

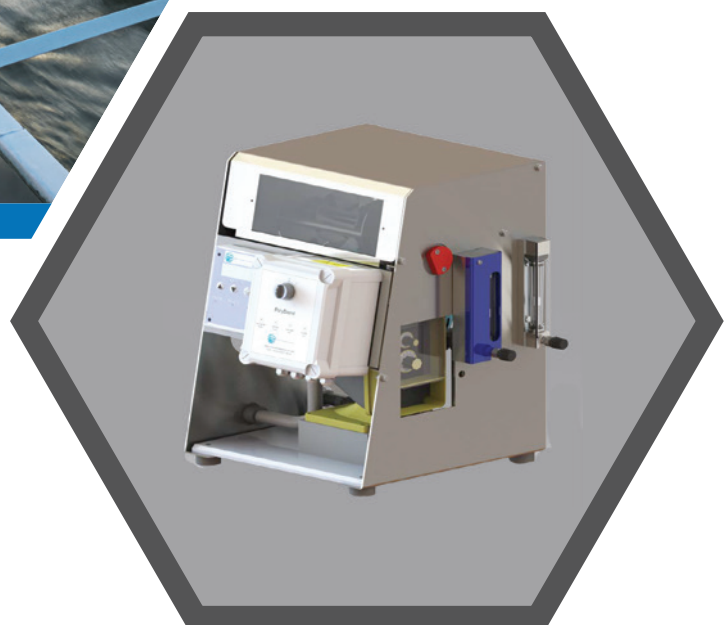
WATER PROCESS SOLUTIONS

Operation & Maintenance Manual

Polyblend® Series 600 / 1000

Polymer Mixing System

Manual No. 7001



Water Process Solutions
PolyBlend
Series: 600/1000
Operation & Maintenance Manual
7001-MANUAL

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DECLARATION OF CONFORMITY

Name of manufacturer: Water Process Solutions
Address of manufacturer: Unit 10 Mill Hall Business Estate
Aylesford
Kent
ME20 7JZ
England

I hereby declare that the following machinery complies with all the Essential Health and Safety Requirements of the Machinery Directive 89/392/EEC as amended and the Electromagnetic Compatibility Directive 89/336/EEC as amended.

Machinery Description: Liquid Polymer Dosing/Mixing Equipment
Type: PolyBlend Series "L0,100,200,600.1000, Including. PC Series
Transposed Harmonised European Standards used:
EN 292 parts 1 & 2 : 1991 Safety of Machinery – Basic concepts, general principles for design
EN 60204 part 1 : 1993 Safety of Machinery – Electrical equipment of machines
prEN 953 Safety of Machinery – General requirement for the design and construction of guards (fixed, movable)
EN 50081 part 1 : 1992 Generic Emissions – Residential, commercial and light industrial environment.
EN 50082 part 1 : 1992 Generic Immunity – Residential, commercial and light industrial environment.
Additional Standards used: Not applicable

Name of authorised responsible person: Clive Dean
Position of responsible person: General Manager

DECLARATION

I declare that as the authorised responsible person, the above information in relation to the supply/ manufacture of this product is in conformity with the stated standards and other related documents following the provision of EC Machinery Directive.

Signature of responsible person: 
Date :.....31/07/14.....

Section 1:

WARRANTY

1. WPS warrants equipment of its manufacture and bearing its identification to be free from defects in workmanship and material. WPS liability under this warranty extends for a period of one year from date of delivery from our factory or authorised distributor. It is limited to repairing or replacing any device or part which is returned, transportation prepaid, to the factory within one year of delivery to the original purchaser, and which is proven defective upon examination.

WPS disclaims all liability for damage during transportation, for consequential damage of whatever nature, for damage due to handling, installation or improper operation, and for determining suitability for the use intended by the purchaser. Replaceable elastomeric parts are expendable and are not covered by any warranty express or implied.

WPS make no warranties, either expressed or implied, other than those stated above. No representative has authority to change or modify this warranty in any respect. The warranty period will commence from the date of delivery of the goods to the purchaser.

Contact Details:

WPS
Unit 10
Mill Hall Business Estate
Aylesford
Kent,
ME20 7JZ

+44 (0) 1622719945

waterprocesssolutions.com

Section 1A:

WARNINGS

Hazardous Chemicals

When dealing with hazardous chemicals it is the responsibility of the equipment user to obtain, and follow, all safety precautions recommended by the material manufacturer or supplier. COSHH sheets should be available in the event of an accident.

It is good general practice to wear protective clothing, gloves and face/eye protection when working with the chemicals, operating the equipment, and carrying out maintenance work on the plant.

Electrical Safety

This equipment uses electrical power at a high enough voltage to endanger life. Before carrying out any plant maintenance or repair work, persons concerned must ensure that the equipment is isolated from the electrical supply and make tests to verify that isolation is complete.

When any of the supplies cannot be disconnected, functional testing, maintenance and repair of the electrical units is to be undertaken only by personnel who are fully aware of the danger and have taken adequate precautions.

Safety Precautions

To avoid possible severe personal injury or equipment damage, observe the following:

This equipment should be installed, operated, and serviced only by trained, qualified personnel who are thoroughly familiar with the plant and the contents of this manual. When dealing with hazardous materials it is the responsibility of the equipment user to obtain and follow all safety precautions recommended by the material manufacturer or supplier. Avoid contacting electrically hot motors, components, or heaters. Consult a WPS representative if the equipment is to be used under conditions other than originally specified, or before any modifications are made to the equipment. Failure to comply with the above will invalidate the warranty and could endanger personnel. Use extreme care to avoid contact with the chemicals. Contact the chemical supplier for instructions in the preparation and handling. Observe all recommended safety precautions.

General Note

Minor part number changes may be incorporated into WPS products that are not immediately reflected in the instruction manual. If such a change has apparently been made in our equipment and does not appear in your instruction book, contact WPS for information.

Section 2:

SERIES MODEL NUMBERS

Within the 600/1000 Series the model numbers are:

PB	600-1	HMZ
PB	600-2	HMZ
PB	600-4.5	HMZ
PB	1000-1	HMZ
PB	1000-2	HMZ
PB	1000-4.5	HMZ
PB	1000-8	HMZ

CAPACITIES:

Model	Dilution Water Litres/Hour		Metering Pump Litres/Hour
	Primary	Secondary	
PB 600-1 HMZ	240 – 2400	NIL	0.005 – 3.7
PB 600-2 HMZ	240 – 2400	NIL	0.005 – 7.6
PB 600-4.5 HMZ	240 – 2400	NIL	0.005 – 17.0
PB 1000-2 HMZ	240 – 2400	120 – 2400	0.005 – 7.6
PB 1000-2 HMZ	240 – 2400	120 – 2400	0.005 – 3.7
PB 1000-4.5 HMZ	240 – 2400	120 – 2400	0.005 – 17.0
PB 1000-8 HMZ	240 – 2400	120 – 2400	0.005 – 30.0

Section 3:

SYSTEM SCHEMATICS AND GENERAL ARRANGEMENT DRAWING

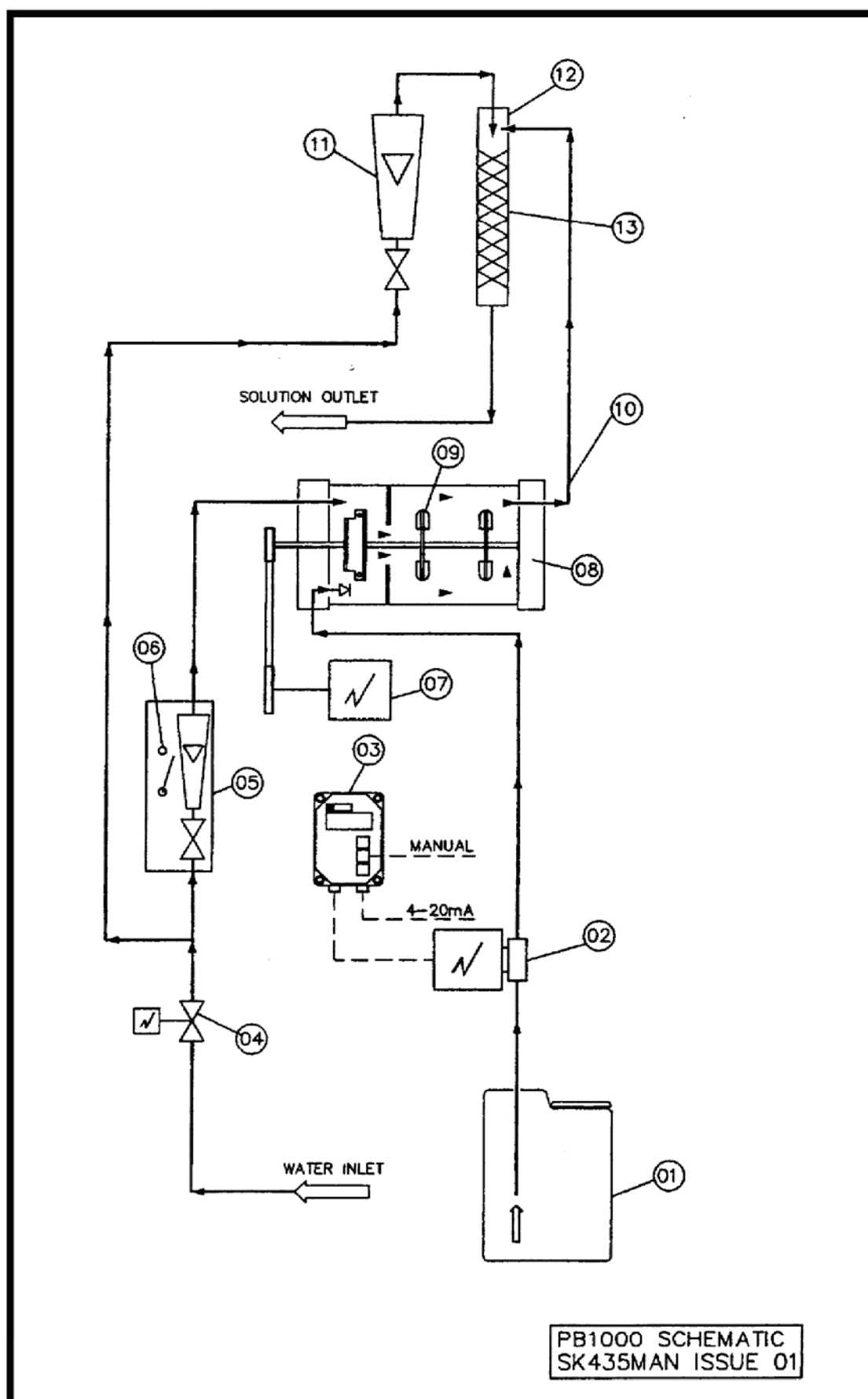
- 3.1 System Schematics**
 - Drawing: SK436
 - Drawing: SK435
 - Item Description Sheet
- 3.2 Functional Description**
- 3.3 General Arrangement Drawings**

Section 3.1:

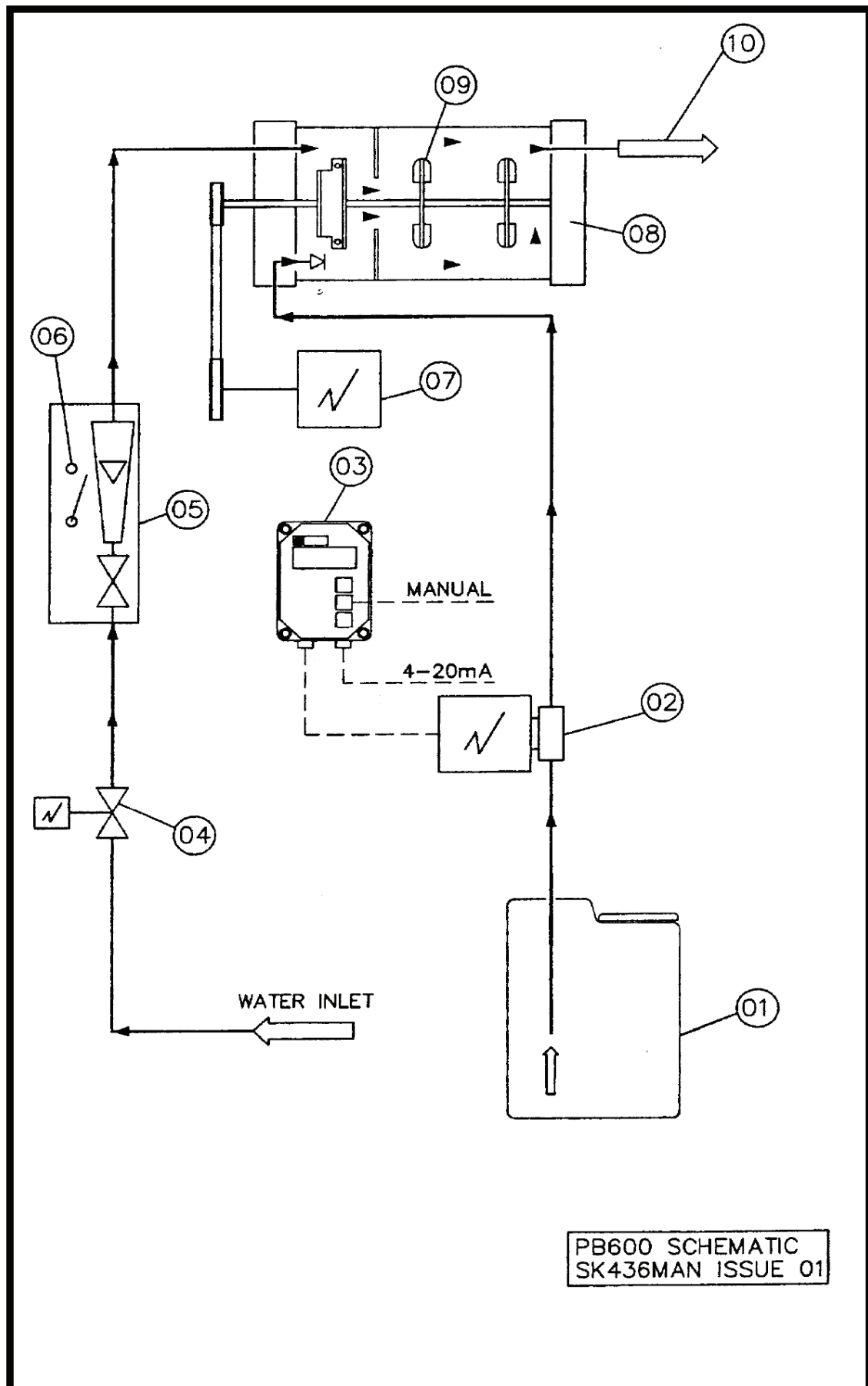
SYSTEM SCHEMATICS

The simplified process schematic for models PB 600-2 HMZ and PB 600-4.5 HMZ is as Drawing SK436.

The simplified process schematic for models PB 1000-2 HMZ, PB 1000-4.5 HMZ and PB 1000-8 HMZ is as Drawing SK 435.



PB1000 SCHEMATIC
SK435MAN ISSUE 01



PB600 SCHEMATIC
SK436MAN ISSUE 01

ITEM DESCRIPTION SHEET – REFER TO DRAWINGS SK436 and SK435

Item No:	Description
1.	Neat Polymer Storage (Cost Option)
2.	Metering Pump
3.	REM-1D Unit – Metering Pump Output Controller
4.	Water Supply on/off Solenoid Valve and Water Inlet
5.	Primary Dilution Water Flow Indicator and Control Valve
6.	Low Water Flow Switch
7.	Activation Chamber Drive Motor
8.	Activation Chamber
9.	Impeller
10.	Active Solution Outlet Port
11.	Secondary Dilution Water Indicator and Control Valve
12.	Secondary Dilution Water and Polymer Confluence
13.	Static Mixer
14.	Final Dilute, Active Solution to Point of Use

Section 3.2:

FUNCTIONAL DESCRIPTION

The compact, low power, highly efficient PolyBlend unit performs three basic functions. Metering of precise amounts of liquid polyelectrolyte as supplied by manufacturer together with flow regulated dilution water, correct energy profile for the blending of the two streams to uniform dilution and activation and feeding of the activated polymer to the point of use.

The motive force to feed the active solution to the point of use is the dilution water supply pressure itself.

As shown on drawings SK436 and SK435, emulsion or dispersion polyelectrolyte is drawn from a neat polymer storage tank (1) by an adjustable metering pump (2). The output of the pump is controlled by the REM-1 controller (3) either by manual control or 4-20 mA.

At the same time the inflow of dilution water from a supply source is regulated through solenoid valve (4) and the rate adjusting valve/flowmeter (5). The flowmeter (5) is equipped with a variable low flow magnetic switch (6) integral in the flowmeter (5).

The polymer and the water are injected separately at the right of the blending/activation chamber (8). The impeller (9) blends polymer and water in a high energy, low shear, completely back-mixed environment to ensure complete polymer activation. The blended and activated polymer then exits at the top of the activation chamber through the discharge port (10) and is piped to the point of use.

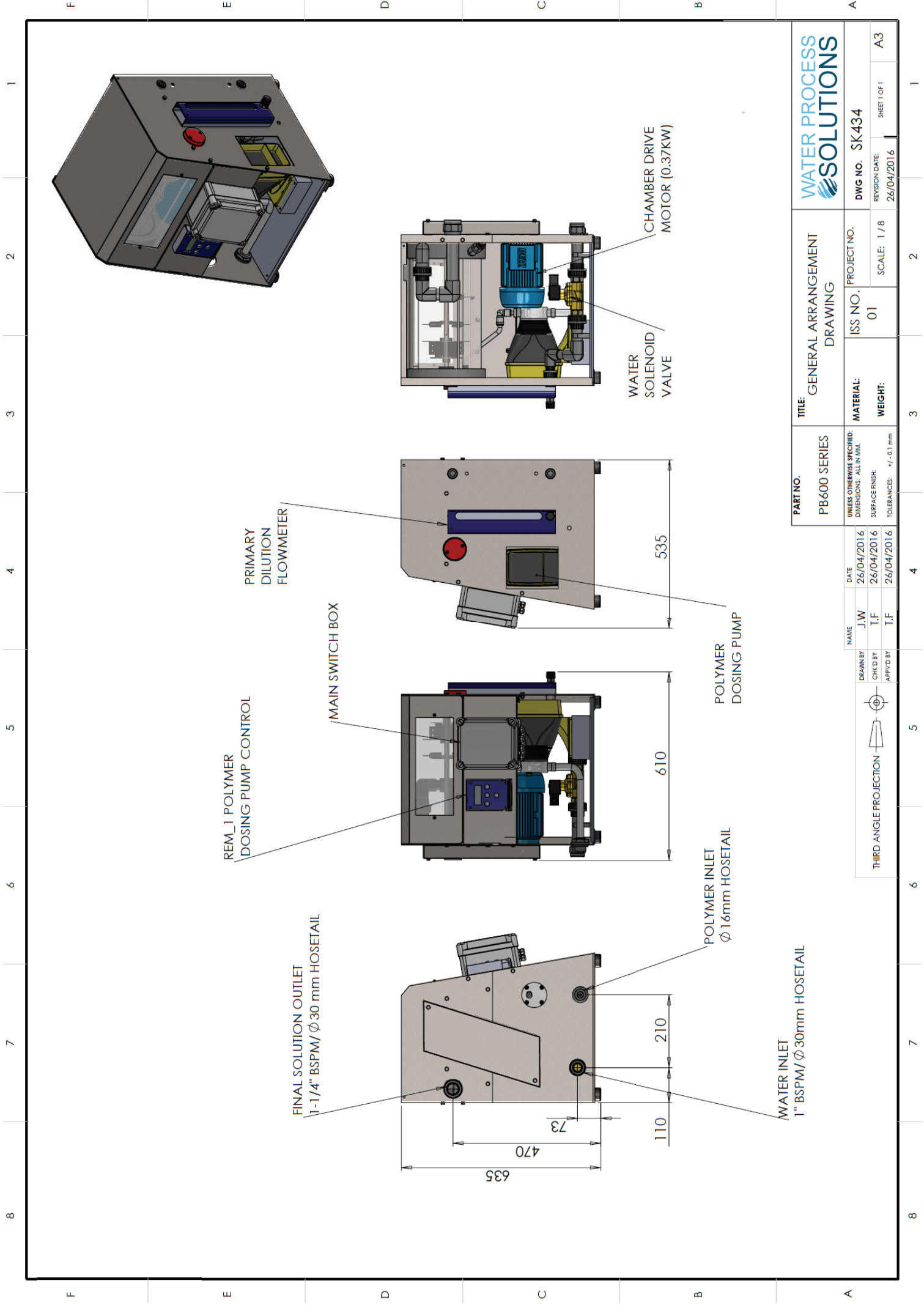
For models with post dilution (PB 1000-2 HMZ, PB 1000-4.5 HMZ, PB 1000-8 HMZ) the solution leaving the activation chamber (10) meets the secondary dilution water from regulator/flowmeter (11) at the confluence assembly (12) then through static mixer (13) then to the point of use.

Section 3.3:

GENERAL ARRANGEMENT DRAWING

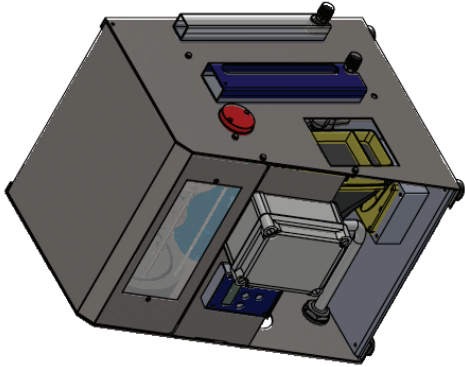
TITLE: GENERAL ARRANGEMENT OF POLYBLEND

DRAWING NO: SK343 (600 SERIES)
SK433 (1000 SERIES)



1 2 3 4 5 6 7 8

F E D C B A



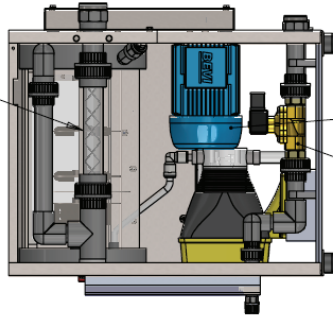
PRIMARY
DILUTION
FLOWMETER

SECONDARY
DILUTION
FLOWMETER

REM_1 POLYMER
DOSING PUMP CONTROL

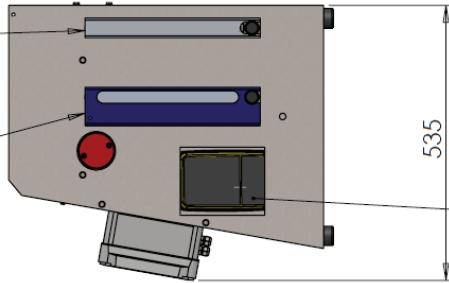
MAIN SWITCH BOX

STATIC MIXER ASSY.
(SECONDARY DILUTION)

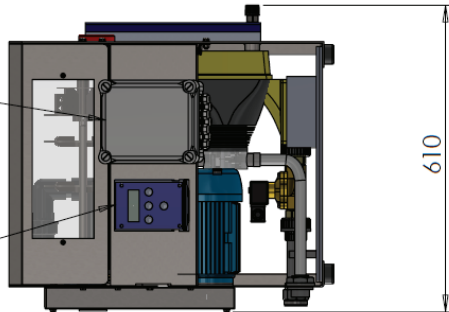


CHAMBER DRIVE
MOTOR (0.37KW)

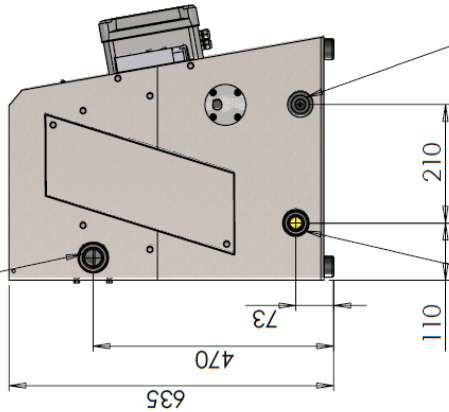
WATER
SOLENOID
VALVE



POLYMER
DOSING PUMP



FINAL SOLUTION OUTLET
1-1/4" BSPM/ Ø 30 mm HOSETAIL



POLYMER INLET
Ø 16mm HOSETAIL

WATER INLET
1" BSPM/ Ø 30mm HOSETAIL

WATER PROCESS
SOLUTIONS

TITLE: GENERAL ARRANGEMENT
DRAWING

PART NO.
PB1000 SERIES

DWG NO. SK433
REVISION DATE: 27/04/2016
SHEET 1 OF 1
A3

PROJECT NO.
ISS NO. 01
MATERIAL:
WEIGHT:

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS: ALL IN MM.
SURFACE FINISH:
TOLERANCES: +/- 0.1 mm

NAME	DATE
J.W	27/04/2016
T.F	27/04/2016
T.F	27/04/2016

THIRD ANGLE PROJECTION

1 2 3 4 5 6 7 8

Section 4:

INSTALLATION

- | | |
|-----|----------------------|
| 4.1 | Unpacking the System |
| 4.2 | Location |
| 4.3 | Terminal Points |
| 4.4 | Supply Water |
| 4.5 | Neat Polymer Supply |
| 4.6 | Electrical Supply |

Section 4.1:

UNPACKING THE SYSTEM

The PolyBlend unit is shipped intact and will have been tested at the WPS factory. In the shipment box you should have found:

- i) The PolyBlend unit with 3 metres of three core electrical fly-lead.
- ii) This manual.
- iii) Metering pump instruction booklet.
- iv) A plastic bag containing:
 - Priming syringe
 - Syringe tubing
 - Water inlet hose tail
 - Solution out hose tail
 - Polymer inlet hose tail
 - Pipe clips
 - Suction hose for neat polymer to polymer inlet

Note: Due to weight of PolyBlend unit, handling is a two person operation. Always lift PolyBlend from under main frame and not any ancillary switch boxes, connections, flow meters, etc.

Section 4.2:

LOCATION

When selecting the best location for the installation of the PolyBlend unit, consider the following requirements:

- availability of line voltage through a standard earth-grounded outlet.
- availability of fresh water supply.
- pipe or reinforced flexible hose route for the active solution to the point of use.
- suitability for easy handling and storage of the neat polymer supply.
- Dry weight of unit is 73Kg

Do not install the unit in unprotected outdoor locations. The unit should be protected from the elements and freezing.

Secure the PolyBlend on a bench, shelf or framework such that the suction tube can be run from the polymer inlet suction fitting to the bottom of the polymer drum. The location should provide easy access by operating personnel to all controls

Section 4.3:

TERMINAL POINTS

Water IN	-	1" BSPF or hose adapter diameter 30mm O.D.
Neat Polymer IN	-	Diameter 16mm hose tail fitting.
Active Solution OUT	-	1 3/4" BSPF or hose adapter diameter 30mm O.D.
Electricity	-	A 3 metre, 3-core fly-lead is provided for connection to isolator

Section 4.4:

SUPPLY WATER

If the water supply to the PolyBlend unit is potable water, a backflow preventer or break-tank must be provided according to local regulations.

When connecting or installing the pipe and fittings to the PolyBlend, always use Teflon tape and, to prevent damage, do not over-tighten.

The water supply pressure should be between 3 and 5 Bar g. and of sufficient size to meet the water flowrate capacity of the particular model. The pressure within the PolyBlend system should not exceed 5 Bar g.

An isolating valve should be fitted in the water supply line before the PolyBlend water inlet connection.

Section 4.5:

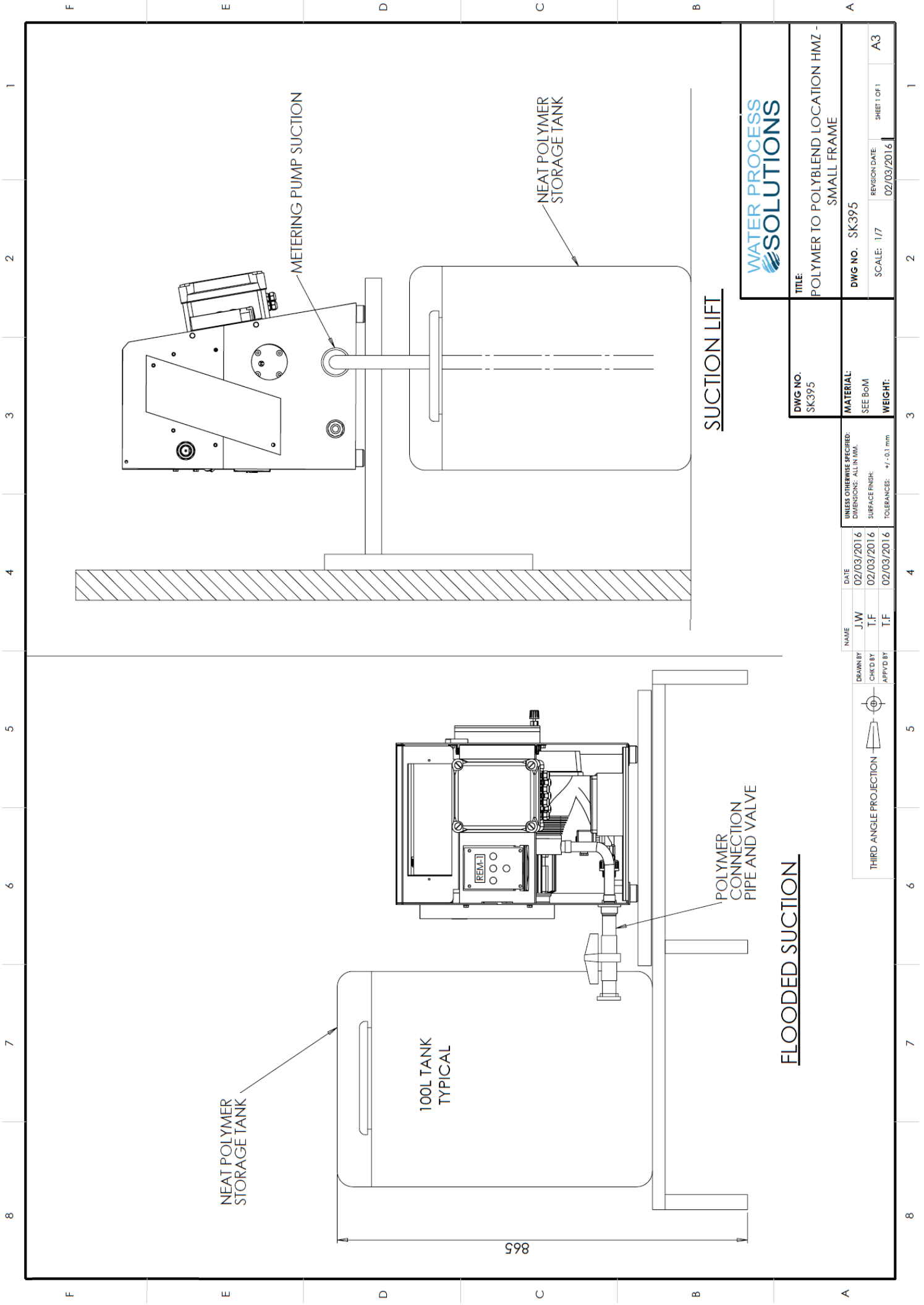
NEAT POLYMER SUPPLY

To obtain the best work value of the neat liquid polymer and PolyBlend combination, the chemical should always be kept dry and clean.

For aspects of chemical handling and safety, consult the polymer manufacturer's product data sheets.

The metering pump within the PolyBlend can operate with either a flooded suction or a suction lift from the polymer storage vessel. Flooded suction is the preferred setup.

See sketch SK395.



TITLE:		POLYMER TO POLYBLEND LOCATION HMZ - SMALL FRAME	
DWG NO.	SK395	DWG NO.	SK395
SCALE:	1/7	REVISION DATE:	02/03/2016
		SHEET 1 OF 1	A3

DWG NO.	SK395	MATERIAL:	SEE BOM
		WEIGHT:	

UNLESS OTHERWISE SPECIFIED:	
DIMENSIONS:	ALL IN MM.
SURFACE FINISH:	
TOLERANCES:	+/- 0.1 mm

NAME	DATE
J.W	02/03/2016
T.F	02/03/2016
T.F	02/03/2016

THIRD ANGLE PROJECTION	THIRD ANGLE PROJECTION
THIRD ANGLE PROJECTION	THIRD ANGLE PROJECTION

Section 4.6:

ELECTRICAL SUPPLY

The PolyBlend has a 3 metre, 3-core electrical fly-lead for connection to a mains supply via an isolator and requires 13 amp fused protection.

Your PolyBlend will be equipped for either 110v/1/50 Hz or 220/240v/1/50 Hz, depending upon the order specification.

After commissioning, stopping and starting of the PolyBlend should be done by switching the power off or on at the PolyBlend control box.

Refer to Section 7 for wiring diagram.

Section 5:

OPERATION

- | | |
|-----|------------------------------|
| 5.1 | Start-Up |
| 5.2 | Priming Metering Pump |
| 5.3 | Setting of Flows |
| 5.4 | Flowmeter Cleaning Procedure |
| 5.5 | Calibration of Pump |

Section 5.1:

START-UP

Ensure that:

- The water supply is connected and the line is free of debris, there is a maximum pressure of 5 Bar gauge and the isolation valve in the feed line to the PolyBlend is closed.
- Flowmeter valves are closed.
- The final solution outlet is connected to process or a suitable drain for commissioning. There are no closed valves or restrictions in the line.
- The electrical supply is connected to a suitable voltage, earth-grounded supply with an isolator and fused protection (13 amp).
- The PolyBlend metering pump suction is connected to a source of neat liquid polymer (see Section 4.5).
- The REM-1 control unit is in the “EXT or off” position.
- The speed control knob in the dosing pump is turned anti-clockwise and clicked to the “off” position.

Slowly open the water supply line isolating valve and check for leaks at the PolyBlend.

Switch on the electrical supply to the PolyBlend.

Switch on the PolyBlend switch box.

Open the primary dilution flow meter by turning the integral valve knob at the base of this flow meter so that the float is just below the low flow switch line.

Water will start to flow through the flow meter and into the activation chamber. Allow chamber to fill completely before increasing to flow past low-flow switch.

Note: Do not allow chamber drive motor to operate until chamber is flooded completely as this could damage the shaft seal.

When the activation chamber is full and the water is flowing to the point of use, check the whole unit for leaks.

Increase water flow until primary dilution flow meter float passes low-flow switch and drive motor starts. Check for smooth rotation of the activator impellers and OFF appears in the LCD window of the REM unit.

The PolyBlend is now ready to meter in the neat liquid polymer.

Section 5.2:

PRIMING METERING PUMP

Check that the polymer suction line is:

- securely pipe-clipped to the polymer inlet suction hose tail.
- clean and dry.
- located into the polymer storage in the correct manner (see Section 4.5).

Connect the priming tube (supplied) onto the priming valve outlet fitting on the pump head and the other end onto the syringe outlet with the syringe closed.

Open the priming valve.

Open the syringe slowly.

When syringe is full of air, close priming valve, disconnect from tube, expel air and reconnect to tube, open priming valve and repeat this syringe operation until the suction tube pump head contains neat liquid polymer. Close the priming valve. If polymer enters the syringe then wash clean and dry after priming.

The pump is now ready to meter into the PolyBlend activation chamber.

Section 5.3:

SETTING OF FLOWS

5.3.1 WATER

On Models PB 600-1, PB 600-2, PB 600-4.5

Adjust the flow control knob at the base of the flowmeter to a value about 200 times the anticipated flow of neat polymer.

e.g. Anticipated neat polymer use on say PB 600-2 HMZ of 2 litres per hour, set the flowmeter at 400 litres per hour (or 7 litres per minute).

On Models PB 1000-1, PB 1000-2, PB 1000-4.5, PB 1000-8

Adjust the flow control knob at the base of the flowmeter to a value of about 120 times the anticipated flow of neat polymer.

Then set the flow of the post-dilution flowmeter at say 100 times the anticipated flow of neat polymer.

During commissioning and optimisation, these flow values can be adjusted up or down to suit the polymer and the process conditions and results to achieve best performance

5.3.2 NEAT POLYMER FLOW

On the electronic control panel of the metering pump, check that the frequency control knob is clicked off in the anti-clockwise direction. Speed control of the pump will now be via the REM-1D unit.

Set the stroke control knob to say 50% of maximum.

Press the mode button on the REM-1D. The SPM and internal light will come on and the pump will start stroking. If you pass this setting, press the mode until it appears.

The pump will now begin to stroke and meter polymer into the chamber.

The arrow up and arrow down pads control the frequency at which the pump strokes. There will be a reading of 0 to 100 in the LCD display. Set this according to the output required.

e.g.

1.5 litre/hour required of neat polymer:

Stroke volume is set at 50%

Pump capacity on PB 600-2 HMZ, PB 1000-2 HMZ is 7.57 litres/hour.

Therefore, the speed needs to be at:

$$\text{Speed setting} = \frac{\text{Desired Pump Output} \times 100 \text{ spm}}{\text{Pump Capacity} \times \% \text{ volume setting}}$$

$$= \frac{1.5 \text{ L/Hr} \times 100 \text{ spm}}{7.57 \text{ L/Hr} \times 50/100}$$

Speed 40 spm (strokes per minute)

Section 5.4:

FLOWMETER CLEANING/DISMANTLING PROCEDURE

Use drawing SK744 in conjunction with this text.

The following procedure applies to all small frame PolyBlend flowmeters.

Note: **The PolyBlend flowmeter is a precision instrument; some of the components are small and delicate. The flowmeter tube is made from glass, so take safety precautions when handling.**

1. Switch off PolyBlend and isolate main power and water supply.
2. Remove cover retaining screw and slide cover upwards and then outwards at the top (Fig 1).
3. Pull black retaining clip forward to remove (Fig. 2).
4. Hold the glass tube gently and raise the top seal assembly clear of the tube end (Fig 3).
5. Carefully tip the tube top forward and ease off the bottom seals. Take care that the float and guide assembly do not fall out (Fig. 4).
6. Remove float and guide assembly by gently pulling top locator and band off, and sliding remaining assembly out of the bottom of tube.
7. The tube is now ready for cleaning or replacement.
8. Reassembly is the reverse of this procedure – ensure that white mark is at float top (Fig 5) on the switched flowmeter or the low flow switch will not operate correctly.

Lightly lubricate O-rings with silicon grease.

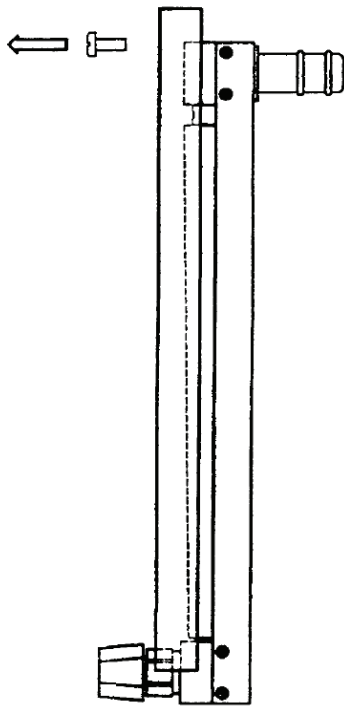


FIG. 1

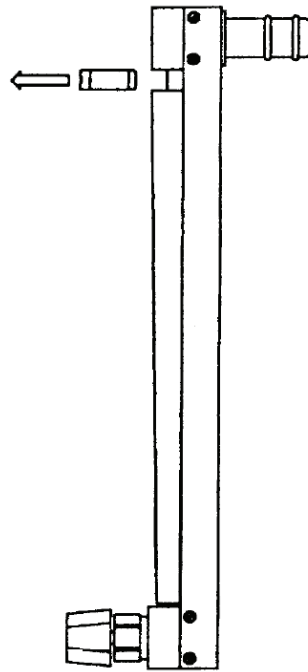


FIG. 2

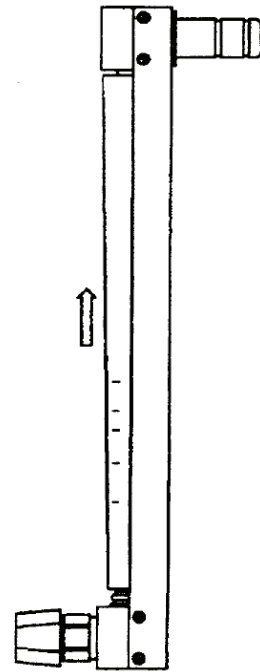


FIG. 3

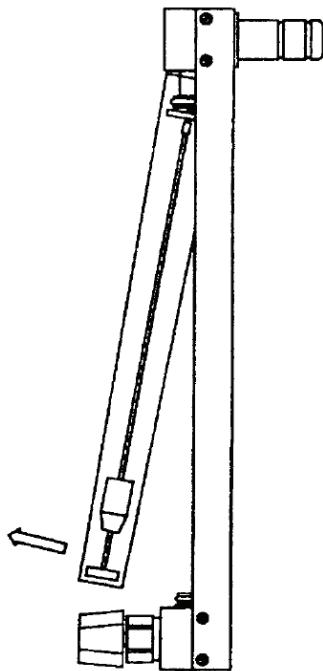


FIG. 4



FIG. 5

Section 5.5:

CALIBRATION OF PUMP

The REM-1e control unit will control the speed or frequency of the metering pump stroke precisely from 0 – 100 spm (strokes per minute) or 1 – 100 sph (strokes per hour).

The output curve may differ depending upon the characteristics of the neat polymer itself.

To check the pump curve, connect the pump suction tube to a calibrated cylinder into which liquid polymer is placed. Time the loss in volume of the neat polymer for different speed settings at 100% stroke volume, then construct a throughput curve for the pump with that particular polymer.

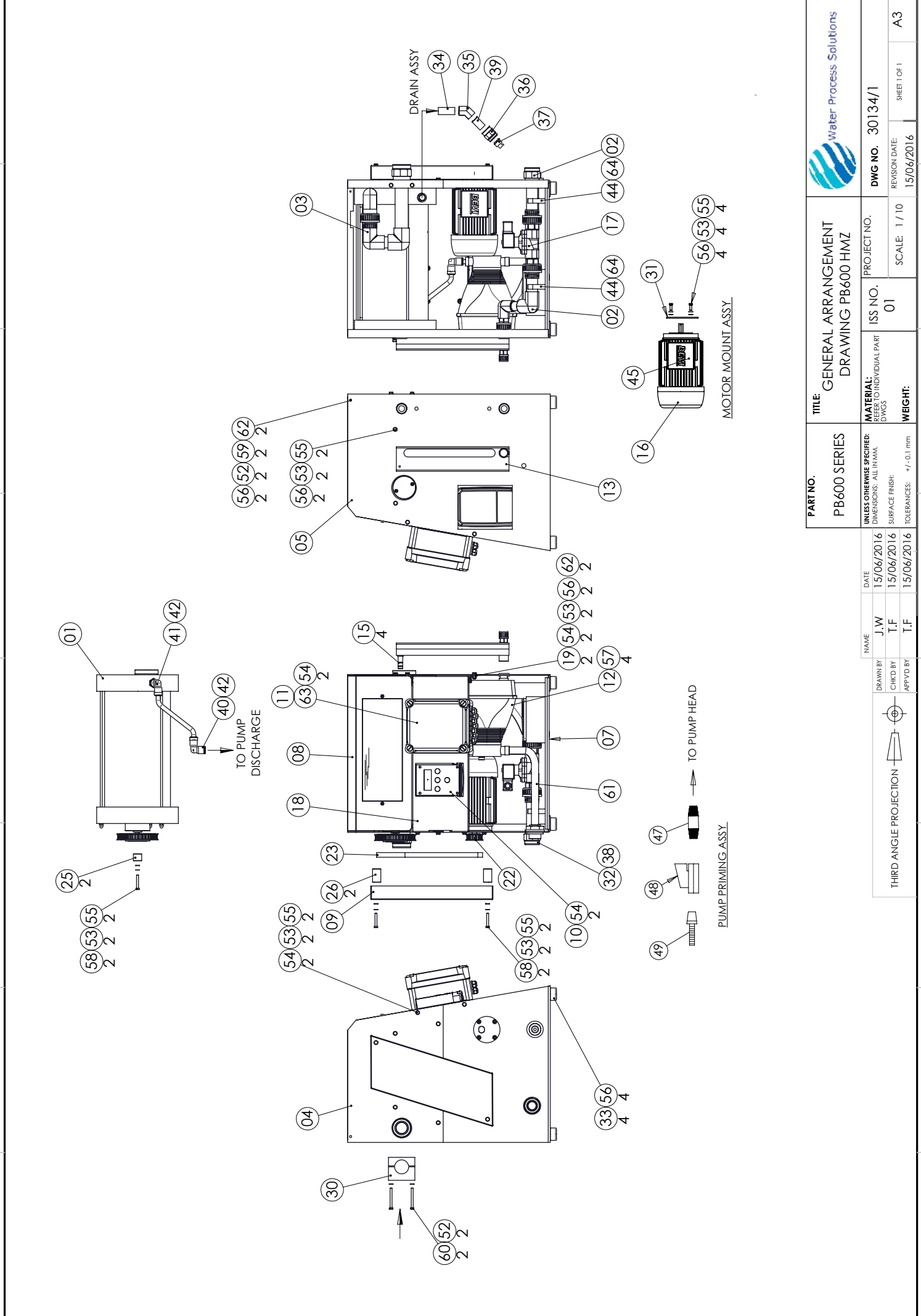
Section 6:

PARTS LIST AND EXPLODED DRAWINGS

- 6.1 This section includes all the general arrangement views of the PolyBlend Model Numbers:
 - PB 600-1 HMZ
 - PB 600-2 HMZ
 - PB 600-4.5 HMZ
 - PB 1000-2 HMZ
 - PB 1000-1 HMZ
 - PB 1000-4.5 HMZ
 - PB 1000-8 HMZ
 - 6.2 Flowmeter Assembly and Parts List
 - 6.3 Solenoid Valve Assembly Diagram (Exp. 504)
 - 6.4 Metering Pump Head Assembly (Exp. 1501)
 - 6.5 Recommended Spares List
 - 6.6 PolyBlend Tank and Stand Assemblies
- All parts are identified by number and described

Section 6.1:

POLYBLEND GENERAL ARRANGEMENT DRAWINGS AND PARTS LISTS



PART NO. PB600 SERIES		TITLE GENERAL ARRANGEMENT DRAWING PB600 HMZ		Water Process Solutions	
NAME J.W	DATE 15/06/2016	MATERIAL: REFER TO INDIVIDUAL PART DWGS	ISS NO. 01	PROJECT NO.	DWG NO. 30134/1
DRAWN BY T.F	15/06/2016	SURFACE FINISH: TOLERANCES: ± 0.1 mm	SCALE: 1 / 10	REVISION DATE: 15/06/2016	SHEET 1 OF 1
THIRD ANGLE PROJECTION					A3

PARTS LIST

GENERAL ARRANGEMENT OF POLYBLEND HMZ MODELS PB 600 HMZ

Dwg No: 30134/1

Pl. No: 00134

Item No.	Part No.	Description	Qty
1	-	Chamber Assembly – HMZ – large frame	1
2	9543-A	Inlet Pipe Assembly	1
3	9544-A	Outlet Pipe Assembly	1
4	8793	L/H End Frame Panel	1
5	8792	R/H End Frame Panel	1
7	8791	Base Plate	1
8	8799	Inspection Cover	1
8	8972	Inspection Cover Window	1
9	8794	Belt Guard	1
10	8054	REM-1 Controller	1
11	8749	Switch Box	1
12	8058	Polymer Pump AA768-66PB, 110v	1
12	8059	Polymer Pump AA765-66PB, 240v	1
12	8060	Polymer Pump BP35-76PB, 240v	1
12	8061	Polymer Pump BP31-76PB, 110v	1
12	8062	Polymer Pump DP35-20PB, 240v	1
12	8063	Polymer Pump DP31-20PB, 110v	1
13	8102-S	Flowmeter 0 – 40 lph, low-flow switch	1
15	8142	O-Ring – Flowmeter Outlet	4
16	8750	0.37 Kw Motor, 220/240V	1
16	8751	0.37 Kw Motor, 110v	1
17	8035	Solenoid Valve 1"	1
18	8795	Mount Plate – Switch Box	1
19	8747	Hinge Swivel	2
22	8802	Drive Pulley (15LO50)	1
23	8119	Drive Belt (300LO50)	1
25	8798	Spacer – Chamber End	2
26	8797	Spacer – Belt Guard	2
28	8055	REM-1 Connect Cable	1
30	8796	Clamp Set – Outlet	1
31	8739	Motor Spacer Ring	1
32	8743	Bulkhead Connector	1
33	8073	Rubber Foot	4

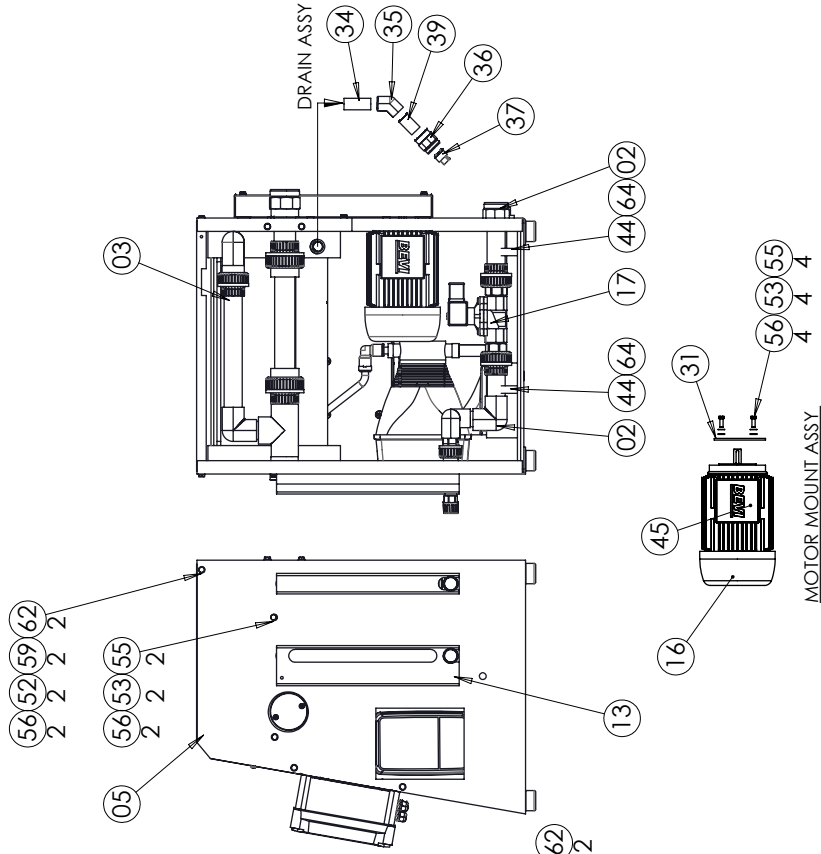
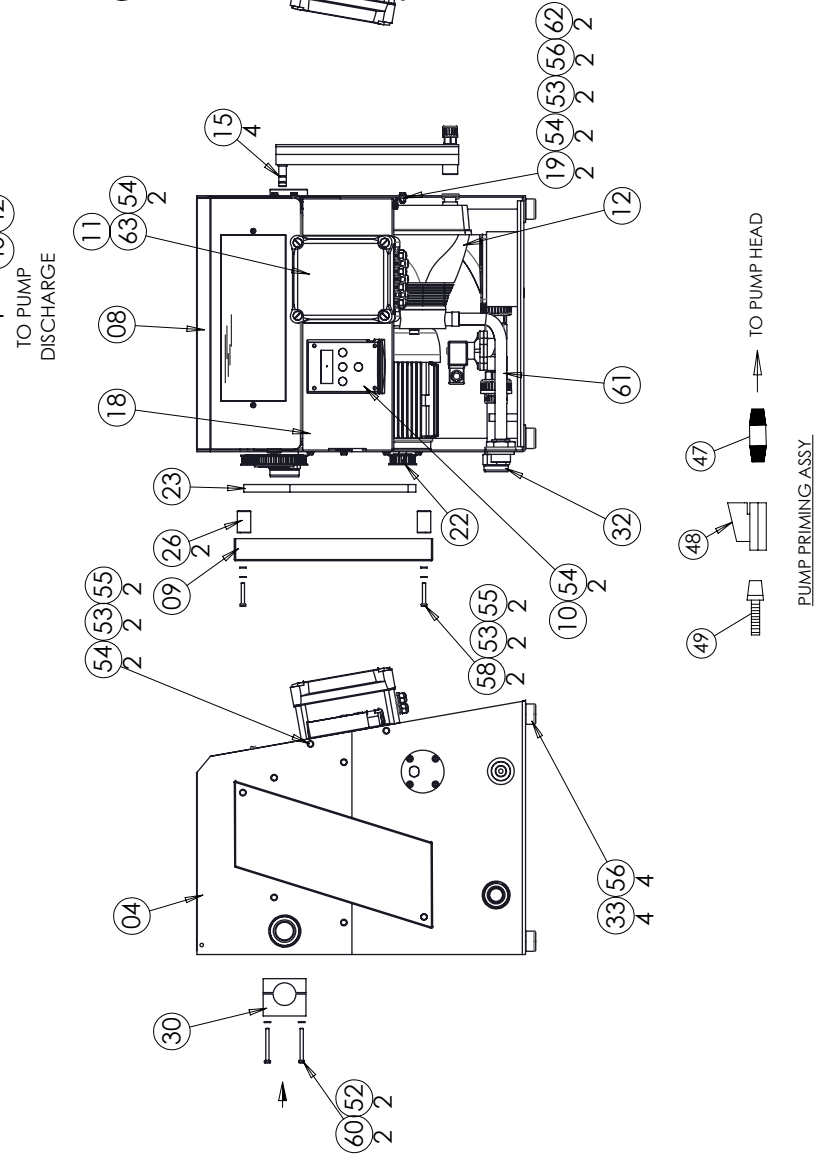
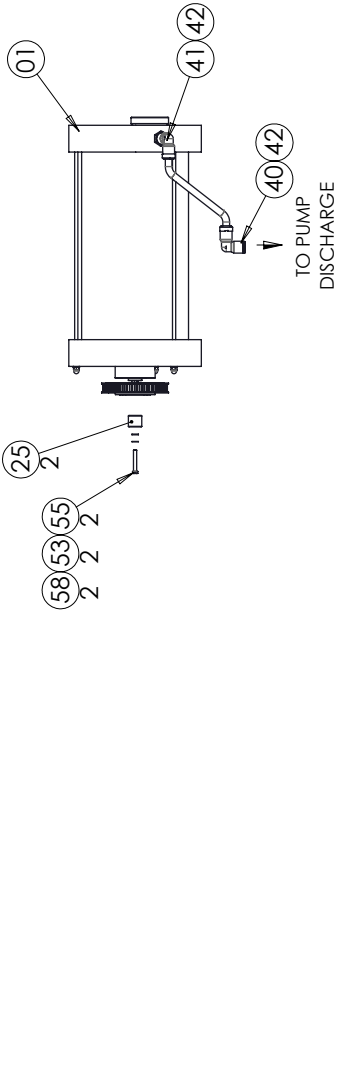
PARTS LIST

GENERAL ARRANGEMENT OF POLYBLEND HMZ (cont'd) MODELS PB 600 HMZ

Dwg No: 30134/1

Pl. No: 00134

Item No.	Part No.	Description	Qty
34	9503	½" Plain/Threaded Nipple ABS	1
35	9502	½" x 45o Plain Elbow ABS	1
36	9504	½" Plain/Threaded Socket ABS	1
37	9514	½" BSP Plug	1
38	9518	1" BSP Backnut – ABS	1
40	8689	½" 90o Elbow	1
41	8688	½" Swivel Elbow	1
42	8690	½" Collet Cover	2
44	8320	1" Maclow Clip	2
45	8664	Cable Gland	1
47	8001	¼" Nipple	1
48	8145	¼" BSP F/F Ball Valve	1
49	8034	¼" x 7 Hose Tail	1
50	-	M6 x 16 Pan Head Screw stainless steel	4
51	-	M6 Hex. Nut	4
52	-	M6 C Washer stainless steel	4
53	-	M6 Shakeproof Washer stainless steel	21
54	-	M6 x 12 Hex. Head Screw stainless steel	11
55	-	OBA Washer stainless steel	18
56	-	M6 x 20 Hex. Head Screw stainless steel	8
57	-	M5 x 16 Pan Head Screw stainless steel	4
58	-	M6 x 40 Hex. Head Screw stainless steel	4
59	-	M6 Nyloc Nut stainless steel	2
60	-	M6 x 75 Hex. Head Screw stainless steel	2
61	-	Dia. 16 I.D. Reinforced PVC Tube	1
62	-	Grommet - Sleeved	4
63	-	M6 x 25 Pan Head Screw	1
64	-	M5 x 35 C/Sunk Screw	2



PART NO. PB1000 SERIES		TITLE GENERAL ARRANGEMENT DRAWING PB1000 HMZ		Water Process Solutions	
NAME J.W	DATE 15/06/2016	MATERIAL: REFER TO INDIVIDUAL PART DWGS	ISS NO. 01	PROJECT NO.	DWG NO. 30162/1
DRAWN BY T.F	15/06/2016	SURFACE FINISH: TOLERANCES: ± 0.1 mm	SCALE: 1 / 10	REVISION DATE: 15/06/2016	SHEET 1 OF 1
THIRD ANGLE PROJECTION					A3

PARTS LIST

GENERAL ARRANGEMENT OF POLYBLEND HMZ MODELS PB 1000 HMZ

Dwg. No. 30162/1

Pl. No. 00162

Item No.	Part No.	Description	Qty
1	-	Chamber Assembly - HMZ - large frame	1
2	9541-A	Inlet Pipe Assembly	1
3	9542-A	Outlet Pipe Assembly	1
4	8793	L/H End Frame Panel	1
5	8792	R/H End Frame Panel	1
7	8791	Base Plate	1
8	8799	Inspection Cover	1
8	8972	Inspection Cover Window	1
9	8794	Belt Guard	1
10	8054	REM-1 Controller	1
11	8749	Switch Box	1
12	8058	Polymer Pump AA768-66PB, 110v	1
12	8059	Polymer Pump AA765-66PB, 240v	1
12	8060	Polymer Pump BP35-76PB, 240v	1
12	8061	Polymer Pump BP31-76PB, 110v	1
12	8062	Polymer Pump DP35-20PB, 110v	1
12	8063	Polymer Pump DP31-20PB, 110v	1
13	8102-S	Flowmeter 0 - 40 lpm, low-flow switch	1
14	8102	Flowmeter 0 - 40 lpm	1
15	8142	O-Ring - flowmeter outlet	4
16	8750	0.37 Kw Motor, 220/240v	1
16	8751	0.37 Kw Motor, 110v	1
17	8035	Solenoid Valve 1"	1
18	8795	Mount Plate - Switch Box	1
19	8747	Hinge Swivel	2
22	8802	Drive Pulley (15L050)	1
23	8118	Drive Belt (300L050)	1
25	8798	Spacer - Chamber End	2
26	8797	Spacer - Belt Guard	2
28	8055	REM-1 Connection Cable	1
30	8796	Clamp Set - Outlet	1
31	8739	Motor Spacer Ring	1
32	8743	Bulkhead Connector	1

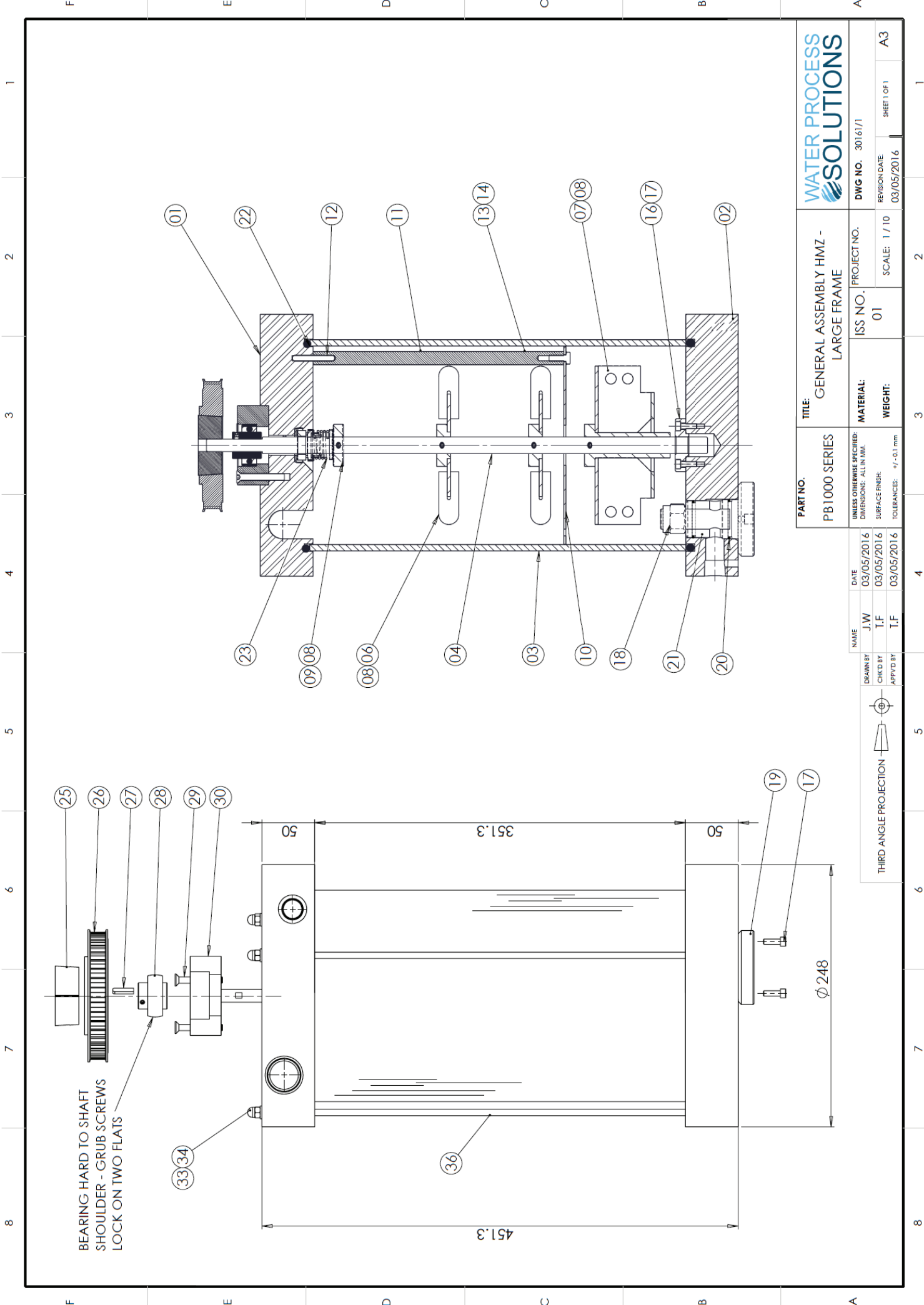
PARTS LIST

GENERAL ARRANGEMENT OF POLYBLEND HMZ (cont'd) MODELS PB 1000 HMZ

Dwg. No. 30162/1

Pl. No. 00162

Item No.	Part No.	Description	Qty
33	8073	Rubber Foot	4
34	9503	½" Plain/Threaded Nipple	1
35	9502	½" x 45o Plain Elbow	1
36	9504	½" Plain/Threaded Socket	1
37	9514	½" BSP Plug	1
38	9518	1" BSP Backnut – ABS	1
40	8689	½" 90o Elbow	1
41	8688	½" Swivel Elbow	1
42	8690	½" Collet Cover	2
44	8320	1" Maclow Clip	2
45	8664	Cable Gland	1
47	8001	¼" Nipple	1
48	8145	¼" BSP F/F Ball Valve	1
49	8034	¼" x 7 Hose Tail	1
50	-	M6 x 16 Pan Head Screw stainless steel	4
51	-	M6 Hex. Nut	4
52	-	M6 C Washer stainless steel	4
53	-	M6 Shakeproof Washer stainless steel	21
54	-	M6 x 12 Hex. Head Screw stainless steel	11
55	-	OBA Washer stainless steel	18
56	-	M6 x 20 Hex. Head Screw stainless steel	8
57	-	M5 x 16 Pan Head Screw stainless steel	4
58	-	M6 x 40 Hex. Head Screw stainless steel	4
59	-	M6 Nyloc Nut stainless steel	2
60	-	M6 x 75 Hex. Head Screw stainless steel	2
61	-	Dia. 16 I.D. Reinforced PVC Tube	1
62	-	Grommet - sleeved	4
63	-	M6 x 25 Pan Head Screw	1
64	-	M5 x 35 C/sunk Screw	2



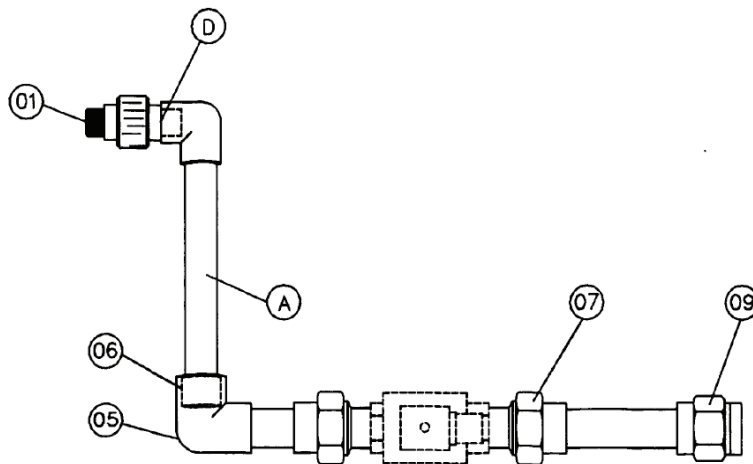
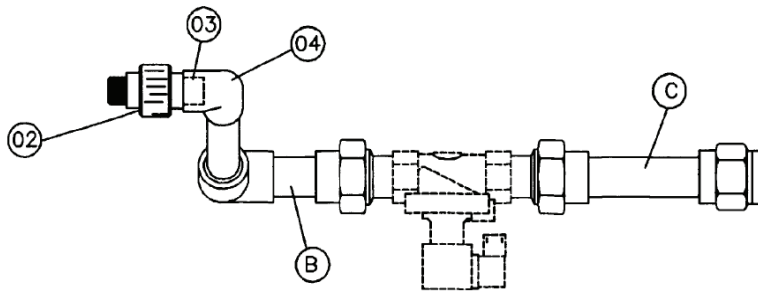
PARTS LIST

CHAMBER ASSEMBLY HMZ – LARGE FRAME

Dwg. No. 30161/1

Pl. No. 00161

Item No.	Part No.	Description	Qty
1	8788	Chamber Cap – Drive End	1
2	8789	Chamber Cap – Inlet End	1
3	8021	Acrylic Barrel L/F	1
4	8790	Impeller Shaft	1
6	8770	Impeller Assembly – 2nd Zone	2
7	8771	Impeller Assembly – 1st Zone	1
8	3016-SP40	Spring Pin – stainless steel	4
9	8801	Load Ring	1
10	8767	Baffle Plate – stainless steel	1
11	8803	Spacer Rod – stainless steel	2
12	8194	M6 x 40 stainless steel Stud	2
13	-	M6 x 16 Hex. Head Screw stainless steel	2
14	-	M6 Shakeproof Washer stainless steel	2
16	8728	Shaft End Bearing	1
17	-	M5 x 16 socket Cap Screw stainless steel	4
18	8024	Injector Nozzle	1
19	8782	Injector Plug	1
20	8786	O-Ring - Injector Plug	1
21	8787	O-Ring - Injector Plug	1
22	8144	O-Ring – Chamber	2
23	8255	Mechanical Seal	1
25	8785	Taper-lock Bush	1
26	8784	Driven Pulley	1
27	-	4mm x 20 Key	1
28	8731	Bearing	1
29	-	M6 x 45 Socket Head C/Sunk	3
30	8727	Bearing Carrier	1
33	-	M6 Dome Nut stainless steel	3
34	-	M6 Plain 'C' Washer stainless steel	3
36	8019	Securing Rod L/F	3



PIPE CUT LIST
(CLASS E -ABS)

- A: 3/4" X 67mm
- B: 1" X 75mm
- C: 1" X 120mm
- D: 1/2" X 34mm

PARTS LIST

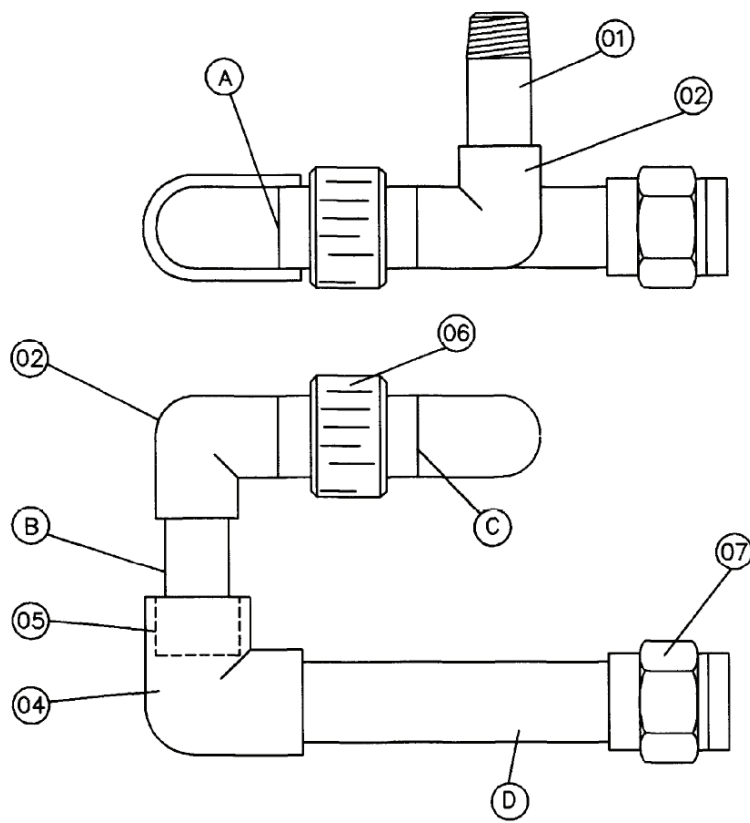
INLET ASSEMBLY PB 600 HMZ

Dwg. No. 30167/1

Part No: 9543-A

Pl. No. 00167

Item No.	Part No.	Description	Qty
1	9503	½" P/T Nipple	1
2	9500	½" Plain Socket Union	1
3	9516	¾" – ½" Plain Reducing Bush	1
4	9517	¾" x 90o Plain Elbow	1
5	9534	1" Plain 90o Elbow	1
6	9527	1" – ¾" Plain Reducing Bush	1
7	9540	1" ABS/Brass Composite Union	2
9	9533	1" Plain/Threaded Socket	1



PIPE CUT LIST
(CLASS E ABS)

- A: 1" X 46mm
- B: 1" x 50mm
- C: 1" X 46mm
- D: 1-1/4" X 195mm

PARTS LIST

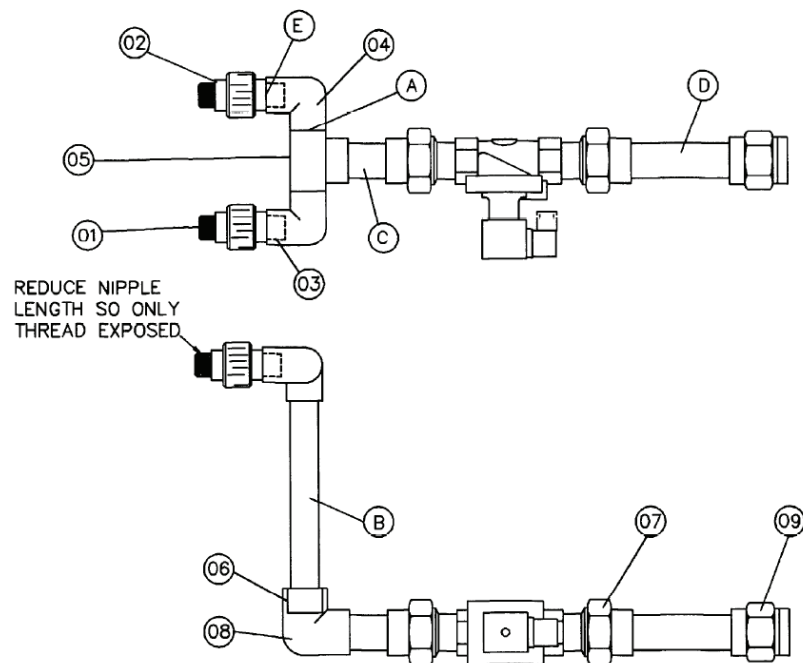
OUTLET PIPE ASSEMBLY ABS PB 600 HMZ

Dwg. No. 30168/1

Part No: 9544-A

Pl. No. 00168

Item No.	Part No.	Description	Qty
1	8804	1" P/T Nipple	1
2	9534	1" x 90o Plain Elbow	2
4	9537	1¼" x 90o Plain Elbow	1
5	9526	1¼" – 1" Plain Reducing Bush	1
6	9531	1" Plain Socket Union	1
7	9535	1¼" Plain/Threaded Banded Socket	1



PIPE CUT LIST
(CLASS E -ABS)

- A: 3/4" X 35mm -2off
- B: 3/4" X 46mm
- C: 1" X 75mm
- D: 1" X 120mm
- E: 1/2" X 34mm -2off

PARTS LIST

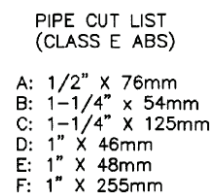
IINLET ASSEMBLY ABS PB 1000 HMZ

Dwg. No. 30165

Part No: 9541-A

Pl. No. 00165

Item No.	Part No.	Description	Qty
1	9503	½" Plain/Threaded Nipple	2
2	9500	½" Plain socket Union	2
3	9516	¾" x ½" Plain Reducing Bush	2
4	9517	¾" x 90o Plain Elbow	2
5	9512-M	¾" Plain Tee	1
6	9527 1" – ¾"	Plain Reducing Bush	1
7	9540 1"	ABS/Brass Composite Union	2
8	9534 1"	Plain 90o Elbow	1
9	9533 1"	Plain/Threaded Socket - Banded	1



PARTS LIST

OUTLET ASSEMBLY ABS PB 1000 HMZ

Dwg. No. 30166/1

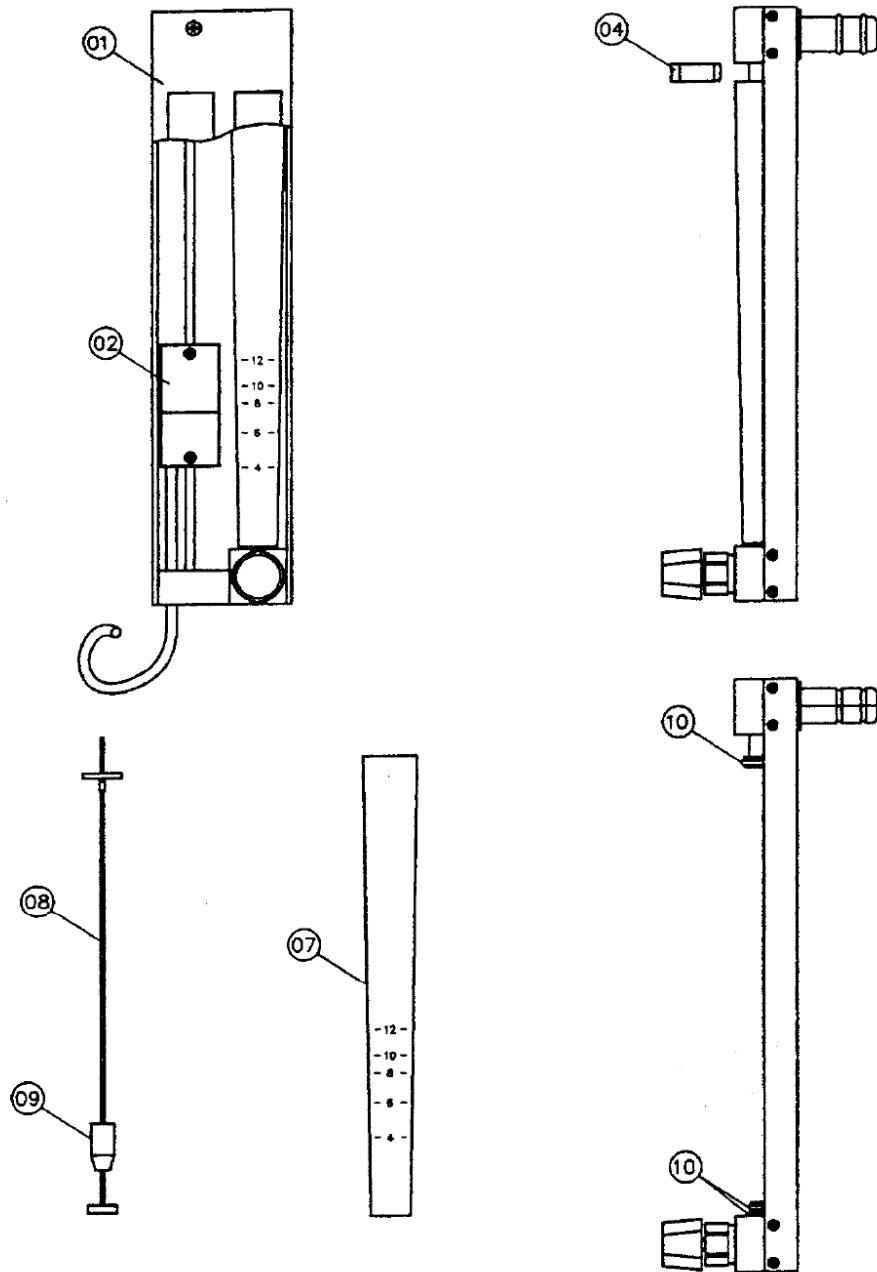
Part No: 9542-A

Pl. No. 00166

Item No.	Part No.	Description	Qty
1	8800	Confluence Bush	1
2	9536	1¼" Plain Tee	1
4	9526	1¼" – 1" Plain Reducing Bush	1
6	9538	1¼" PVC/ABS Composite Union	2
7	8647	1¼" Static Mixer	1
8	9535	1¼" Banded Socket	1
10	9534	1" 90o Elbow	2
11	8804	1" Extended Nipple	1

SECTION 6.2

FLOWMETER ASSEMBLY & PARTS LIST

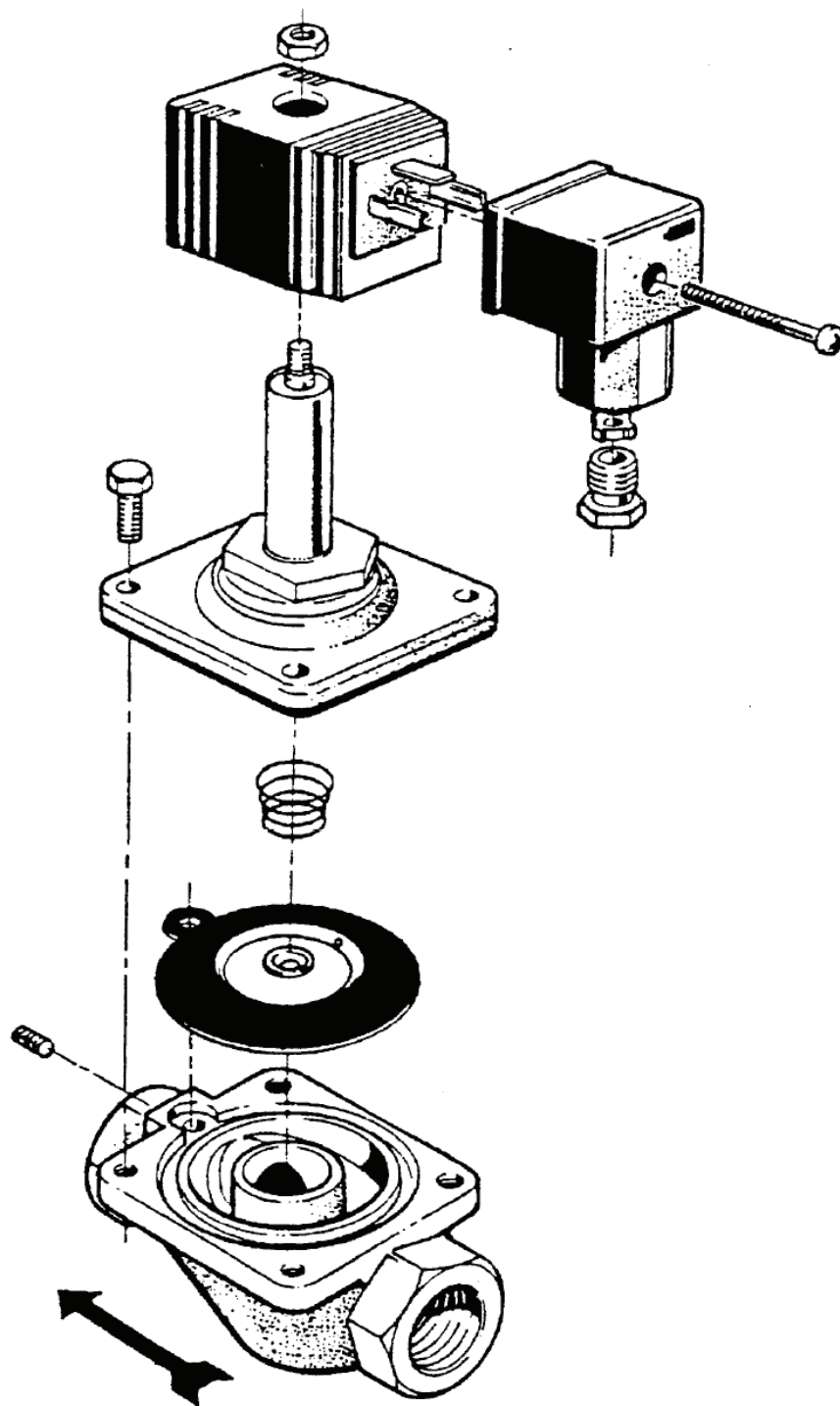


Item No.	Part No.	Description	Qty
1	8102-SC	Cover (switched)	1
2	8088	Low Flow Switch	1
4	8102-C	Tube Retaining Clip	1
7	8102-T	O-40LPM Tube	1
8	8102-G	Guide & Stops	1
9	8102-F	Magnetic Float	1
10	8102-ORS	O-Ring Set (all L/F F/Meters)	1

SECTION 6.3

SOLENOID VALVE ASSEMBLY DIAPHRAGM (EXP 504)

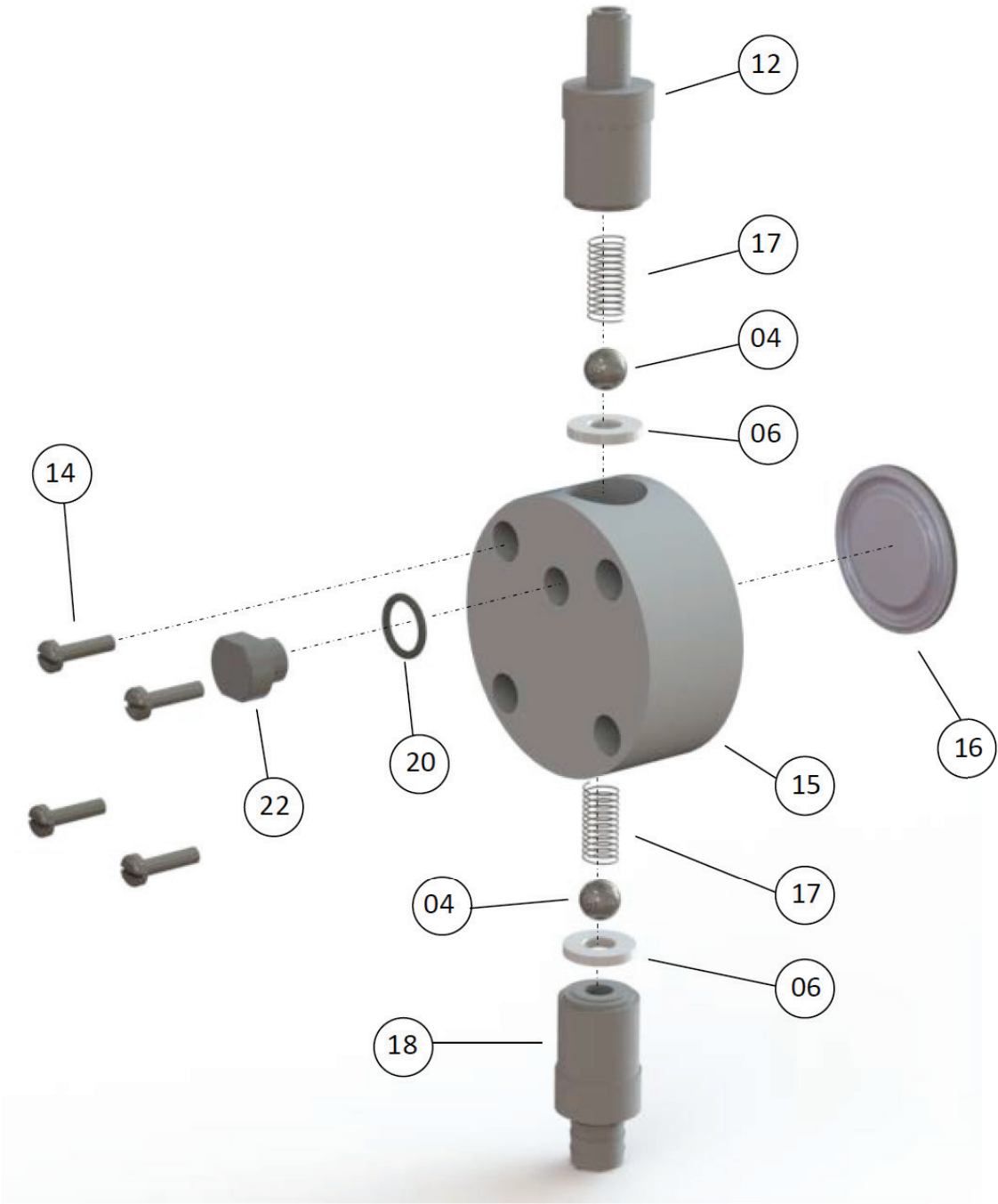
Drawing No: EXP504



SECTION 6.4

METERING PUMP HEAD ASSEMBLY (EXP 1501)

METERING PUMP HEAD ASSEMBLY EXP1501



PARTS LIST

EMULSION POLYMER PUMP

Dwg. No. EXP1501

Pl. No. 1501

MODEL LE 86 PB (3.78 Litres/Hour)

Item No.	Part No.	Description	Qty
4	ABE5824	Ball, stainless steel	2
6	25128	Seal, Teflon	2
10	27962	Head Assembly	1
12	25554-M	Valve Housing	1
14	10340	Screw 10-24 x 3/4", stainless steel	4
15	25550-1	High Viscosity Head, 0.9, acrylic	1
16	30917	Liquifram 0.9, teflon	1
17	25558	Spring, stainless steel	2
18	25649	Valve Seat, Barbed, polypropylene	1
19	25651-035	Tubing, 0.938", vinyl	1
22	26558	Plug, PVC	1

MODEL LE 76 PB (7.57 Litres/Hour)

4	ABE5824	Ball, stainless steel	2
6	25128	Seal, teflon	2
10	27943	Head Assembly	
112	25554-M	Valve Housing	1
14	10340	Screw 10-24 x 3/4", stainless steel	4
15	25540-1	High Viscosity Head, 1.8, acrylic	1
16	31420	Liquifram, 1.8, teflon	1
17	25558	Spring, stainless steel	2
18	25649	Valve Seat, Barbed, polypropylene	1
19	25651-035	Tubing, 0.938", vinyl	1
22	26558	Plug, PVC	1

MODEL LE 20 PB (30 Litres/Hour)

4	ABE5824	Ball, stainless steel	2
6	25128	Seal, teflon	2
10	26763	Head Assembly	1
12	25554-M	Valve Housing	1
14	10340	Screw 10-24 x 3/4", stainless steel	4
15	10524-4	High Viscosity Head, 3.0, acrylic	1
16	31419	Liquifram, 3.0, teflon	1
17	25558	Spring, stainless steel	2
18	25649	Valve Seat, Barbed, polypropylene	1
19	25651-035	Tubing, 0.938", vinyl	1
22	26558	Plug, PVC	1

SECTION 6.5

POLYBLEND RECOMMENDED SPARES (600/1000 HMZ SERIES)

Dwg. No. 30303

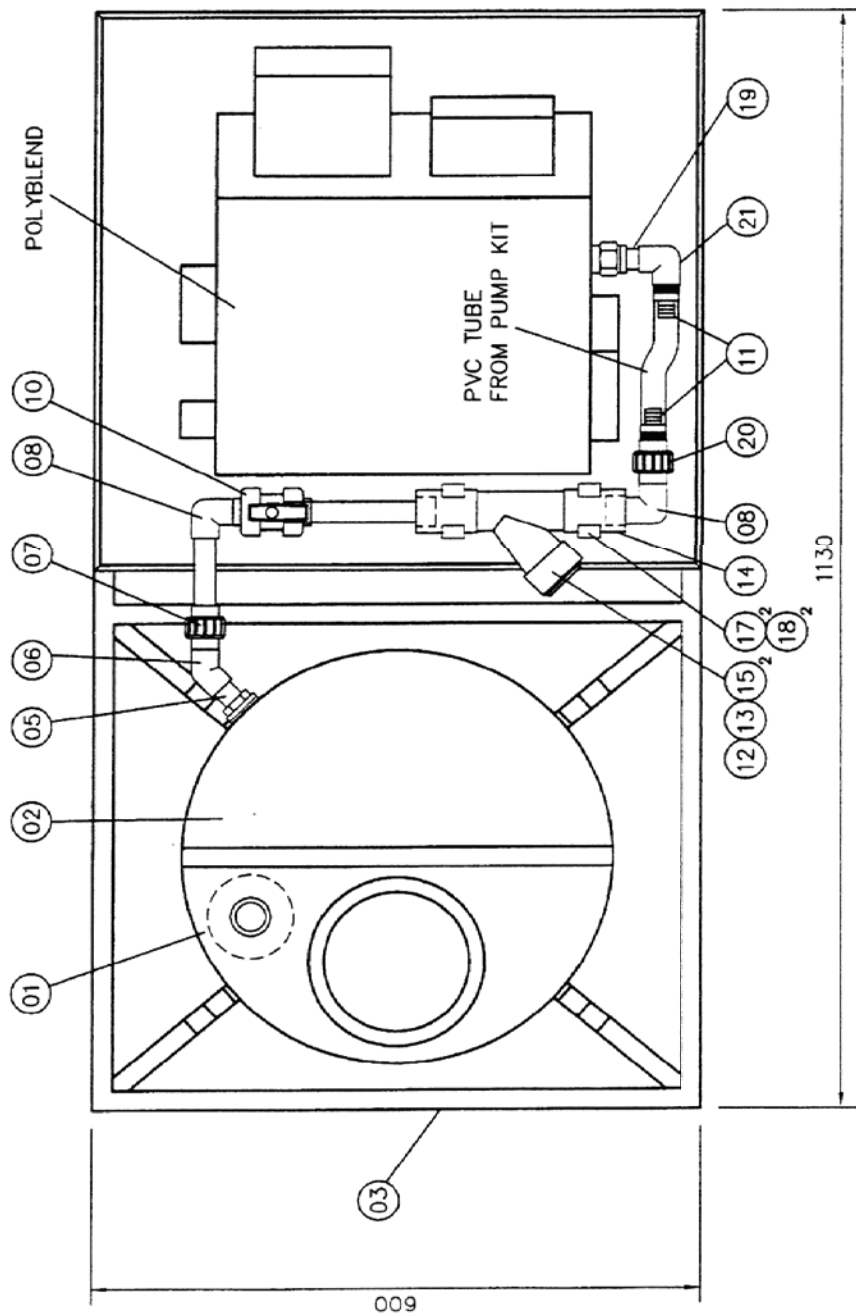
PART NO: 8212-AS

Item No.	Dwg. No.	Part No.	Description	Qty
23	30162/70	8118	Drive Belt	1
23	30161	8255	Mechanical Seal	1
18	30161	8024	Injector	1
28	30161	8731	Race Bearing	1
16	30161	8728	Shaft End Bearing	1
20	30161	8786	O-Ring	1
21	30161	8787	O-Ring	1
10	EXP.1501	27962	Head Assembly (LE 86 PB)	1
10	EXP.1501	27943	Head Assembly (LE 79 PB)	1
10	EXP.1501	26763	Head Assembly (LE 20 PB)	1
16	EXP.1501	30917	Liquifram (0.9)	1
16	EXP.1501	31420	Liquifram (1.8)	1
16	EXP.1501	31419	Liquifram (3.0)	1
07	SK741	8102-T	Flow Meter Tube	1

SECTION 6.6

POLYBLEND TANK AND STAND ASSEMBLIES (Cost Options)

50L POLYMER TANK



PARTS LIST

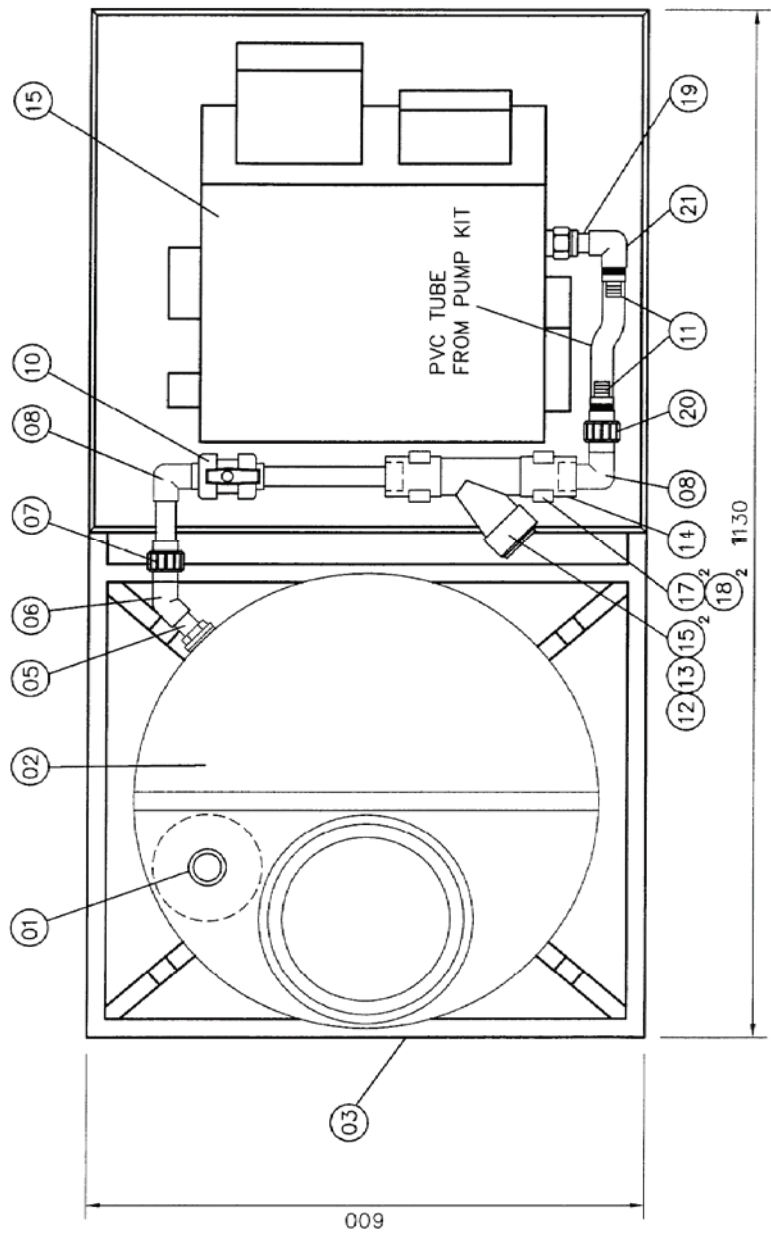
POLYBLEND TANK, STAND ASSEMBLY
50L TANK AND STRAINER
PART NO: 8212-CS

Dwg. No. 30303

PART NO: 8212-AS

Item No.	Part No.	Description	Qty
1	8501	50L Agitator	1
2	8498	50L Day Tank	1
3	8212	Stand – PolyBlend and Tank	1
5	8309	½” Tank Connector	1
6	8166	½ “ Plain 45o Elbow	1
7	8168	½ “ Plain Union	1
8	8167	½” Plain 90o Elbow	2
10	8310	½ “ Ball Valve	1
11	25650	½” Connector	2
12	9125	1” Strainer	1
13	9126	Filter Mesh 1.6	1
14	8577	1” X 32mm Adaptor Socket	2
15	8299	1” – ½” Plain Reducing Bush	2
17	8324	1.25” Maclow Clip	2
18	8678	Maclow Spacer	2
19	8293	½” Thr/Threaded Nipple	1
20	8177	½” Plain/Threaded Union	1
21	8294	½” Thr/Threaded Elbow	1

100L POLYMER TANK



PARTS LIST

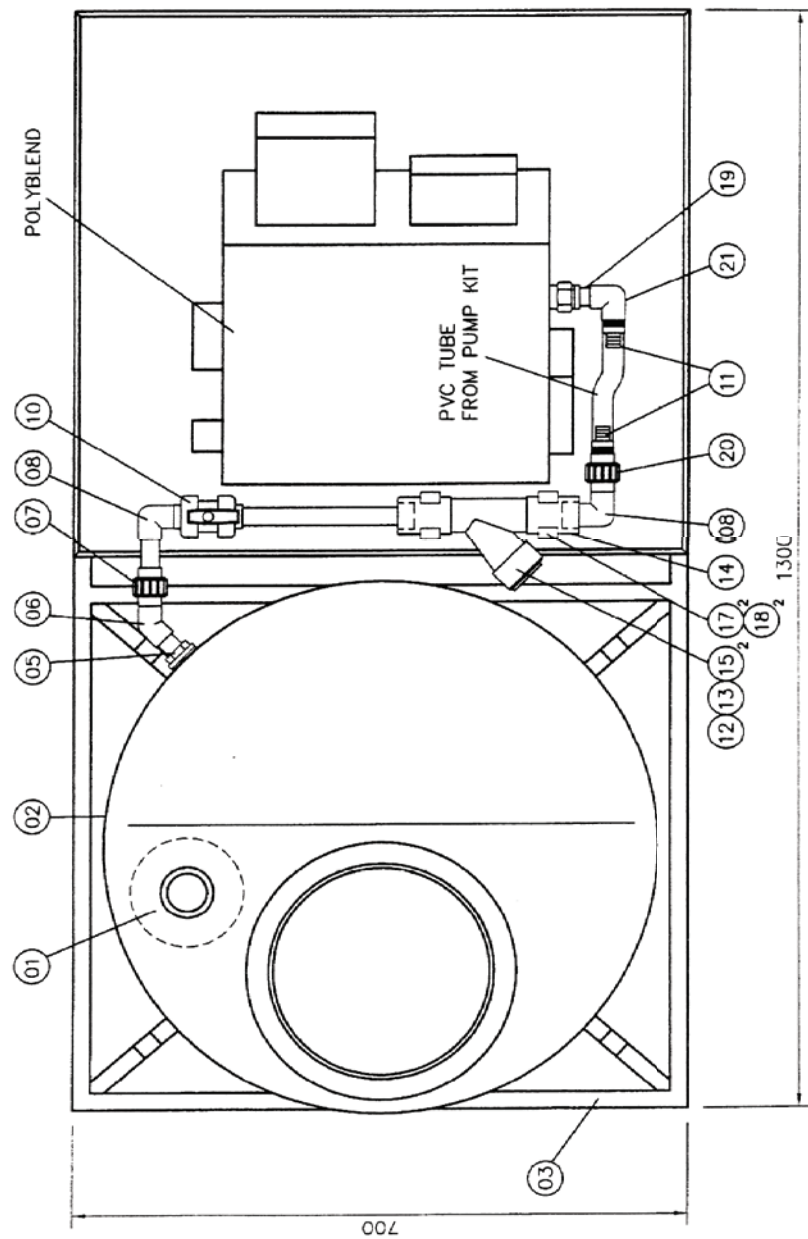
POLYBLEND TANK, STAND ASSEMBLY 100L TANK AND STRAINER

Dwg. No. 30303

PART NO: 8212-AS

Item No.	Part No.	Description	Qty
1	8502	100L Agitator	1
2	8499	100L Day Tank	1
3	8212	Stand – PolyBlend and Tank	1
5	8309	½” Tank Connector	1
6	8166	½” Plain 45o Elbow	1
7	8168	½” Plain Union	1
8	8167	½” Plain 90o Elbow	2
10	8310	½” Ball Valve	1
11	25650	½” Connector	2
12	9125	1” Strainer	1
13	9126	Filter Mesh 1.6	1
14	8577	1” x 32mm Adaptor Socket	2
15	8299	1” – ½” Plain Reducing Bush	2
17	8324	1.25” Maclow Clip	2
18	8678	Maclow Spacer	2
19	8293	½” Thr/Threaded Nipple	1
20	8177	½” Plain/Threaded Union	1
21	8294	½” Thr/Threaded Elbow	1

Drawing No: 30305 Iss: 04
200L POLYMER TANK



PARTS LIST

POLYBLEND, TANK, STAND ASSEMBLY PARTS LIST 200L TANK AND STRAINER

PART NO: 8212-BS

Item No.	Part No.	Description	Qty
1	8503	200L Agitator	1
2	8500	200L Day Tank	1
3	8212-200	Stand – PolyBlend and Tank	1
5	8309	½" Tank Connector	1
6	8166	½" Plain 45o Elbow	1
7	8168	½" Plain Union	1
8	8167	½" Plain 90o Elbow	2
10	8310	½" Ball Valve	1
11	25650	½" Connector	2
12	9125	1" Strainer	1
13	9126	Filter Mesh 1.6	1
14	8577	1" x 32mm Adaptor Socket	2
15	8299	1" – ½" Plain Reducing Bush	2
17	8324	1.25" Maclow Clip	2
18	8678	Maclow Spacer	2
19	8293	½" Thr/Threaded Nipple	1
20	8177	½" Plain/Threaded Union	1
21	8294	½" Thr/Threaded Elbow	1

SECTION 7

ELECTRICAL

- 7.1 Supply Voltage
- 7.2 Wiring Diagrams
- 7.3 Motor Power Figures and Full Load Currents
- 7.4 Power Factors
- 7.5 REM-1D Control Unit

SECTION 7.1

SUPPLY VOLTAGE

When your PolyBlend was manufactured it would have been for a supply voltage of either:

110v/1 phase/50 Hz

or

220/240v/1 phase/50 Hz

Check the label on the electrical switch box to verify supply voltage.

SECTION 7.2

WIRING DIAGRAMS

Refer to attached Drawing No. SK515A

entitled: 'HMZ Switch Box' (pictorial)

and

Drawing No. 30215

entitled: 'Switch Box – PolyBlend HMZ'

and

Drawing No. SK396

entitled: 'Switch Box Connection Diagram HMZ'

and

Drawing No. STR007.002

entitled: 'PolyBlend Switch Box'

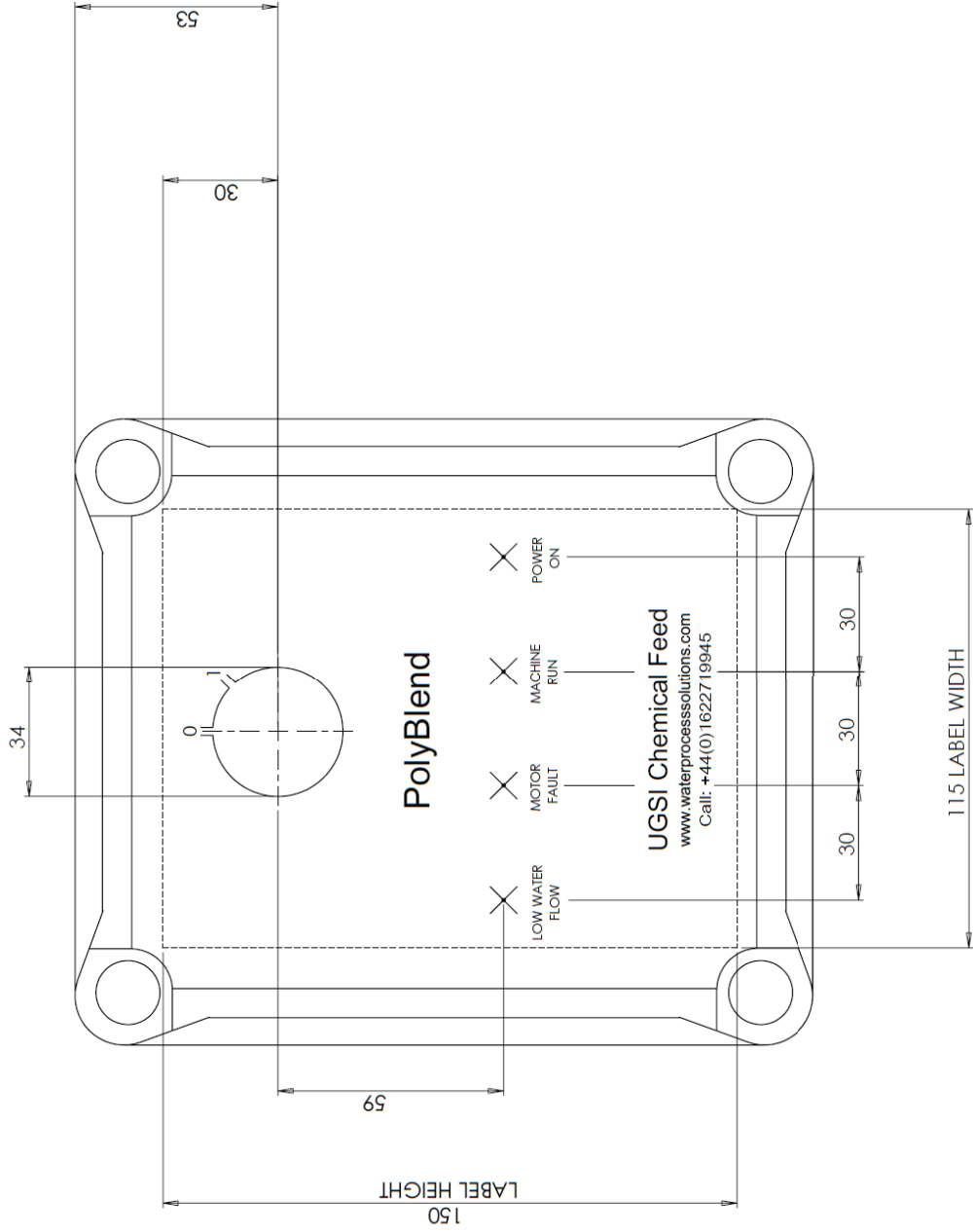
and

Drawing No. SK538

entitled: 'Connection to Optional Volt-Free Contact Box'

1 2 3 4 5 6 7 8

F E D C B A

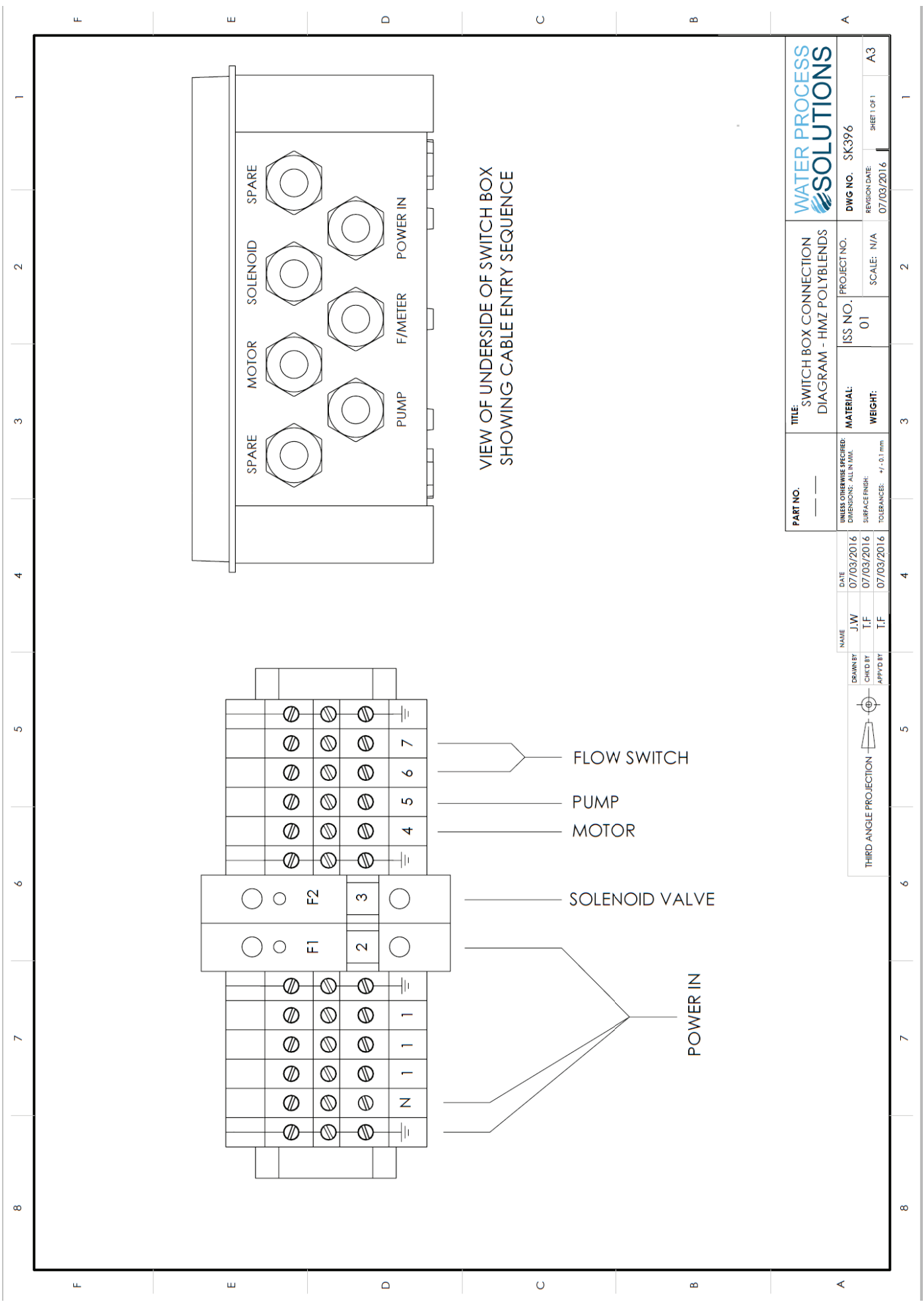


PART NO.		TITLE:		WATER PROCESS SOLUTIONS	
UNLESS OTHERWISE SPECIFIED: DIMENSIONS: ALL IN MM. SURFACE FINISH: TOLERANCES: ± 0.1 mm		HMZ SWITCH BOX GRAPHICS		DWG NO. SK515	
DATE		ISS NO.		PROJECT NO.	
07/03/2016		01		01	
NAME		SCALE:		SHEET 1 OF 1	
J.W.		1 / 1		A3	
T.F.					
T.F.					
07/03/2016					
07/03/2016					
07/03/2016					



THIRD ANGLE PROJECTION

1 2 3 4 5 6 7 8



WATER PROCESS SOLUTIONS

TITLE: SWITCH BOX CONNECTION DIAGRAM - HMZ POLYBLEND

PART NO. _____

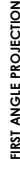
UNLESS OTHERWISE SPECIFIED:
DIMENSIONS: ALL IN MM.
SURFACE FINISH:
TOLERANCES: ± 0.1 mm

DATE 07/03/2016
NAME J.W.
DRAWN BY T.F.
CHK'D BY T.F.
APPR'D BY

ISS NO. 01
PROJECT NO. _____
MATERIAL: _____
WEIGHT: _____
SCALE: N/A

DWG NO. SK396
REVISION DATE: 07/03/2016
SHEET 1 OF 1 A3

THIRD ANGLE PROJECTION



UNLESS OTHERWISE SPECIFIED:

STRESS SENSITIZATION OF ECHINER:

DEBURN AND
BREAK SHARP

DIMENSIONS ARE

SURFACE FINISH:

TOLERANCES: ± 0.10 mm

MATERIAL:	WEIGHT:
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PART NO.

PART DESCRIPTION:

DWC-NO

WBCDWC CV000 V1

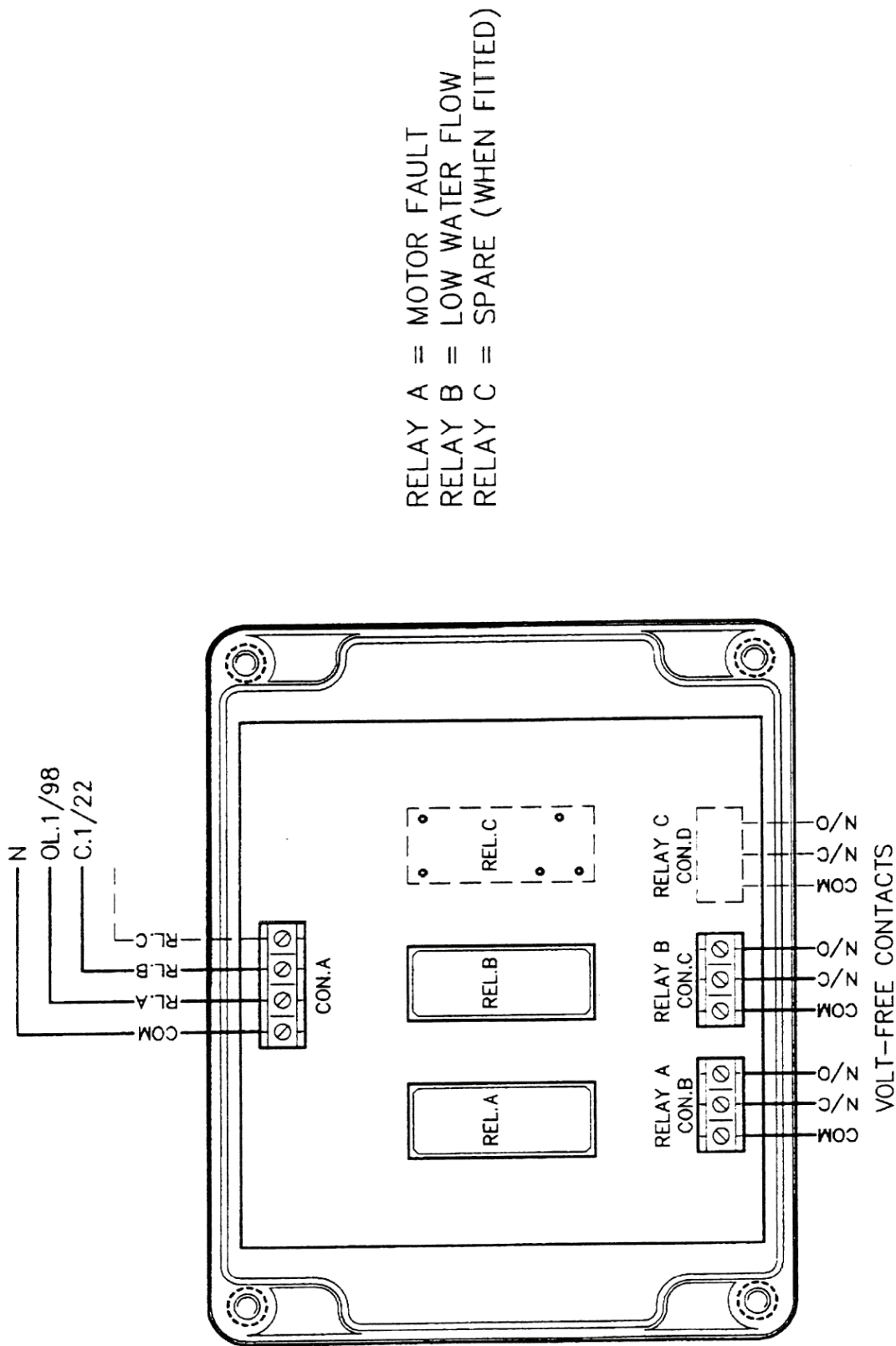
DWG TITLE:
POLYBLEND SWITCHBOX
DIAGRAM

PROJECT.

SCALE:	N/A	MASTER SIZE:	A1
SHEET	1 OF 1	REVISION:	

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Optional Volt-Free Alarm Box
Drawing No: SK538 Iss: 01



SECTION 7.3

MOTOR POWER FIGURES AND FULL LOAD CURRENTS

7.3.1 220/240V/1 phase/50 Hz Systems

PolyBlend Model	Activator Motor Amps	Metering Pump Amps	Solenoid Valve Amps	Full Load Current Amps
PB 600-1 HMZ	3.8	0.50	0.15	4.45
PB 600-2 HMZ	3.8	0.50	0.15	4.45
PB 600-4.5 HMZ	3.8	1.00	0.15	4.95
PB 1000-1 HMZ	3.8	0.50	0.15	4.45
PB 1000-2 HMZ	3.8	0.50	0.15	4.45
PB 1000-4.5 HMZ	3.8	1.00	0.15	4.95
PB 1000-8 HMZ	3.8	1.35	0.15	

7.3.2 110V/1 PHASE/50 Hz Systems

PolyBlend Model	Activator Motor Amps	Metering Pump Amps	Solenoid Valve Amps	Full Load Current Amps
PB 600-1 HMZ	7.6	1.00	0.3	8.9
PB 600-2 HMZ	7.6	1.00	0.3	8.9
PB 600-4.5 HMZ	7.6	2.00	0.3	9.9
PB 1000-1 HMZ	7.6	1.00	0.3	8.9
PB 1000-2 HMZ	7.6	1.00	0.3	8.9
PB 1000-4.5 HMZ	7.6	1.40	0.3	9.3
PB 1000.8 HMZ	7.6	2.70	0.3	10.6

SECTION 7.4

POWER FACTORS

7.4.1 220/240V/1 Phase/50 Hz and 110v/1 Phase/50 Hz Systems

PolyBlend Model	Activator Motor	Metering Pump	Solenoid Valve	Total Full Power VA Rating
PB 600-1	VA600	VA150	VA60	VA810
PB 600-2	VA600	VA150	VA60	VA810
PB 600-4.5	VA600	VA150	VA60	VA810
PB 1000-1	VA600	VA150	VA60	VA810
PB 1000-2	VA600	VA150	VA60	VA810
PB 1000-4.5	VA600	VA150	VA60	VA810
PB 1000-8	VA600	VA150	VA60	VA810

SECTION 7.5

REM-1E CONTROL UNIT

General Discription

The REM-1E digital display pump controller serves as either a pump remote control station or proportional pump controller (4-20 mA input) or both.

The REM-1E can be used to vary the output of any Liquid Metronics Incorporated (LMI) series AA7, B7 or D7 metering pump (pump must be in external mode). Simply connect either end of the four conductor cable (four conductor cable and connectors are standard) to the external input jack of the LMI pump and the other end of the four conductor cable to the bottom of the controller.

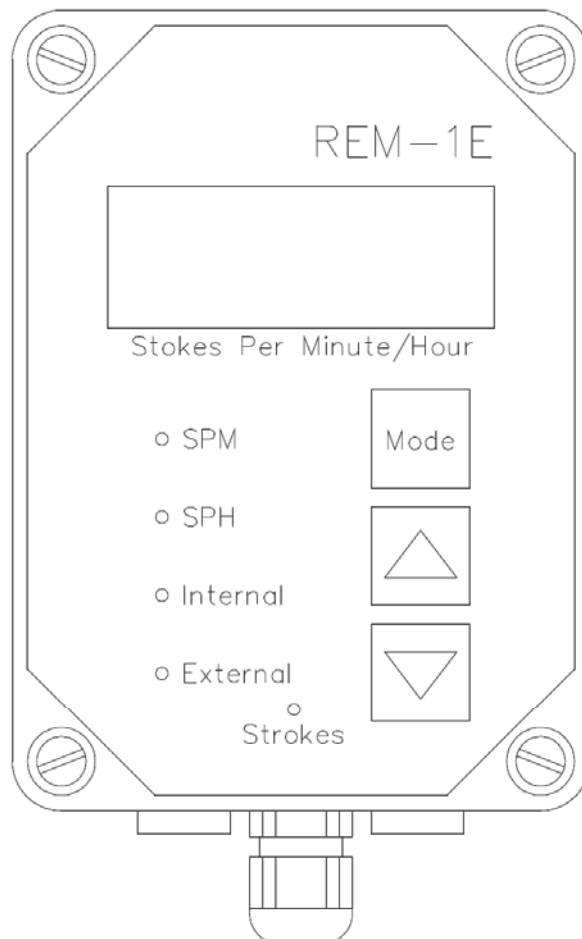
Power is supplied by the 15 VDC source from the LMI pump through the four conductor cable.

Controller output in the form of contact closures of 80ms duration triggers the LMI pump. In the internal mode, output is 0-100 strokes per hour (SPH) or 0-100 strokes per minute (SPM). Up and down, pressure sensitive membrane keys vary the output shown on an LCD digital display.

In the external mode, output is from 0-100 SPH or 0-100 SPM directly proportional to the 4-20 mA analogue input signal. Ten feet, three conductor cable and connectors are optional for 4-20 mA connection. Controller impedance is 220 ohms. Zero and span adjustments may be done through outside keys.

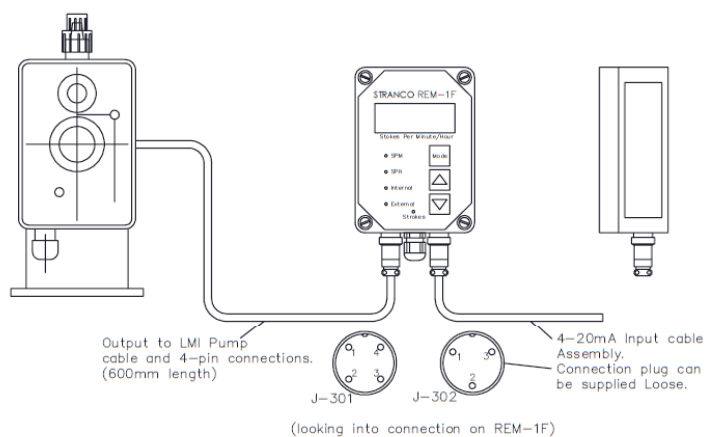
In the 'OFF' position, the 15 VDC power source will be present but the controller output will be zero. The display will read 'OFF.'

The polycarbonate plastic Nema 4X/IP55 enclosure may be easily wall-mounted near to or remote to the associated pump using standard cable/connector sets available from WPS.

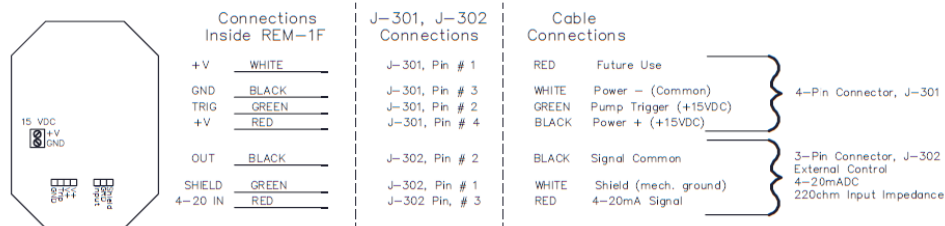


DWG NO. SK969.

REM-1F



Stranco Part Nos.
 REM-1F Cable Assembly: 8055
 4-Pin Connector only: 8079
 4-Pin Connector & Cable: 8079-A



ZERO and Span Adjustments

- 1: Press Mode key to enter the off mode.
- 2: Pump output will stop. With OFF shown in the display, press and hold the MODE button until the display shows "SPn".
- 3: After three seconds, the upper span limit will be displayed. The default is 100 SPM, (and the maximum allowed if connected to an LMI metering pump).
- 4: Increase or decrease the upper limit by using the arrow keys.
- 5: Press MODE to accept the new value and advance to the minimum span limit adjustment.
- 6: The minimum span limit and default is 0. Use the arrow keys to change the lower span limit.
- 7: Then press MODE to continue to the CAL section and follow instructions right, starting at 3, or press MODE twice to return to the OFF mode.

CALIBRATION

- 1: From the OFF mode press and hold the MODE button until the display changes to "SPn", then to the upper span limit.
- 2: Press MODE twice until the display shows CAL.
- 3: Press one of the arrow keys, up or down, (pressing MODE will skip the CAL sequence).
- 4: Display shows C4, (Calibration - 4mA).
- 5: Adjust input to a stable 4.00mA signal for at least 10 seconds, then push both arrow buttons. "ERR" means input is not near 4mA.
- 6: Display will change to C20.
- 7: Adjust input to 20.00mA signal for at least 10 seconds, then press both arrow buttons.
- 8: After the calibration sequence is completed, (or skipped), the display on the REM-1E will return to OFF.

SECTION 8

TROUBLESHOOTING

Safety Notes:

Always isolate PolyBlend before carrying out any maintenance work on unit.

The switch on the PolyBlend switchbox is not an isolator, therefore the unit should be connected into an isolated and fused supply.


SYMPTOM	POSSIBLE CAUSE/ACTION
Switchbox Indicators: Low water flow light on:	External water supply stopped. Flowmeter valve shut off. Flowmeter low-flow switch set too low. Flow out of PolyBlend shut off or blocked. Solenoid valve not working (see solenoid valve).
Motor fault light on (overload tripped): Overload is sited inside switchbox. Isolate PolyBlend unit and remove switchbox lid. Reset overload and replace lid (check seal) before switching power back on.	Chamber bearing failure – mechanical seal leaking. Concentration of polymer in chamber too high. Internal chamber mechanical failure. Unclean mains power supply or low voltage. Internal motor fault.
Solenoid Valve No water flow – valve not operating: Voltage to valve but still not working:	Check power supply to solenoid coil. Check fuses in switchbox. Check connections and wires secure. Actuation coil burnt out – replace coil. Internal fault – replace complete solenoid valve.

SYMPTOM	POSSIBLE CAUSE/ACTION
Polymer Metering Pump: Pump not pulsing: Pump only pulses in 'internal' mode: Pump still fails to run after checking above: Pump running but not injecting polymer:	Check fuses in switchbox Check connections. Check REM-1 (D) settings and cable connections. Internal electronic fault – consult WPS engineer. Has pump lost prime? – Re-prime pump. Check all tubing connections for leaks. Check for blockages or water in injection line. Clean injector assembly. Dismantle pump head assembly and clean ensuring all parts dry and correctly re-assembled. If pump still not injecting consult WPS engineer.
Mechanical Noises Vibration: Metallic sounds:	Is PolyBlend mounted on secure surface? Check chamber drive belt. If this is slack isolate unit, remove belt guard, slacken off motor bolts (in 4 places), press downwards on motor, hold down and tighten bolts. Replace belt guard before restarting unit. Check bearings. If worn replace and check mechanical seal not leaking. Check chamber impellers are secure in shaft. If not, strip down unit and repair or call service engineer.



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Literature No. WPS Gen Flyer UK 001.V1