

1992 AGA3 FLOW CALCULATION PROGRAM

User Manual

**Form A6030
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Revision Tracking Sheet

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1 INTRODUCTION

The 1992 AGA3 Flow Calculation Program allows a ROC300-Series Remote Operations Controller (ROC) to perform the 1992 version of the AGA3 orifice flow calculations. When loaded into RAM in the ROC, the program augments the AGA flow calculation firmware contained in the ROCPAC and permits configuration by means of the Type GV101 Configuration Software.

The AGA program is downloaded into RAM in the ROC, and is linked to the ROC Operating System through a User Task. In addition to adding the 1992 version of AGA3 calculations, the program adds the ability to use metric units (metric inputs are accepted for the flow calculation and results are produced in terms of metric units).

Two new configuration screens (point types) are added to the GV101 configuration by the AGA program: Run Parameters and Extra Run Parameters. In addition, changes are made in the Flow Parameters configuration. See the GV101 Configuration Software User Manual for information on how to configure these parameters.

This document is intended to be used in conjunction with the *GV101 Configuration Software User Manual (Form A4194)* to assist in the downloading and configuration of the 1992 AGA3 user program.

2 DOWNLOADING THE USER PROGRAM

NOTE

An IBM-compatible computer must be connected to the ROC Operator Interface port before the downloading process is started, and RAM must be installed in the intended download memory area.

2.1 Program Requirements

The AGA program is downloaded to, and run from RAM memory--either in the ROCPAC or in a RAM module. These are the requirements for downloading and running the software (files GAS.H00 and AGATBL.H00) in the RAM portion of a ROCPAC module:

- ROCPAC (with RAM) module must be:
 - Version 1.09 or greater for ROC306/ROC312.
 - Version 1.63 or greater for ROC364.
- Segments C000 and D000--specifically blocks C000, C400, C800, CC00, and D000--must be available in ROCPAC RAM, and the USER 4 Task must be free.
- GV101 Configuration Software, Version 1.60 or greater.

These are the requirements for downloading and running the software (programs GAS_A0.H00 and AGATBLA0.H00) in a RAM module, which can be a 256K module with the proper switch setting or a 128K module in memory slot 3 for a ROC364:

- ROCPAC module must be:
 - Version 1.09 or greater for ROC306/ROC312.
 - Version 1.63 or greater for ROC364.
- Segments A000 and B000--specifically blocks A000, A400, A800, AC00, and B000--must be available in the RAM module, and the USER 4 Task must be free.
- GV101 Configuration Software, Version 1.60 or greater.

2.2 Checking User Memory

To check the availability of user memory, you can use a GV101 utility. Start the GV101 software, and log in to obtain the Main Menu. Select the Utilities option by pressing the F8 softkey. From the Utilities Menu, select the User Program Routines option. Selecting the User Programs Routines utility brings up the following display:

```

User Routines

1 = Clear All User Memory
2 = Check User Memory Allocation
3 = Download User Program

Enter Selection =
    
```

Check the user memory for currently loaded user programs by selecting the Check User Memory Allocation option. See if a user program is already loaded anywhere in the targeted memory segments (see section 2.1, Program Requirements). If another user program is already loaded in the targeted area and:

- You want to keep it there, see if you can load the AGA program in the other possible memory area by checking the availability of the memory (you may need to add RAM).
- You still want to use the existing program, locate its program files and see if you can load it into a different memory area (you may need to add RAM).
- You don't want to keep it, simply load the AGA program over it.

If the check reveals that no user programs are loaded at all, it is recommended that you clear the user memory as described below. If you are totally reconfiguring or upgrading the ROC, it is likewise recommended to clear the user memory.

To clear the user memory, select the Clear All User Memory option shown above. If there are user programs loaded that you still need, locate the program files and load them back in after clearing the memory. Keep in mind that the program data of all reloaded programs will be reinitialized.

Refer to Section 8, Utilities, in the GV101 User Manual (Form A4194) for details on using the Clear All User Memory and Check User Memory Allocation options.

2.3 Download Procedure

NOTE

The following procedure explains how to load the user program from the diskette on which it is supplied. To load the program from some other source, or to load it concurrent with other program files, refer to section 8.8, User Program Routines, in the *GV101 Configuration Software User Manual*.

To download the AGA program, start up the GV101 Configuration Software and perform the following steps.

1. Select the Utilities option from the Main Menu or press F8. The ROC Utilities Menu appears.
2. From the ROC Utilities Menu, select “User Program Routines” (option 6). The following display appears:

```

                User Routines

                1 = Clear All User Memory
                2 = Check User Memory Allocation
                3 = Download User Programs

Enter Selection =
```

3. To avoid loading the AGA program over an existing program that you may want to keep, make sure to check the user memory as described in section 2.2.
4. Insert the AGA program diskette into a disk drive and select “Download User Programs” (option 3) in the User Routines menu.
5. If the AGA program files are not listed in the display that appears, use the “up” and “down” arrow keys to indicate the drive containing the program diskette, and then press ENTER. In the list of AGA program files, use the “up” and “down” arrows to indicate the desired file (either AGATBL.H00 or AGATBLA0.H00--see section 2.1) and then press ENTER.
6. The display then shows the program file you selected and asks you to verify your choice. Press F2 to continue.
7. A new display appears with the program file you just selected listed under “File to Download:”. Press F1 to select another program file.
8. If the AGA program files are not listed in the display that appears, use the “up” and “down” arrow keys to indicate the drive containing the program diskette, and then press ENTER. In the list of AGA program files, use the “up” and “down” arrows to indicate the desired file (either GAS.H00 or GAS_A0.H00--see section 2.1) and then press ENTER.
9. The display then shows the program file you selected and asks you to verify your choice. Press F2 to continue. Then, start the downloading process by pressing ENTER.

10. In the menu that appears, select “Download file(s)” (option 1) and press ENTER. The files then begin to load (which can take up to several minutes), and information is displayed in the following format:

```
Downloading File A:XXXXXX.H00
```

```
Data Sent nnnnn
Segment nnnn
Offset nnnn
Bytes nnn
```

11. When the file has been downloaded, the following message is added to the display:

```
Download complete, Press <ENTER> to Enable Flags Automatically
<Esc> to Cancel.
```

Press ENTER to automatically enable the appropriate User Enable flags and perform a Warm Start. This will start the program.

12. The following message is added to the display:

```
Wait for Warm Start.....
```

```
Flag Enable Complete, Press Any Key to Continue
```

Press a key, and you are returned to the User Routines menu. (Press ESC to exit from this menu.) This completes the download and starting of the 1992 AGA3 user program.

Note that it is possible to postpone running the program by pressing ESC when the display reports “Download complete” (see step 11). Since this action skips the automatic enabling of the User Enable flag, you will then need to use the ROC Flags display (see section 2.4.8 of the GV101 User Manual) to start the program. From the ROC Flags display, set the associated User Enable flag (User Prog Enable for a program running in a USER Task) and perform a Warm Start.

NOTE

After downloading and starting a program, if it doesn't seem to work correctly, try clearing the user memory as described in section 2.2. Then, reload the program.

3 CONFIGURING FLOW POINTS

Once the AGA program is downloaded, the AGA Flow Points (particularly those employing 1992 AGA3 calculations) need to be configured by using the GV101 Configuration Software. When you select Configure, and then Configure ROC, you should see two new options at the bottom of the Configure from ROC menu: Run Parameters and Extra Run Parameters.

NOTE

If the Run Parameters and Extra Run Parameters options don't appear in the Configure from ROC menu, quit the GV101 Configuration Software and then restart it to gain access to these options.

Proceed with configuration of AGA Flow Points by first using the Run Parameters option (note especially the Calc Method parameter). For 1992 AGA3 meter runs, continue configuration by using the Run Parameters and Extra Run Parameters options. See the GV101 User Manual for further information on how to configure these parameters.