VACTOR®
Manufacturing Inc.

SERVICE BULLETIN
Safety Recall

TO: All Dealer Principals, Service Managers and Parts Managers

Subject: 2100i Interlocks

Number: SB 0304 DATE: 02/03/2020

NOTICE

PURPOSE:

When in RECIRC or Flusher mode and switching to Jetting Mode the safety interlocks may fail to inhibit Jetting Mode if the unit is in drive. 2100i chassis, engine and transmission CANBus signals have changed over time. There are multiple CANBus signals the 2100i controls use for safety interlocks and some signals are not being consistently transmitted on the CANBus. This software update adds an additional interlock to inhibit work while in drive.

Note: the programming update is backward compatible to all units. All previous program versions must not be used and must be deleted.

UNITS TO SERVICE:

See attached list

Units with RECIRC or flusher as original equipment or retro-fitted are the highest priority.

PARTS AVAILABILITY: XX/XX/XXXX

WARRANTY COVERAGE:

Refer to last page of this bulletin for warranty instructions. A photo of the hose reel System Info screen and new decal installation after completion will be required.

## LENGTH OF TIME

See Warranty page

SPECIAL TOOLS:

NA

PARTS REQUIRED:

Part No.	Qty.	Description
512098C-30	1	DECAL,2100I SHIFT DECAL ONLY

A copy of this bulletin must stay with the unit

PROCEDURE:

1. Shut down the unit on level ground, set the brake, and follow lockout/tagout procedures.

2. Install the system update using the attached instructions.

3. At the hose reel select the System tab.

4. Take a photo of the System Info screen and the new visor decal after installation to be submitted with the warranty.

5. Verify correct operation.
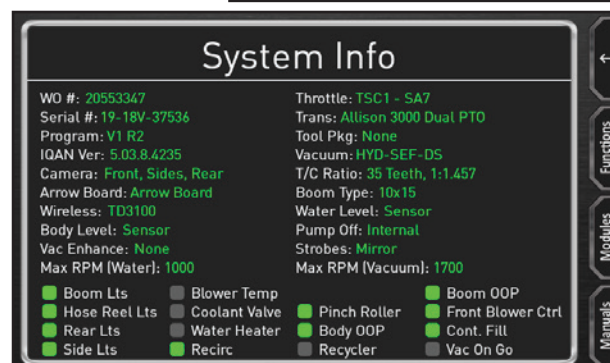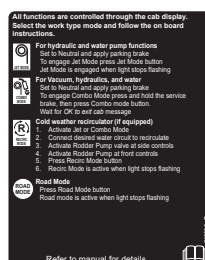
Vactor 2100i

This system automates the Jet, Combo and Recirc modes. The following are the general instructions. On screen guidance is provided as needed.

There is general operation decal typically installed under the driver side visor to guide the operator.

Set to Neutral and apply parking brake to start all jetting and combo mode operations.

All functions are controlled through the cab display. Select the work type mode and follow the on board instructions.

For hydraulic and water pump functions
JET MODE
   Set to Neutral and apply parking brake
   To engage Jet Mode press Jet Mode button
   Jet Mode is engaged when light stops flashing

For Vacuum, hydraulics, and water
COMBO MODE
   Set to Neutral and apply parking brake
   To engage Combo Mode press and hold the service brake, then press Combo mode button.
   Wait for *OK to exit cab* message

Cold weather recirculator (if equipped)
RECIRC MODE
1. Activate Jet or Combo Mode
2. Connect desired water circuit to recirculate
3. Activate Rodder Pump valve at side controls
4. Activate Rodder Pump at front controls
5. Press Recirc Mode button
6. Recirc Mode is active when light stops flashing

Road Mode
ROAD MODE
   Press Road Mode button
   Road mode is active when light stops flashing

512098 rB

Refer to manual for details.

All functions are controlled through the cab display. Select the work type mode and follow the on board instructions.

For hydraulic and water pump functions
JET MODE
   Set to Neutral and apply parking brake
   To engage Jet Mode press Jet Mode button
   Jet Mode is engaged when light stops flashing

For Vacuum, hydraulics, and water
COMBO MODE
   Set to Neutral and apply parking brake
   To engage Combo Mode press and hold the service brake, then press Combo mode button.
   Wait for *OK to exit cab* message

Cold weather recirculator (if equipped)
RECIRC MODE
1. Activate Jet or Combo Mode
2. Connect desired water circuit to recirculate
3. Activate Rodder Pump valve at side controls
4. Activate Rodder Pump at front controls
5. Press Recirc Mode button
6. Recirc Mode is active when light stops flashing

Vac on Go
VOG
VAC ON GO MODE
1. Activate in Combo Mode
2. Choose wireless, choose fan/blower speed, enable vacuum, throttle up (all the same as normal)
3. Press VOG mode button
4. VOG is active when light stops flashing and VOG page is active. Release park brake and drive using VOG pedal

Road Mode
ROAD MODE
   Press Road Mode button
   Road mode is active when light stops flashing

512098A rB

Refer to manual for details.

PROCEDURE CONTINUED:

Photos of the hose reel System Info screen and new decal installation after completion will be required.
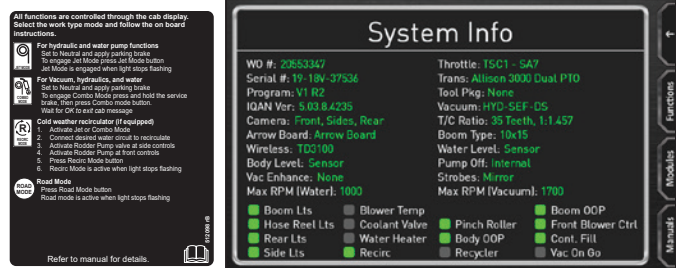
Warranty Coverage and Claim Submittal

Standard Repair Time (SRT) of **2** hrs and **0** min is allowed. Photos of the hose reel System Info screen and new decal installation after completion will be required.

Use the following information when submitting a warranty claim:

2100i IQAN Programming Guide

1. Pre-update function checks – the purpose of pre-update checks is to validate all functions of the truck are working before installing the update. This step is necessary to ensure proper validation for the program update. Repair any malfunctions prior to installing the update.
   a. Test all functions on the 2100i per the provided checklist to make sure they are currently in working order.
2. Program Update
   a. Record Current Settings – this can be done by writing down the information, taking pictures of the display screens, or through IQAN Run if your login allows you access to these items. This process will show how to find this information via the display.
       i. **Hours – press the system tab, then functions, then Hours/cycles. Record this information**
      ii. Configuration – press system tab to get to the system info screen. Record this information.
     iii. Installed Options – this information is also available on the system info screen.
      iv. Adjust Groups
           1. Go to Menu, then Adjust, then record all of the Tune Up settings as well as Accu-count and Units Settings (tune up code will be needed if not logged in to IQAN Run)
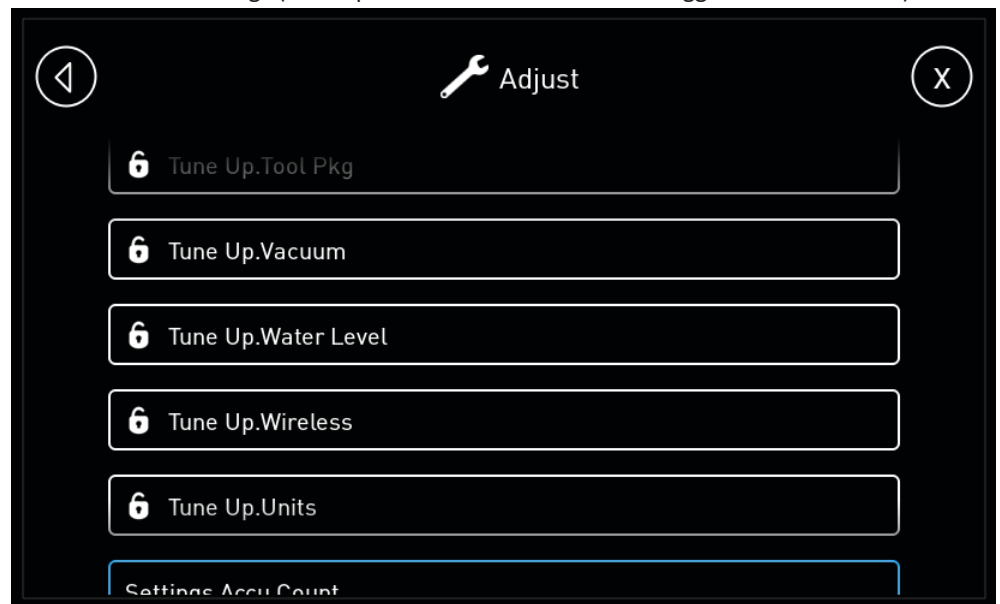
           2.
           3. This step should also include sensor calibrations for body level, rodder shift points, rodder flow calibration, and other calibration settings in Tune Up.Setup Pages
   b. Upload Program and Confirm Program
       i. Upload Program
      ii. Confirm Configuration and Options
           1. Confirm that the configuration and optional content of the truck is the same as it was previously. It is possible that there will be new configuration items or options to set if a newer program was installed. It is less likely but also possible that the configuration and options have been erased. This would only happen during a major update though.

        2. Configuration and options can be validated on the system info page. Press system tab to get to the system info screen.

        3. If the configuration or options have changed, note these to be changed in a later step

    iii. Confirm Adjust groups

        1. Go to Menu, then Adjust, then check all of the Tune Up settings as well as Accu-count and Units Settings (tune up code will be needed if not logged in to IQAN Run) against those that you recorded from before the program update.

        2. If the adjust group settings have changed, note these to be changed in a later step

    iv. Confirm Hours

        1. Hours – press the system tab, then functions, then Hours/cycles.

        2. Check this information against your recordings from before the program update. If the hour meter readings have changed, note these to be changed in a later step

  c. Making changes – if changes need to be made, consult programming guide.

3. Post-update function checks – the purpose of post-update checks is to validate all functions of the truck are working and that the truck is ready to operate.

  a. Test all functions on the 2100i per the provided checklist to make sure they are currently in working order.

2100i RE-PROGRAMMING CHECKLIST

Unit S/N _____

PROGRAM VERSION/REV _____

DEALERSHIP _____

TECHNICIAN _____

REPROGRAMMING PRE-CHECK

REPROGRAMMING POST-CHECK

	COMPONANT	ACTION	Y	N	COMPONANT	ACTION	Y	N
Cab Display	**Shift To Modes** *Follow new cab instructions*	Jet			**Shift To Modes** *Follow instructions on next page*	Jet - Test 1		
						Jet - Test 2		
		Combo				Combo - Test 3		
						Combo - Test 4		
		Recirc				Recirc - Test 5		
						Recirc - Test 6		
		VOG				VOG - Test 7		
						VOG - Test 8		
Front Hose Reel Op Station	**Rodder Pump**	Shift			**Rodder Pump**	Shift		
	Boom	Up			**Boom**	Up		
		Down				Down		
		Left				Left		
		Right				Right		
		Extend				Extend		
		Retract				Retract		
	5x5 or RDB	Hose In			**5x5 or RDB**	Hose In		
		Hose Out				Hose Out		
	Hose Reel	Extend			**Hose Reel**	Extend		
		Retract				Retract		
	Strobes	Enable/Disable			**Strobes**	Enable/Disable		
	Work Lights	Enable/Disable			**Work Lights**	Enable/Disable		
	Arrowboard/Arrowstick	Enable/Disable			**Arrowboard/Arrowstick**	Enable/Disable		
	Vacuum	Enable/Disable			**Vacuum**	Enable/Disable		
		Vac Enhance				Vac Enhance		
	Front Blower Control	Enable/Disable			**Front Blower Control**	Enable/Disable		
	Throttle	Increase/Decrease			**Throttle**	Increase/Decrease		
	E-Stop	Enable/Disable			**E-Stop**	Enable/Disable		
	Body	Up			**Body**	Up		
		Down				Down		
	Wireless	All Functions			**Wireless**	All Functions		
	Pendant	All Functions			**Pendant**	All Functions		

MODE INTERLOCKS TEST

MODE	TEST	ACTION	PASS	FAIL
Jet Mode	1	With parking brake enabled, select Jet mode	Jet mode achieved - Pass	Jet mode not achieved - Fail
	2	While in Jet mode, Release parking brake	Unit drops out of jet mode - Pass	Unit retains Jet mode - Fail
Combo Mode	3	With parking brake on, select combo without engaging service brake	Combo mode not achieved - Pass	Combo mode achieved - Fail
	4	With parking brake on, select combo while engaging service brake	Combo mode achieved - Pass	Combo mode not achieved - Fail
Recirc Mode	5	Following the instructions in the cab, put truck into recirc mode	Recirc mode achieved - Pass	Recirc mode not achieved - Fail
	6	While in recirc mode, select drive and then select Jet mode	Jet mode not achieved - Pass	Jet mode achieved - Fail
Vac on the Go	7	Following the instructions in the cab, put truck into VOG mode	VOG mode achieved - Pass	VOG mode not achieved - Fail
	8	While in VOG mode, select combo mode	Combo mode achieved - Pass	Combo mode not achieved - Fail

Units with RECIRC option

Serial Number	Serial Number	Serial Number	Serial Number	Serial Number
17-03V-16657	18-08V-17658	18-10V-17809	18-11V-17925	19-01V-18033
17-11V-17085	18-08V-17659	18-10V-17810	18-11V-17931	19-01V-18040
17-11V-17094	18-08V-17668	18-10V-17817	18-11V-17934	19-01V-18041
17-11V-17098	18-08V-17671	18-10V-17820	18-11V-17939	19-01V-18045
17-11V-17100	18-08V-17672	18-10V-17826	18-11V-17940	19-01V-18046
17-11V-17104	18-08V-17674	18-10V-17829	18-11V-17951	19-01V-18049
17-11V-17109	18-08V-17677	18-10V-17832	18-11V-17952	19-01V-18050
17-12V-17152	18-08V-17686	18-10V-17834	18-11V-17954	19-01V-18051
18-01V-17169	18-08V-17690	18-10V-17835	18-12V-17949	19-01V-18058
18-02V-17251	18-08V-17701	18-10V-17836	18-12V-17955	19-01V-18063
18-02V-17251	18-08V-17703	18-10V-17839	18-12V-17956	19-01V-18071
18-06V-17548	18-08V-17704	18-10V-17840	18-12V-17957	19-01V-18075
18-06V-17553	18-08V-17706	18-10V-17849	18-12V-17958	19-01V-18077
18-06V-17554	18-08V-17708	18-10V-17850	18-12V-17960	19-01V-18087
18-06V-17563	18-08V-17709	18-10V-17851	18-12V-17962	19-01V-18090
18-06V-17565	18-08V-17712	18-10V-17852	18-12V-17963	19-01V-18091
18-06V-17568	18-08V-17732	18-10V-17853	18-12V-17965	19-01V-18107
18-06V-17571	18-08V-17734	18-10V-17854	18-12V-17966	19-01V-18108
18-06V-17576	18-08V-17735	18-10V-17855	18-12V-17968	19-01V-18119
18-06V-17578	18-08V-17738	18-10V-17858	18-12V-17971	19-02V-18094
18-06V-17580	18-08V-17739	18-10V-17867	18-12V-17973	19-02V-18098
18-07V-17591	18-09V-17743	18-10V-17868	18-12V-17978	19-02V-18100
18-07V-17592	18-09V-17746	18-10V-17870	18-12V-17979	19-02V-18110
18-07V-17593	18-09V-17748	18-10V-17871	18-12V-17981	19-02V-18112
18-07V-17596	18-09V-17752	18-10V-17872	18-12V-17983	19-02V-18116
18-07V-17598	18-09V-17753	18-10V-17876	18-12V-17984	19-02V-18117
18-07V-17601	18-09V-17756	18-10V-17881	18-12V-17992	19-02V-18120
18-07V-17605	18-09V-17757	18-11V-17892	18-12V-18000	19-02V-18121
18-07V-17614	18-09V-17758	18-11V-17893	18-12V-18002	19-02V-18123
18-07V-17615	18-09V-17765	18-11V-17894	18-12V-18003	19-02V-18130
18-07V-17616	18-09V-17767	18-11V-17897	18-12V-18004	19-02V-18133
18-07V-17617	18-09V-17769	18-11V-17898	18-12V-18005	19-02V-18137
18-07V-17618	18-09V-17775	18-11V-17899	18-12V-18006	19-02V-18138
18-07V-17619	18-09V-17776	18-11V-17900	18-12V-18007	19-02V-18140
18-07V-17620	18-09V-17777	18-11V-17901	18-12V-18009	19-02V-18142
18-07V-17621	18-09V-17779	18-11V-17903	19-01V-18014	19-02V-18143
18-07V-17634	18-09V-17781	18-11V-17909	19-01V-18015	19-02V-18145
18-07V-17636	18-09V-17784	18-11V-17910	19-01V-18016	19-02V-18146
18-07V-17637	18-09V-17795	18-11V-17912	19-01V-18018	19-02V-18149
18-07V-17639	18-09V-17796	18-11V-17913	19-01V-18019	19-02V-18152
18-07V-17640	18-09V-17797	18-11V-17916	19-01V-18020	19-02V-18153
18-07V-17641	18-09V-17798	18-11V-17917	19-01V-18024	19-02V-18163
18-07V-17642	18-09V-17799	18-11V-17919	19-01V-18032	19-02V-18166
18-08V-17646	18-09V-17800	18-11V-17922		19-02V-18167

Units with RECIRC option

Serial Number	Serial Number	Serial Number	Serial Number	Serial Number
19-02V-18169	19-04V-18274	19-05V-18401	19-06V-18495	19-08V-18614
19-02V-18170	19-04V-18278	19-05V-18403	19-06V-18496	19-08V-18615
19-03V-18178	19-04V-18279	19-05V-18407	19-06V-18500	19-08V-18616
19-03V-18179	19-04V-18281	19-05V-18408	19-06V-18501	19-08V-18618
19-03V-18181	19-04V-18286	19-05V-18410	19-06V-18505	19-08V-18622
19-03V-18185	19-04V-18288	19-05V-18412	19-06V-18506	19-08V-18624
19-03V-18186	19-04V-18289	19-05V-18413	19-06V-18511	19-08V-18625
19-03V-18188	19-04V-18291	19-05V-18421	19-06V-18515	19-08V-18630
19-03V-18189	19-04V-18292	19-05V-18422	19-06V-18516	19-08V-18631
19-03V-18191	19-04V-18294	19-05V-18424	19-06V-18517	19-08V-18636
19-03V-18194	19-04V-18295	19-05V-18425	19-06V-18518	19-08V-18638
19-03V-18197	19-04V-18300	19-05V-18429	19-06V-18522	19-08V-18639
19-03V-18204	19-04V-18301	19-05V-18431	19-06V-18523	19-08V-18642
19-03V-18208	19-04V-18303	19-05V-18433	19-07V-18528	19-08V-18643
19-03V-18209	19-04V-18308	19-05V-18434	19-07V-18533	19-08V-18645
19-03V-18214	19-04V-18312	19-05V-18455	19-07V-18534	19-08V-18654
19-03V-18215	19-04V-18321	19-06V-18437	19-07V-18539	19-08V-18657
19-03V-18217	19-04V-18322	19-06V-18438	19-07V-18541	19-08V-18658
19-03V-18218	19-04V-18325	19-06V-18439	19-07V-18546	19-08V-18663
19-03V-18219	19-04V-18328	19-06V-18442	19-07V-18547	19-08V-18664
19-03V-18221	19-04V-18337	19-06V-18446	19-07V-18548	19-08V-18665
19-03V-18223	19-04V-18339	19-06V-18447	19-07V-18550	19-08V-18666
19-03V-18224	19-04V-18340	19-06V-18448	19-07V-18551	19-08V-18671
19-03V-18228	19-05V-18343	19-06V-18449	19-07V-18553	19-08V-18675
19-03V-18229	19-05V-18355	19-06V-18450	19-07V-18559	19-08V-18676
19-03V-18231	19-05V-18357	19-06V-18452	19-07V-18560	19-08V-18678
19-03V-18233	19-05V-18360	19-06V-18453	19-07V-18564	19-08V-18679
19-03V-18234	19-05V-18361	19-06V-18459	19-07V-18565	19-08V-18684
19-03V-18238	19-05V-18362	19-06V-18463	19-07V-18566	19-08V-18685
19-03V-18242	19-05V-18364	19-06V-18466	19-07V-18567	19-08V-18686
19-03V-18246	19-05V-18372	19-06V-18467	19-07V-18571	19-08V-18692
19-03V-18248	19-05V-18375	19-06V-18470	19-07V-18575	19-08V-18694
19-03V-18252	19-05V-18376	19-06V-18471	19-07V-18577	19-09V-18705
19-04V-18255	19-05V-18377	19-06V-18472	19-07V-18578	19-09V-18706
19-04V-18256	19-05V-18379	19-06V-18473	19-07V-18579	19-09V-18709
19-04V-18258	19-05V-18380	19-06V-18477	19-07V-18587	19-09V-18710
19-04V-18259	19-05V-18383	19-06V-18479	19-07V-18588	19-09V-18712
19-04V-18261	19-05V-18384	19-06V-18482	19-07V-18589	19-09V-18717
19-04V-18263	19-05V-18388	19-06V-18483	19-07V-18592	19-09V-18720
19-04V-18264	19-05V-18389	19-06V-18487	19-07V-18593	19-09V-18721
19-04V-18266	19-05V-18393	19-06V-18488	19-07V-18594	19-09V-18723
19-04V-18269	19-05V-18394	19-06V-18490	19-07V-18600	19-09V-18724
19-04V-18270	19-05V-18399	19-06V-18493	19-08V-18608	19-09V-18732
19-04V-18273	19-05V-18400	19-06V-18494	19-08V-18612	19-09V-18733

Units with RECIRC option

Serial Number	Serial Number	Serial Number
19-09V-18734	19-10V-18872	19-12V-19008
19-09V-18737	19-10V-18873	19-12V-19011
19-09V-18738	19-10V-18880	19-12V-19014
19-09V-18742	19-10V-18881	19-12V-19015
19-09V-18744	19-10V-18885	19-12V-19017
19-09V-18745	19-10V-18889	19-12V-19018
19-09V-18751	19-11V-18894	19-12V-19025
19-09V-18752	19-11V-18896	19-12V-19028
19-09V-18753	19-11V-18900	19-12V-19029
19-09V-18755	19-11V-18901	19-12V-19032
19-09V-18760	19-11V-18902	19-12V-19033
19-09V-18765	19-11V-18904	20-01V-19039
19-09V-18770	19-11V-18905	20-01V-19040
19-09V-18774	19-11V-18909	20-01V-19043
19-09V-18775	19-11V-18916	20-01V-19044
19-09V-18776	19-11V-18917	20-01V-19047
19-09V-18779	19-11V-18919	20-01V-19048
19-09V-18784	19-11V-18920	20-01V-19049
19-09V-18786	19-11V-18928	20-01V-19052
19-09V-18787	19-11V-18929	20-01V-19053
19-10V-18791	19-11V-18932	20-01V-19054
19-10V-18792	19-11V-18936	20-01V-19059
19-10V-18794	19-11V-18937	20-01V-19069
19-10V-18796	19-11V-18944	20-01V-19070
19-10V-18809	19-11V-18945	20-01V-19072
19-10V-18812	19-11V-18946	20-01V-19073
19-10V-18817	19-11V-18951	20-01V-19074
19-10V-18818	19-11V-18954	20-01V-19075
19-10V-18821	19-11V-18955	20-01V-19076
19-10V-18822	19-11V-18957	20-01V-19080
19-10V-18824	19-11V-18959	20-01V-19084
19-10V-18831	19-11V-18960	
19-10V-18833	19-11V-18966	**Vactor Demo Units**
19-10V-18836	19-11V-18971	
19-10V-18841	19-11V-18974	17-05v-16730
19-10V-18843	19-12V-18976	19-08v-18644
19-10V-18845	19-12V-18979	19-02v-18125
19-10V-18846	19-12V-18983	
19-10V-18851	19-12V-18985	
19-10V-18858	19-12V-18986	
19-10V-18861	19-12V-18991	
19-10V-18862	19-12V-18996	
19-10V-18865	19-12V-18997	
19-10V-18871	19-12V-19001	

Units without RECIRC option

Serial Number	Serial Number	Serial Number	Serial Number	Serial Number
17-11V-17080	18-11V-17953	19-03V-18237	19-07V-18554	19-10V-18805
17-11V-17112	18-12V-17972	19-03V-18241	19-07V-18556	19-10V-18810
18-06V-17579	18-12V-17975	19-03V-18245	19-07V-18568	19-10V-18814
18-07V-17603	18-12V-17977	19-03V-18251	19-07V-18574	19-10V-18825
18-08V-17663	18-12V-17989	19-04V-18267	19-07V-18581	19-10V-18827
18-08V-17664	18-12V-17990	19-04V-18268	19-07V-18590	19-10V-18828
18-08V-17715	18-12V-17991	19-04V-18304	19-07V-18597	19-10V-18830
18-08V-17736	18-12V-17995	19-04V-18307	19-07V-18601	19-10V-18844
18-09V-17724	18-12V-18001	19-04V-18309	19-07V-18602	19-10V-18855
18-09V-17725	19-01V-18017	19-04V-18311	19-08V-18603	19-10V-18857
18-09V-17726	19-01V-18021	19-04V-18324	19-08V-18605	19-10V-18863
18-09V-17744	19-01V-18022	19-04V-18329	19-08V-18607	19-10V-18867
18-09V-17755	19-01V-18023	19-04V-18330	19-08V-18611	19-10V-18868
18-09V-17762	19-01V-18025	19-04V-18331	19-08V-18619	19-10V-18875
18-09V-17764	19-01V-18037	19-04V-18332	19-08V-18632	19-10V-18876
18-09V-17766	19-01V-18055	19-04V-18333	19-08V-18634	19-10V-18883
18-09V-17768	19-01V-18060	19-04V-18336	19-08V-18635	19-10V-18884
18-09V-17782	19-01V-18064	19-05V-18342	19-08V-18651	19-11V-18892
18-10V-17813	19-01V-18065	19-05V-18348	19-08V-18653	19-11V-18893
18-10V-17814	19-01V-18069	19-05V-18349	19-08V-18662	19-11V-18897
18-10V-17821	19-01V-18074	19-05V-18350	19-08V-18667	19-11V-18898
18-10V-17822	19-01V-18082	19-05V-18352	19-08V-18668	19-11V-18907
18-10V-17823	19-01V-18084	19-05V-18354	19-08V-18672	19-11V-18908
18-10V-17824	19-01V-18088	19-05V-18366	19-08V-18682	19-11V-18914
18-10V-17859	19-01V-18105	19-05V-18367	19-08V-18683	19-11V-18915
18-10V-17863	19-02V-18102	19-05V-18371	19-08V-18691	19-11V-18941
18-10V-17869	19-02V-18103	19-05V-18404	19-09V-18713	19-11V-18953
18-10V-17873	19-02V-18113	19-05V-18409	19-09V-18716	19-11V-18969
18-10V-17877	19-02V-18122	19-05V-18411	19-09V-18735	19-11V-18970
18-11V-17878	19-02V-18127	19-05V-18417	19-09V-18736	19-11V-18973
18-11V-17883	19-02V-18129	19-05V-18418	19-09V-18741	19-12V-18978
18-11V-17887	19-02V-18134	19-06V-18441	19-09V-18749	19-12V-18984
18-11V-17888	19-02V-18148	19-06V-18456	19-09V-18750	19-12V-18990
18-11V-17889	19-02V-18151	19-06V-18464	19-09V-18761	19-12V-18993
18-11V-17890	19-02V-18161	19-06V-18478	19-09V-18762	19-12V-18994
18-11V-17904	19-02V-18171	19-06V-18503	19-09V-18764	19-12V-19000
18-11V-17924	19-03V-18182	19-06V-18507	19-09V-18769	19-12V-19005
18-11V-17932	19-03V-18192	19-06V-18509	19-09V-18777	19-12V-19007
18-11V-17933	19-03V-18193	19-06V-18510	19-09V-18785	19-12V-19012
18-11V-17935	19-03V-18196	19-06V-18514	19-10V-18793	19-12V-19024
18-11V-17936	19-03V-18200	19-07V-18531	19-10V-18797	19-12V-19030
18-11V-17937	19-03V-18205	19-07V-18532	19-10V-18799	20-01V-19055
18-11V-17938	19-03V-18212	19-07V-18535	19-10V-18801	20-01V-19056
18-11V-17950	19-03V-18235	19-07V-18542	19-10V-18802	