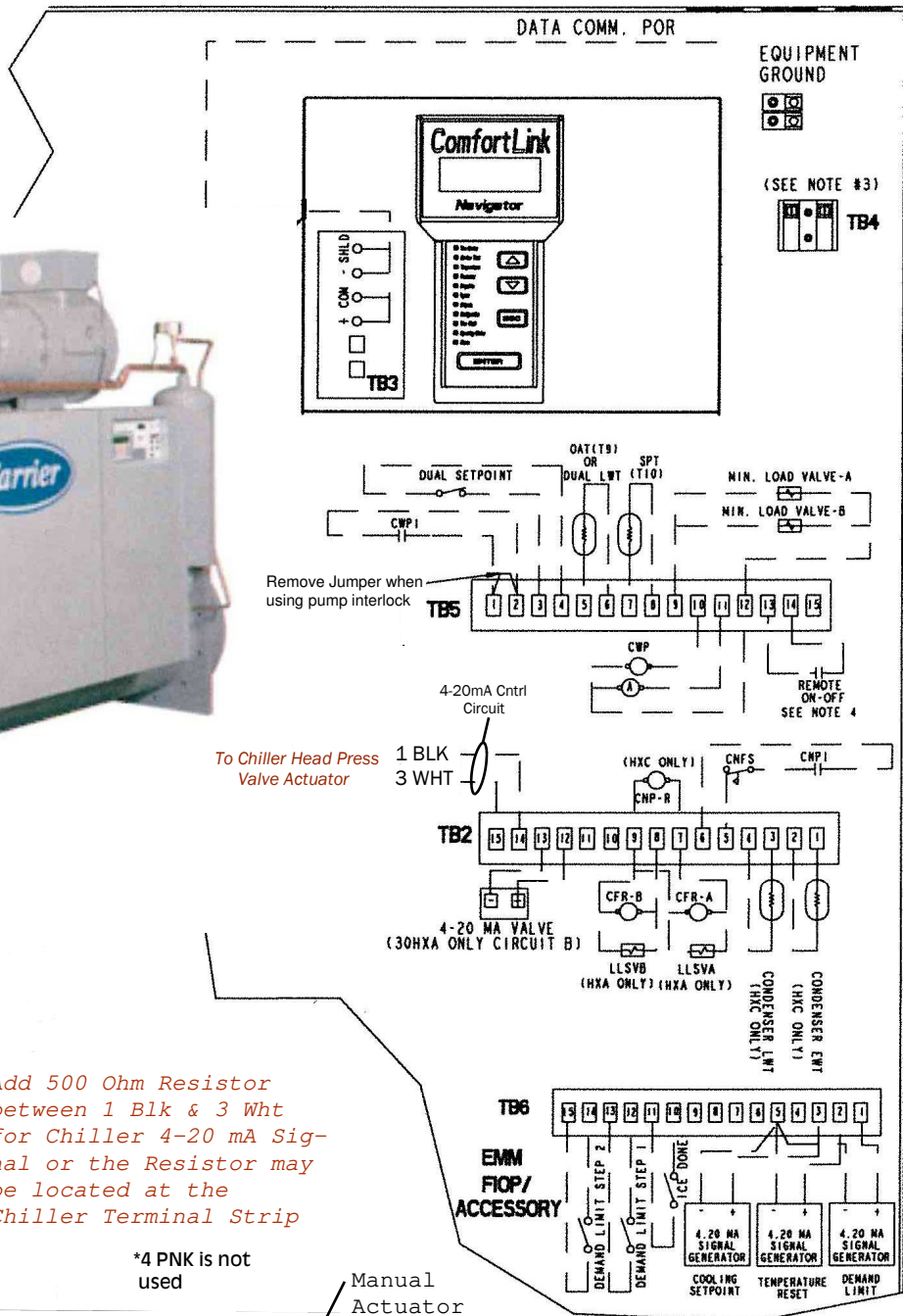


INCORRECT 3-WAY VALVE PIPING



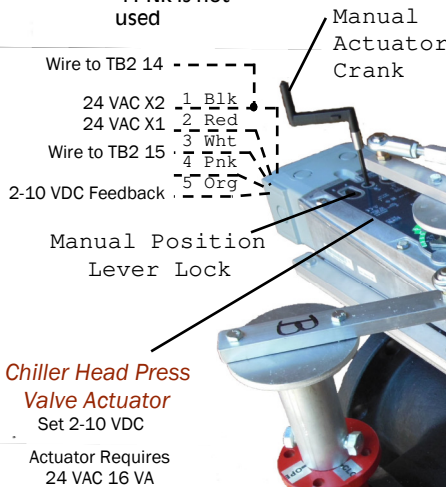
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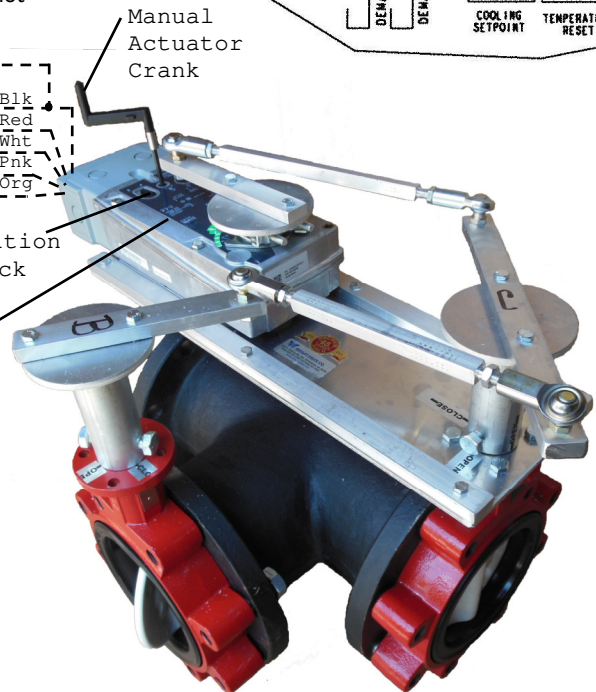


Add 500 Ohm Resistor between 1 Blk & 3 Wht for Chiller 4-20 mA Signal or the Resistor may be located at the Chiller Terminal Strip

*4 PNK is not used



Chiller Head Press Valve Actuator Set 2-10 VDC
Actuator Requires 24 VAC 16 VA



CONDENSOR WATER VALVE

CARRIER 19 XR CENTRIFUGAL CHILLER HEAD PRESSURE 3-WAY VALVE CONTROL WIRING

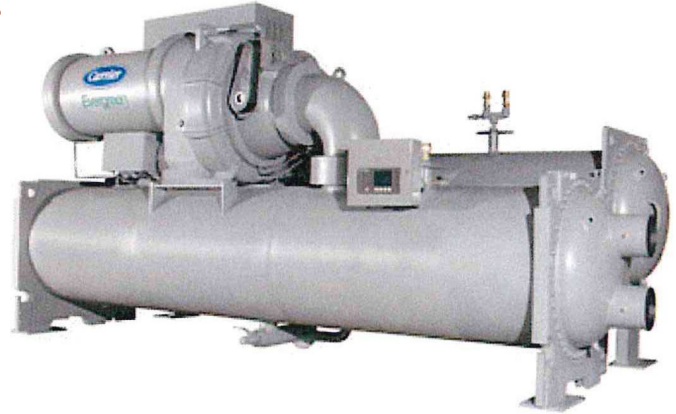
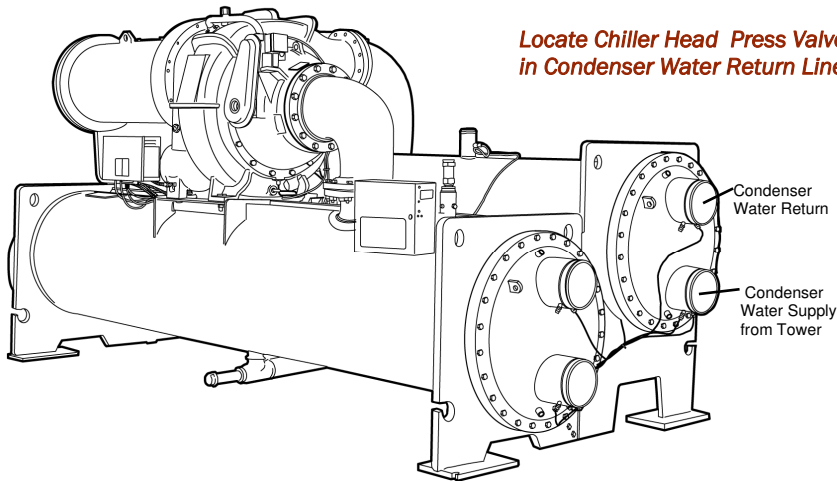


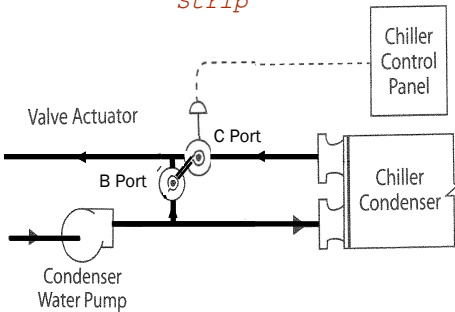
Table 4 — 19XR3-E IOB2 Connections ^{a,b,c}

DESCRIPTION	CHANNEL	TERMINAL	TYPE	OPTIONAL
Motor Winding Temperature 1	AI1	J16-1,5	5 kΩ	—
Thrust Bearing Oil Temperature	AI2	J16-2,6	5 kΩ	—
Oil Sump Temperature	AI3	J16-3,7	5 kΩ	—
Oil Supply Temperature	AI4	J16-4, 8	5 kΩ	Yes
Guide Vane Actual Position	AI5	J15-6,12	4 to 20 mA	Yes, standard for 19XRC
Oil Supply Pressure	AI6	J15-5	5 VDC	—
Oil Sump Pressure	AI7	J15-4	5 VDC	—
EC (HGBP) Valve Feedback	AI8	J15-3,9	4 to 20 mA	Yes, standard for 19XRC
Motor Winding Temperature 2	AI9	J15-2,8	5 kΩ	Yes
Motor Winding Temperature 3	AI10	J15-7	5 kΩ	—
Diffuser Pressure	AI11	J10-8	5 VDC	—
Guide Vane 1 Output	AO1	J14-1,4	4 to 20 mA	—
Diffuser Output (Option Enabled)	AO2	J14-2,5	4 to 20 mA	Yes
Liquid Bypass Valve (Option Enabled)	AO2	J14-2-5	4 to 20 mA	Yes
Head Pressure Output	AO3	J14-3 (2TB-3,4)	4 to 20 mA	Yes, NO (dry contact)
Evap Water Flow Switch	DI1	J13-5 (2TB-5,6)	24 VAC	Yes, NO (dry contact)
Cond Water Flow Switch	DI2	J13-6 (2TB-7,8)	24 VAC	Yes, NO (dry contact)
High Pressure Switch	DI3	J13-7,3	24 VAC	—
Ice Build Contact	DI4	J13-8,4 (2TB-11,12)	24 VAC	Yes, NO (dry contact)
Oil Heater Relay	DO1	J12-7	24 VAC	—
Oil Pump Relay	DO2	J12-10	24 VAC	—
EC (HGBP) Solenoid Valve / Open	DO3	J12-2	24 VAC	Yes
Vapor Source SV (19XRC Only)	DO4	J12-5	24 VAC	XRC Only

NOTE(S):
a. See Fig. 5 for IOB2 wiring diagram.
b. For pressure readings, only Vout (output) terminal is indicated. See Fig. 5 for Vin (+) and ground (—).
c. Defaults are shown. In some cases the IOB can be configured differently depending on job requirements.

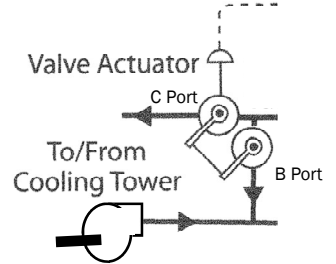
LEGEND
IOB — Input/Output Board
NO — Normally Open

Add 500 Ohm Resistor between 1 Blk & 3 Wht for Chiller 4-20 mA Signal or the Resistor may be located at the Chiller Terminal Strip



CORRECT 3-WAY VALVE PIPING

During Pipe Installation, DO NOT Spin the Valve on it's B Port Axis so that it ends up as Shown



INCORRECT 3-WAY VALVE PIPING

*4 Pnk is not used

- Wire to J14 4 - - - - -
- 24 VAC X2 1 Blk
- 24 VAC X1 2 Red
- Wire to J14 3 3 Wht
- 4 Pnk
- 2-10 VDC Feedback 5 Org

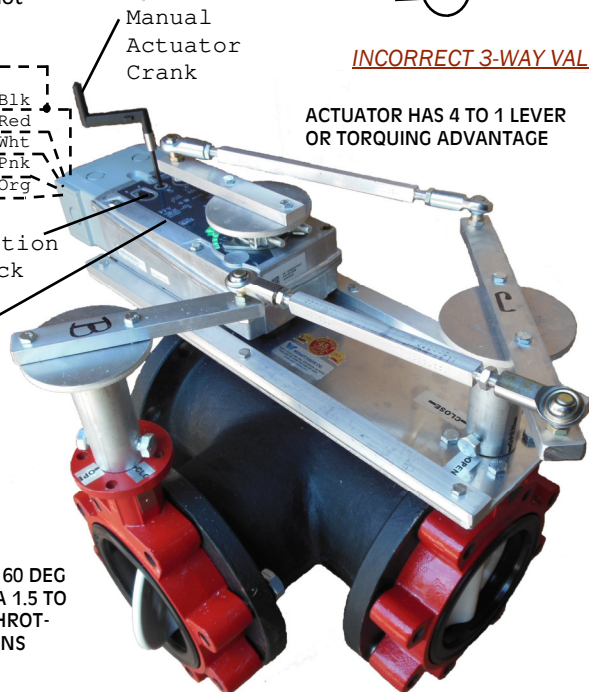
Manual Actuator Crank

Manual Position Lever Lock

Chiller Head Press Valve Actuator Set 2-10 VDC

Actuator Requires 24 VAC 16 VA

ACTUATOR HAS 4 TO 1 LEVER OR TORQUING ADVANTAGE



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