

**OPERATING INSTRUCTIONS
AND PARTS LIST
SMITH EGBP-1-SP-AUTO**



ADCENG GAS EQUIPMENT (PTY) LTD

www.adceng.co.za

P O BOX 5413, JOHANNESBURG 2000

Phone: 011 493-8209

Fax: 011 493-1459

Email: adceng@mweb.co.za

P O BOX 83, PAARDEN EILAND 7420

Phone: 021 511-6671

Fax: 021 511-4891

Email: adcct@mweb.co.za

P O BOX 74225, ROCHDALE 4034

Phone: 031 579-1555

Fax: 031 579-1563

Email: adcdbn@mweb.co.za

Q.A. CHECK LIST

SMITH EGBP-1-SP-AUTO

PUMP SERIAL NO:

Mechanical		Electrical	
Pump Unit correct		Motor connections and cable as per SABS 1031.	
Alignment correct		Proximity Sensor and Control SABS 549.	
Assembled Correctly		Wiring as per diagram	
Test Runs complete and correct		Flame proof cable glands Type correct	
Scale Assized correctly		Test runs complete and correct	
Data Badge correct		Relevant certificates supplied	
Packing correct		Earthing point provided	
No marks on paintwork			
<p>INSPECTED BY: DATE:</p>			

INSTALLATION INSTRUCTIONS

SMITH EG1 PUMP

The EG1 Smith pump is one of the most popular LPG pumps in South Africa. It is commonly used for intermittent duty and filling of small cylinders. It is a positive displacement precision gear pump with a long life super seal.

The inlet and outlet of the EG1 pump is $\frac{3}{4}$ " NPT female.

The pump is supplied with a single phase 220V. 2850 rpm $\frac{3}{4}$ H.P. explosion proof electric motor and an "on" and "off" switch with explosion proof switchbox.

INSTALLATION INSTRUCTIONS EG1 SMITH PUMP WHEN USED ON A BULK TANK

The pump should be placed as near as possible and underneath the bulk tank to give the pump a maximum inlet head. The inlet pipe should be 1" or larger and as short as possible. If the pump is used for filling of cylinders extensively an external Corken By-pass valve B-166 is recommended to be fitted on the outlet pipe. The internal by-pass will open at 500 kPa differential pressure so when an external by-pass is used it should be set at 400 kPa and the internal will only act as an emergency by-pass. If no by-pass is used back to the tank, the pump should be switched off after each bottle is filled. A pressure gauge and vent valve is fitted on the outlet of the pump. Observe the pressure gauge to determine that the differential pressure builds up. This does not occur if the pump is vapour locked. In this case vent the vapour until the liquid appears.

INSTALLATION INSTRUCTIONS EG1 SMITH PUMP USED WITH A MANIFOLD

EG1 pumps can be used on manifold installations. A minimum of double 3 upright liquid withdrawal cylinders is recommended. The manifold should be mounted on a wall or stand at cylinder valve height. All the cylinder valves on the service side of the manifold must be fully open (not only one or two). The pump should be mounted directly under the manifold on the floor at the same height as the cylinder is standing. The hose or pipe from the manifold to the inlet of the pump should be $\frac{1}{2}$ " or minimum.

The performance and life of a pump used in a manifold installation will vary, depending on the correct installation and mainly on the operator. When filling the operator must be present. The pump must be switched off when the pressure gauge fitted on the outlet of the pump does not show any differential pressure. This means there is a vapour lock, vapour in the pump, or in the line, or the cylinders being drawn from are empty. If one side of the manifold is empty it should be closed. The full side of the manifold should be opened and arrangements should be made to replace the empty cylinders. Thereafter pumping can continue.

**OPERATING INSTRUCTIONS SMITH EGBP-1-SP-AUTO
(REFER TO DRAWING)**

**A SUITABLY TRAINED OPERATOR MUST ALWAYS BE PRESENT
DURING THE FILLING OPERATION**

INITIAL PREPARATION OF SCALE:

- a) Ensure that the filling hose up to the quick-acting valve (1) is filled with liquid by venting the air out of the hose. Now place the hose and quick acting valve on the platform of the scale. The beam (2) should be in equilibrium at this stage with the sliding weight (3) at zero.
- b) If the scale is not in equilibrium, turn the screw (4) at the back of the beam in or out using a screwdriver. This will adjust the beam to the required equilibrium position.

FILLING PROCEDURE:

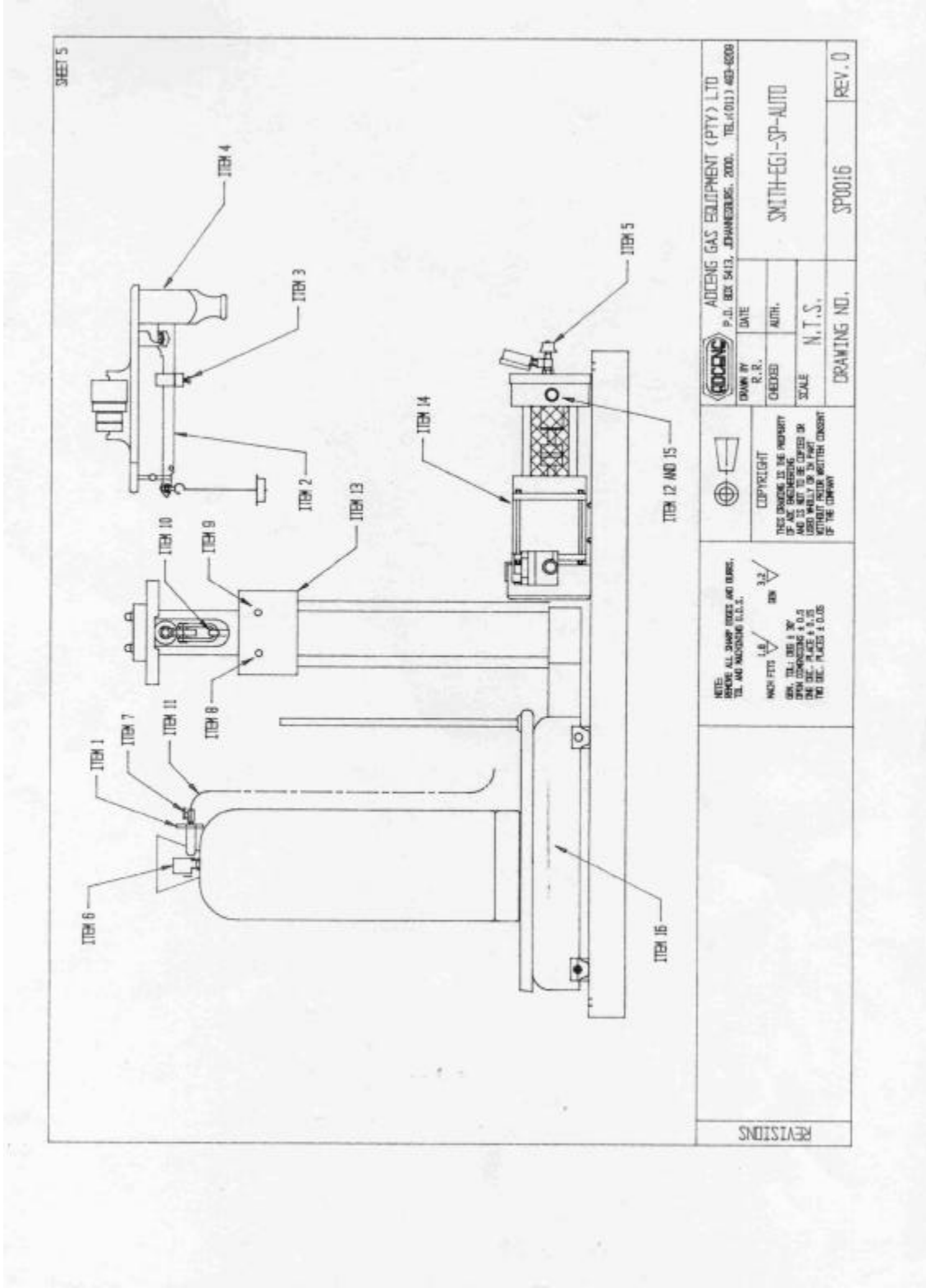
- c) Place cylinder to be filled on the platform scale and connect filler valve (1) to the cylinder valve.
- d) Calculate the correct filling mass (i.e. tare mass plus cylinder gas capacity mass) and set scale to the calculated mass.
- e) Ensure the Smith pump is vapour free before switching on i.e. open vent valve (5) on pump head until liquid appears then close vent valve tightly.
- f) Open cylinder valve (6) on cylinder being filled, open quick valve (7) and press the green start button (8) for the pump to operate. When the correct filling mass has been reached the beam (2) will move up and the pump will automatically stop. The cylinder is now filled.
- g) Close the quick acting valve (7) and the cylinder valve (6).
- h) Disconnect filler valve (1) and remove cylinder from scale platform. The next cylinder can now be filled and follow procedure again from (c).

NOTE 1:

While pump is in operation the sight glass indicator should be observed so as to ensure liquid is present at all times. If not, stop operation by pressing red stop button (9) and investigate reason. Ensure supply vessels are not empty (if so change) and begin procedure from Point (e) again.

March 2005

Sheet: 5 of: 7



SHEET 5

ADICENG GAS EQUIPMENT (PTY) LTD P.O. BOX 5473, JHBURG, 2000. TEL: (011) 463-6000	
DRAWN BY R. R.	DATE
CHECKED	AUTH.
SCALE	N.T.S.
DRAWING NO.	SP0016
REV. 0	

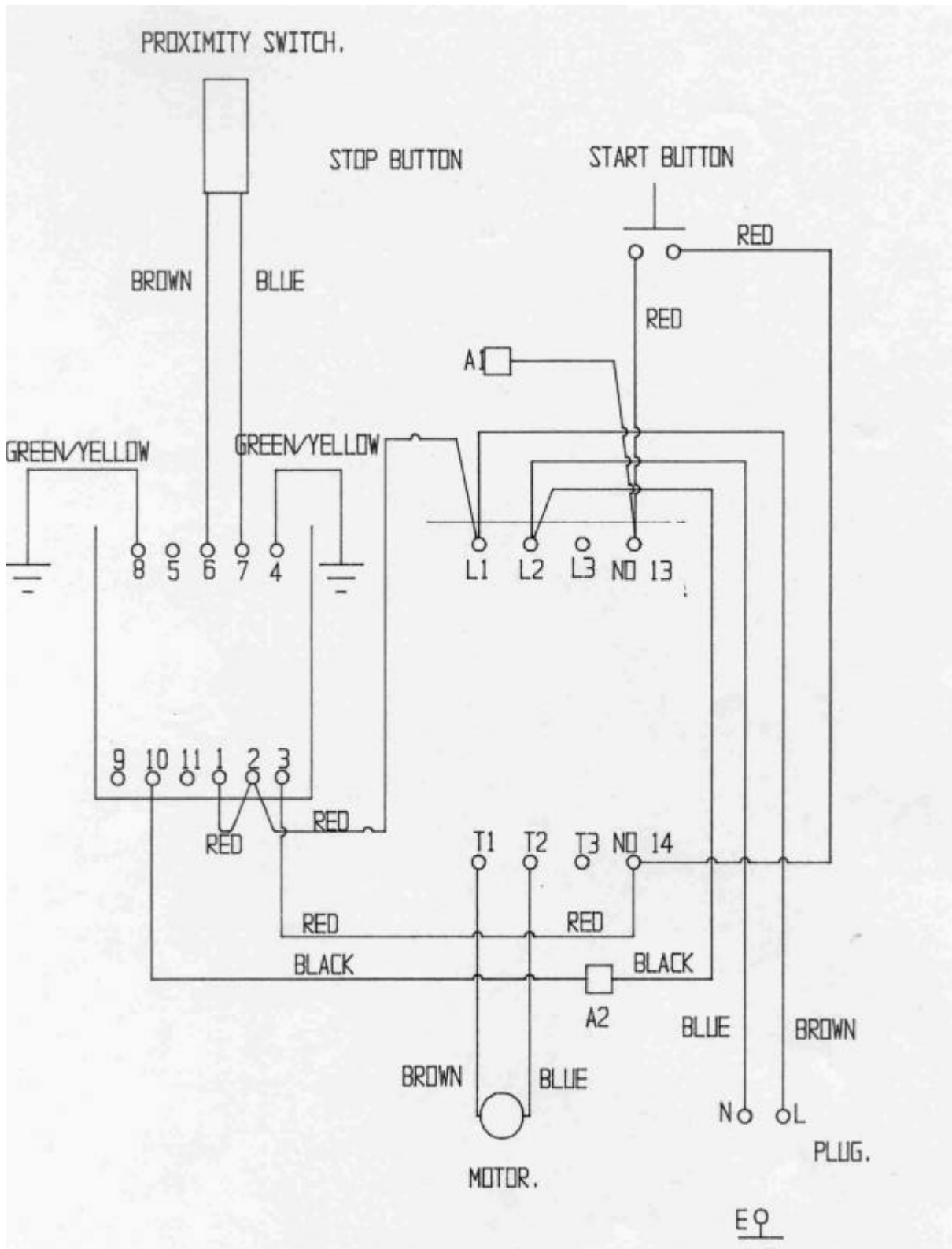
REVISIONS

NOTE: REMOVE ALL SHARP EDGES AND CHAMFER ALL ANGLES UNLESS OTHERWISE SPECIFIED.
UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS.
DIMENSIONS ARE TO BE TAKEN TO THE CENTER UNLESS OTHERWISE SPECIFIED.
DIMENSIONS ARE TO BE TAKEN TO THE CENTER UNLESS OTHERWISE SPECIFIED.
DIMENSIONS ARE TO BE TAKEN TO THE CENTER UNLESS OTHERWISE SPECIFIED.

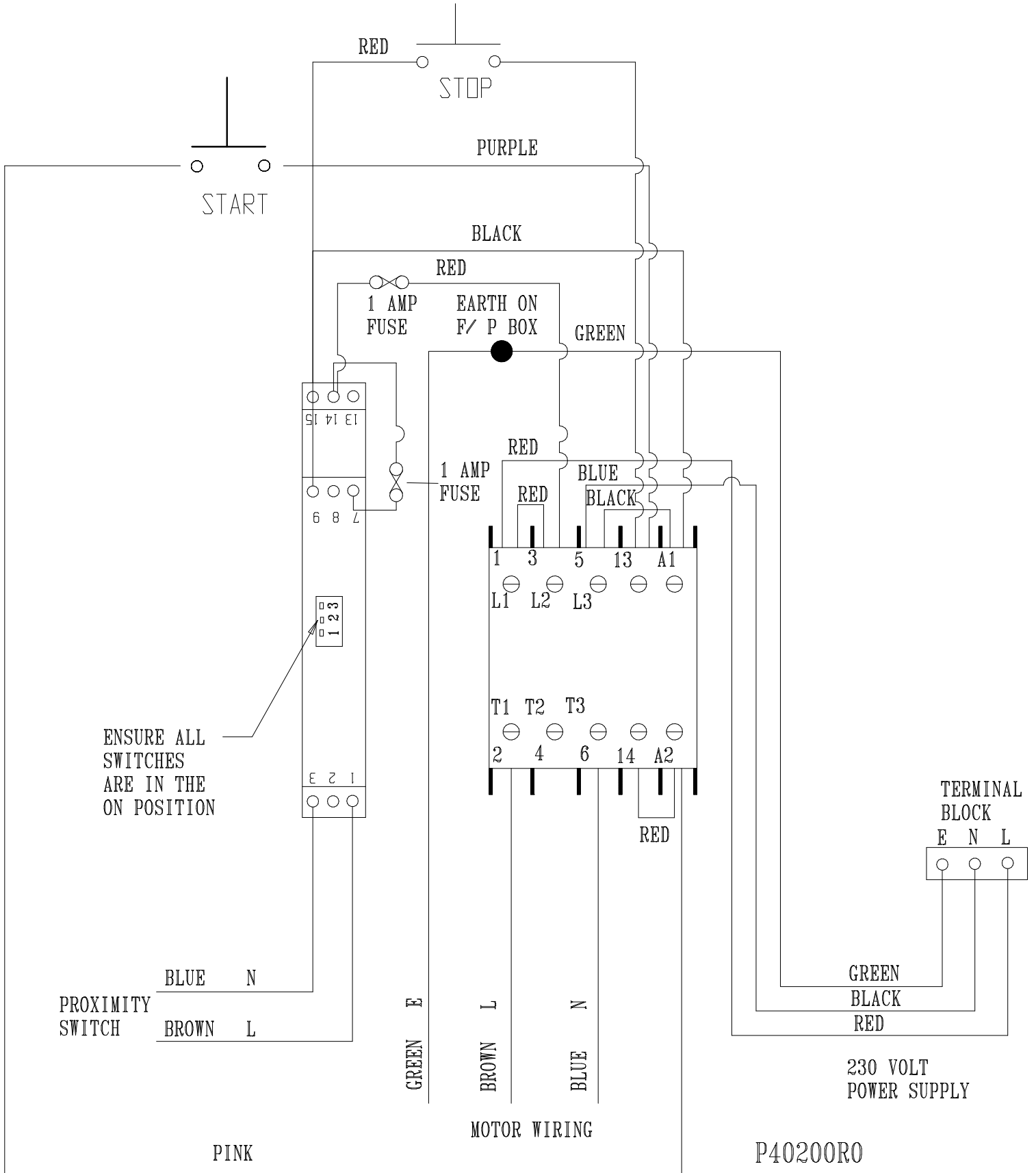
1:4 3:2 1:20
1:10 1:5 1:2

THIS DRAWING IS THE PROPERTY OF ADICENG GAS EQUIPMENT (PTY) LTD AND IS NOT TO BE COPIED OR REPRODUCED IN ANY MANNER WITHOUT THE WRITTEN CONSENT OF THE COMPANY.

ADICENG



WIRING FOR ALLAN BRADLY MODEL M09 CONTACTOR
 WITH PEPPERL+FUCHS CONTROL MODULE INSTALLED
 IN AN INVERTED POSITION FOR THE SMITH PUMP
 (TO ACCOMODATE EXISTING DIN RAIL POSITION)



PARTS LIST
(REFER TO DRAWING)

1. GCE 193 (GCE 193SS stainless steel) brass filling connector
2. Scale Beam
3. Scale Sliding weight
4. Adjusting screw
5. REGO 3165 ¼" Vent valve
6. Cylinder valve
7. Quick acting valve ½" x ¼" (GCE 667 TB)
8. Start button (Green)
9. Stop button (Red)
10. Proximity switch
11. ½" Outlet hose (Smith EGBI-1-outlet)
12. ½" Inlet hose (Smith EGBP-1-inlet)
13. Adceng Flameproof switch box
14. Smith EG-1 balance gear pump
15. Sight Glass
16. Scale