



Nilfisk

TECHNICAL SERVICE BULLETIN

Number: TSB-FC-2020-004

Symptom: ES4000 Error Code 12

Date: 5 March 2020

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Urgency: **HIGH:** Rework to be done immediately

Before performing any service ensure safety precautions are followed! Disconnect any applicable power systems. Use of a personal grounding strap is strongly recommended when working with any electrical system.

Symptom:	ES4000 machine is exhibiting Error Code 12 and shutting down operation.
Products:	ES4000
System:	Control System
Related/Prior TSB:	N/A

ISSUE:

After 1-1.5 minutes of standard operation in **Maintenance Mode** the machine stops all functions and displays Error Code 12.

Per the Fault Code table contained on page 47 of the ES4000 Service Manual:

LCD Display Code	Code Definition	Explanation / Code Setting Conditions / Flash Indicator Disables / Check / Thresholds
12	Solution Pump Over Current	Excessive current draw was sensed. Code sets at approx. 4.3A or more. Check for shorted pump winding, shorted wiring

See [Fig. 1]

CAUSE:

The controller manufacturer was changed in 2019. The base PCB design layout was changed. Due to this there is a minute resistance difference in the PCB circuit for the solution pump. When the controller firmware calculates the amp draw on this circuit the calculated outcome is roughly 1.5-2.0 amps higher than the actual solution pump amp draw (this can be verified by comparing the amp draw values between the wiring and the controller: an amp clamp on J1-2 versus the controller displayed amperage (Service Test Mode → Extra Info on LCD → Option #15 "Solution Pump Current")). After a few minutes of normal operation in Maintenance Mode the controller will set error code 12 based upon the incorrect calculated amp draw.

PRODUCTION CORRECTIVE ACTIONS:

The firmware has been updated so the calculated amp draw is accurate. The revision letter of the INTERFACE PANEL ASSY has changed from REV C see [Fig. 3] to REV D see [Fig. 4].

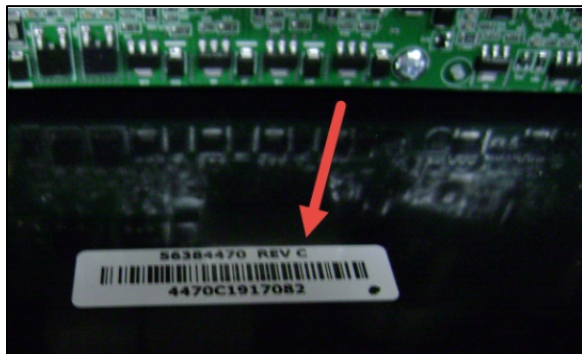


Fig. 3

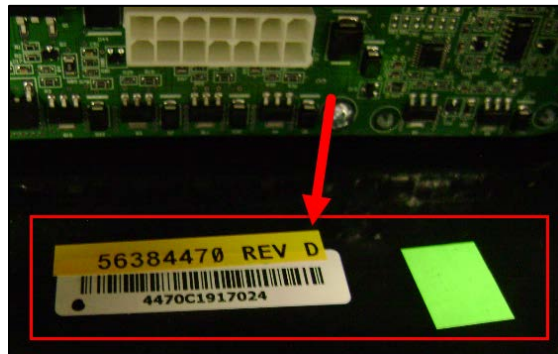


Fig. 4

PRODUCTION SOLUTION IMPLEMENTATION DATE and/or SERIAL NUMBER:

First production machine with new INTERFACE PANEL ASSY (REV. D) installed as Standard equipment:

Implementation Shipping Date: **March 6th 2020**

Serial Number: **4000264158**

The serial number of the machine is shown on the nameplate that is mounted on the steering column facing the driver. Serial Number location detailed below [Fig. 4]



Fig. 5 - Serial Number Location

ECO:

ECO A-14561

FIELD CORRECTIVE ACTIONS:

(All machines found with serial numbers in the table below were produced with a REV.C INTERFACE PANEL ASSY. Approximate ship dates Aug 2019 – Feb 6th 2020.

Verify the serial number of the machine is found on **Table 1** below and the INTERFACE PANEL ASY is **REV. C** see [Fig. 3]. Replacement of the INTERFACE PANEL ASSY (REV.C) will be scheduled through the Nilfisk Service Dispatch team for replacement on all machines listed in the table below

4000240879	4000243247	4000244923	4000248741	4000248751	4000257641	4000261002	4000263016
4000240881	4000243248	4000244924	4000248742	4000248752	4000257642	4000261003	4000263017
4000242134	4000243249	4000247064	4000248743	4000252962	4000257643	4000261004	4000263018
4000242135	4000243250	4000247065	4000248744	4000252963	4000260995	4000261559	4000263620
4000242136	4000243251	4000248053	4000248745	4000253650	4000260996	4000261560	4000263623
4000242137	4000243252	4000248054	4000248746	4000253651	4000260997	4000261561	4000263628
4000242138	4000243253	4000248055	4000248747	4000253652	4000260998	4000263012	4000264157
4000242139	4000243254	4000248405	4000248748	4000257638	4000260999	4000263013	
4000242140	4000243255	4000248406	4000248749	4000257639	4000261000	4000263014	
4000242141	4000243256	4000248407	4000248750	4000257640	4000261001	4000263015	

Table 1

SPARE PARTS or KITS NEEDED:

56344215 CONTROL BOARD KIT

See [Fig. 6]



Fig. 6

TOOLS REQUIRED:

- ESD grounding strap
- Screwdriver