

<u>VEKTEK LLC</u> <u>INSTRUCTION SHEET</u>	VEKTEK INC. 1334 E, SIXTH AVE. P.O. BOX 625 EMPORIA, KS. 66801 U.S.A.	IS		5504	
		REV.	E	EFF./DATE	08/11/25
		ECN. NO.		5769	
		BY/DATE:		KR	08/01/25
		APPR./DATE:		TDK	05/29/18
		REV APPR/DATE:	BCD	08/11/25	
TITLE:		AUTO-TUNING OF ATV12 & ATV320 PROGRAM TO MOTOR			

IMPORTANT: Read and understand this document in its entirety before beginning this procedure.

Replacement of the AWP AC motor or Variable Frequency Drive may require auto-tuning the VFD program to the specific motor installed on the pump. Subtle differences in the motor windings and resistance could result in the current VFD program being incompatible with the motor it is connected to, causing slow and erratic behavior of motor rotation.

Follow these instructions to resolve these issues and regain optimal performance of the AWP unit.

1. Determine the AWP model number and confirm the correct service input voltage is connected.
 - a. 1-HP AWP Model No. 55-9545-XX-X Service Input 100-120 VAC, 1-Phase
 - b. 1-HP AWP Model No. 55-9565-XX-X Service Input 200-240 VAC, 1-Phase
 - c. 1-HP AWP Model No. 55-9575-XX-X Service Input 200-240 VAC, 3-Phase
 - d. 1-HP AWP Model No. 55-9595-XX-X Service Input 380-500 VAC, 3-Phase
 - e. 1-HP AWP Model No. 55-9585-XX-X Service Input 525-600 VAC, 3-Phase
 - f. 2-HP AWP Model No. 55-9675-XX-X Service Input 200-240 VAC, 3-Phase
 - g. 2-HP AWP Model No. 55-9695-XX-X Service Input 380-500 VAC, 3-Phase
 - h. 2-HP AWP Model No. 55-9685-XX-X Service Input 525-600 VAC, 3-Phase
 - i. 2-HP AWP Model No. 55-7675-XX-X Service Input 200-240 VAC, 3-Phase
 - j. 2-HP AWP Model No. 55-7695-XX-X Service Input 380-500 VAC, 3-Phase
 - k. 2-HP AWP Model No. 55-7685-XX-X Service Input 525-600 VAC, 3-Phase

2. Confirm the motor catalog number installed on the AWP and compatible Program Rev
 - a. 85595000 Rev A Original 1-HP Leeson Motor Cat. No. 192055.30 Program Rev A
 - b. 85595000 Rev C Latest 1-HP Leeson Motor Cat. No. 192244.00 Program Rev B or C
 - c. 85595000 Rev E Elprom Motor Cat No. STX-00434 or MT080OML26322S Program Rev B or C or D
 - d. 85595000 Rev F Techtop Motor Cat No. GR3-AL-TF-80B35-4-B-D-1 Program Rev B or C or D
 - e. 85596000 Rev A Original 2-HP Leeson Motor Cat. No. 192206.30 Program Rev A
 - f. 85596000 Rev C Latest 2-HP Leeson Motor Cat. No. 192206.00 Program Rev B or C
 - g. 85596000 Rev E Elprom Motor Cat No. STX-00435 or MT090OML26328S Program Rev B or C or D
 - h. 85596000 Rev F Techtop Motor Cat No. GR3-AL-TF-90B35-4-B-D-2 Program Rev B or C or D

3. Confirm the Variable Frequency Drive model number and Program Rev installed on the AWP.
 - a. 85595507 1-HP VFD Model No. ATV12H075F1 Program No. PRG5500_A or B or C or D
 - b. 85595510 1-HP VFD Model No. ATV12H075M2 Program No. PRG5501_A or B or C or D
 - c. 85595515 1-HP VFD Model No. ATV12H075M3 Program No. PRG5502_A or B or C or D
 - d. 85595515 1-HP VFD Model No. ATV12H075M3 Program No. PRG5509_A or B
 - e. 85595549 1-HP VFD Model No. ATV320U15N4C Program No. PRG5504_A or B or C or D
 - f. 85595549 1-HP VFD Model No. ATV320U15N4C Program No. PRG5510_A or B
 - g. 85595564 1-HP VFD Model No. ATV320U07S6C Program No. PRG5507_A or B

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- h. 85595564 1-HP VFD Model No. ATV320U07S6C Program No. PRG5511_A or B
 - i. 85596500 2-HP VFD Model No. ATV12HU15M3 Program No. PRG5505_A or B or C or D
 - j. 85596500 2-HP VFD Model No. ATV12HU15M3 Program No. PRG5512_A or B
 - k. 85595549 2-HP VFD Model No. ATV320U15N4C Program No. PRG5506_A or B or C or D
 - l. 85595549 2-HP VFD Model No. ATV320U15N4C Program No. PRG5513_A or B
 - m. 85596502 2-HP VFD Model No. ATV320U15S6C Program No. PRG5508_A or B
 - n. 85596502 2-HP VFD Model No. ATV320U15S6C Program No. PRG5514_A or B
 - o. 85596500 2-HP VFD Model No. ATV12HU15M3 Program No. PRG5515_A or B
 - p. 85595549 2-HP VFD Model No. ATV320U15N4C Program No. PRG5516_A or B
 - q. 85596502 2-HP VFD Model No. ATV320U15S6C Program No. PRG5517_A or B
4. If VFD is not labeled with the loaded program or if VFD program is being updated to the latest program revision, load correct program I.A.W. EN5512 using Multi-Loader or PC with SoMove software.
5. Compatibility Example:
- a.1. 55-9545-XX-X with motor Cat. No. 192055.30 uses ATV12H075F1 Program No. PRG5500_A
 - a.2. 55-9545-XX-X with motor Cat. No. 192244.00 uses ATV12H075F1 Program No. PRG5500_B or C
6. If unable to update the VFD program per Item 4, but are able to manually update and perform auto-tune procedure with the VFD Program Rev A, proceed to the following instructions.
7. Contact Vekttek Customer Support at 1-800-992-0236 if needed for assistance.

DANGER: HAZARD OF ELECTRIC SHOCK OR ARC FLASH

- During auto-tuning, the motor operates at rated current.
- Do not service the motor during auto-tuning procedure.
- Procedure must be performed by qualified Electrical Service Technician.

Failure to follow these instructions will result in death or serious injury.

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ATV12 / ATV320 Auto-tuning Procedure

1. Connect power to pump.
2. Remove enclosure cover. **DANGER: HAZARD OF ELECTRIC SHOCK OR ARC FLASH**
3. **IMPORTANT:** Verify and/or modify the following VFD program parameter values to be equal to those values on the motor name plate for the rated supply voltage. Use the MODE button, ESC button, and JOG dial/button to navigate to the following VFD program parameters and set values as follows: (as shown on LED screen)
 - a. ATV12 MODE > ConF > FULL > drC- >
 - b. ATV320 MODE > ConF > FULL > SIF- >
 - i. Nominal Motor Voltage <UnS> = VOLT at 60 HZ 230V or 460V for 2-HP AWP ATV320U15N4C
 - ii. Nominal Motor Frequency <FrS> = 60 HZ
 - iii. Nominal Current Rating <nCr> = AMPS at 60 HZ 230V or 460V for 2-HP AWP ATV320U15N4C
 - iv. Nominal Motor Speed <nSP> = R.P.M.
 - v. Rated Motor Power <nPr> = H.P. (1.0 or 2.0)
4. Start pump using On/Off/Jog switch to build a small amount of pressure in the system, 10 psi minimum. Do not run continuously. The auto-tuning process must be done with the motor in a "cold" state.
5. Adjust pump manifold electronic pressure switch as follows in this order. (see IS7075)
 - a. Reset Pont 1 (RP1) = 0 psi
 - b. Set Point 1 (SP1) < 10 psi (must be less than current system pressure)
6. Use the MODE button, ESC button, and JOG dial/button to navigate to the following VFD program parameters and temporarily set values as follows: (as shown on LED screen)
 - a. MODE > ConF > FULL > FU- > Stt- > nSt > nO (was L2L for ATV12 or [L12 for ATV320](#))
 - b. MODE > ConF > FULL > FU- > Stt- > FSt > nO (was L1L for ATV12 or [L11 for ATV320](#))
 - c. Push ESC button repeatedly until LED screen shows as "rdY"
7. Disconnect power to pump via breaker/motor starter switch set to "Off".
8. Pause to let VFD completely power down.
9. Reconnect power to pump via breaker/motor starter switch set to "On".
10. After power up, select the "Lighted Reset Button" on top of the enclosure. (Automatic fault rest for ATV320)
The VFD LED screen should show as "rdY".

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11. To perform the Auto-tune procedure, use the MODE button, ESC button, and JOG dial/button to navigate to the following VFD program parameters and set values as follows: (as shown on LED screen)
 - a. ATV12 MODE > ConF > FULL > drC- > tUn > YES (must hold until finished)
 - i. (will change to "tUn > nO" when complete)
 - b. ATV320 MODE > ConF > FULL > drC- > ASY- > tUn > YES (must hold until finished)
 - i. (will change to "tUn > nO" when complete)
 - c. ATV320 MODE > ConF > FULL > drC- > ASY- > tUS > done (if auto-tune completed successfully)
 - d. MODE > ConF > FULL > FU_n- > Stt- > nSt > L2L for ATV12 or LI2 for ATV320 (was nO)
 - e. MODE > ConF > FULL > FU_n- > Stt- > FSt > L1L for ATV12 or LI1 for ATV320 (was nO)
 - f. Push ESC button repeatedly until LED screen shows as "nst"
12. Disconnect power to pump via breaker/motor starter switch set to "Off".
13. Pause to let VFD completely power down.
14. Reconnect power to pump via breaker/motor starter switch set to "On".
15. After power up, select the "Lighted Reset Button" on top of the enclosure. (Automatic fault rest for ATV320)
16. The VFD LED screen will show as "nSt".
17. Adjust pump manifold electronic pressure switch as follows in this order. (see IS7075)
 - a. Set Point 1 (SP1) < 5000 psi (or set to customer requirement)
 - b. Reset Pont 1 (RP1) = 4500 psi (or set to customer requirement)
18. Run/Jog the pump to check for proper pump rotation and function.
19. Re-install the enclosure cover. **DANGER: HAZARD OF ELECTRIC SHOCK OR ARC FLASH**
20. Contact Vektek Customer Support at 1-800-992-0236 if needed for assistance.

Replacement Motor Compatibility Requirement Notes

1. All replacement motors must be reconfigured before shipment and accompanied by a hard copy of IS5504 to update the pump VFD program upon receipt by the customer.
2. All replacement VFD's must be programmed I.A.W. EN5512 and IS5504 prior to shipment. Customer to supply Vektek with Model No., Serial No, and Date Code with Revision from nameplate mounted on pump deck before VFD can be correctly programmed and shipped.