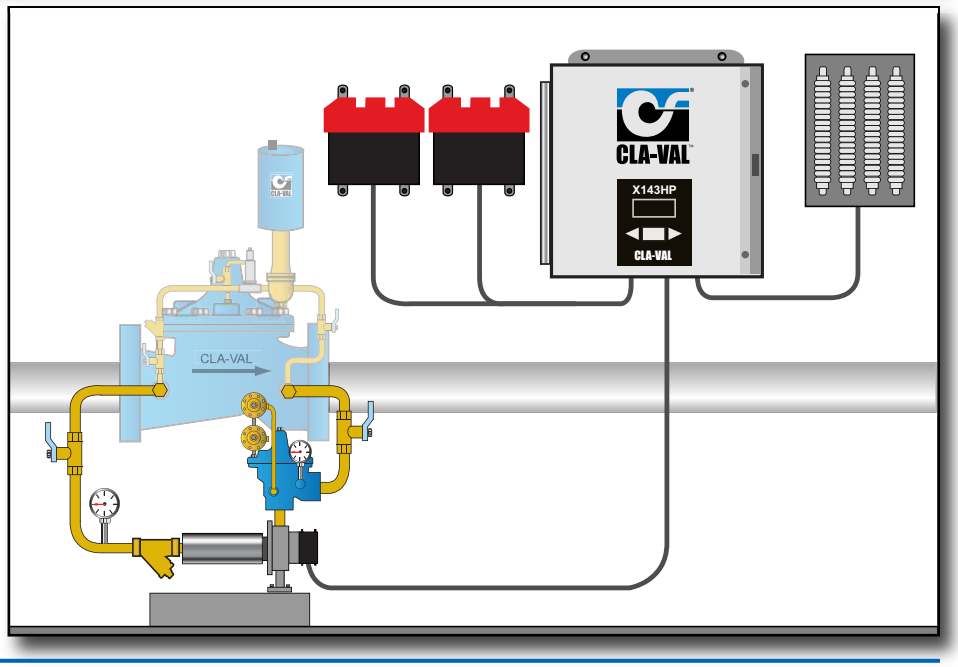
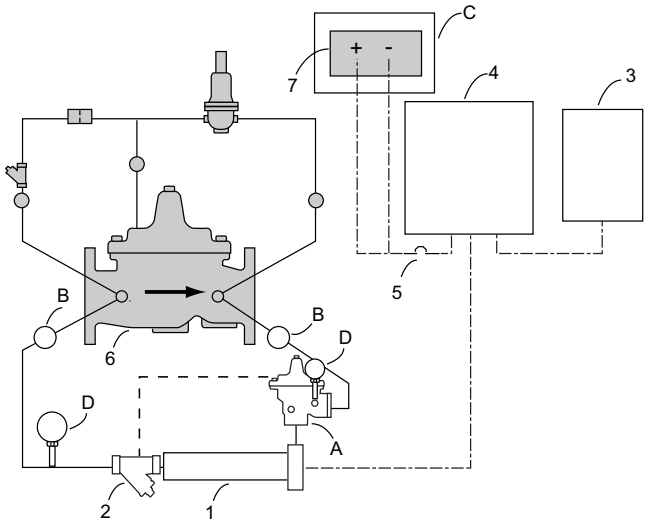
MODEL **X143HP**

Hydro-Powered Generator

Product Features

- Provides power by using the pressure drop across a PRV to run a generator
- Compact design easily adapts to small, pre-existing vaults or new installations
- No down time due to cloudy days
- Applications include powering electronic control valves, RTUs, monitoring equipment, sump pumps, lighting; and pressure management
- Can also be used for hydro-powered electronic monitoring
- Use one battery for 12 Volt or two for 24 Volt requirements
- Additional batteries may be used to store excess energy produced by generator system
- Patent Pending





Schematic Diagram

Supplied Equipment

1	Power Generator Unit
2	Y-Strainer
3	Diversion Load
4	DC Charge Controller/Power Display
5	Circuit Breaker

Optional Equipment

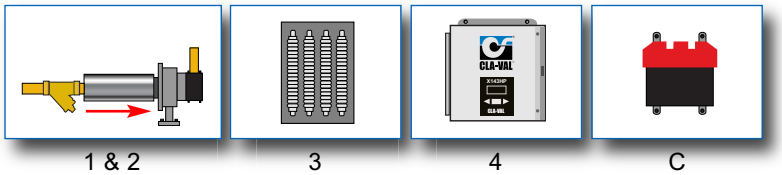
A	Control Valve: • 90 Series Pressure Reducing Valve (PRV) • or 40 Series Differential Limiting Valve • or 49 Series Differential PRV (with sensing line)
B	Isolation Ball Valve
C	Battery Housing
D	Gauge

Customer Supplied Equipment

6	New or existing Pressure Reducing Valve
7	Battery(ies)
- -	Wiring between 1 & 4, 3 & 4, and 4 & 7
- -	Tubing between 1 and 6

Power Generator Envelope Dimensions

2) Generator Unit with Y-Strainer: 7" H x 7" W x 21" L
   - Generator Unit with installed control valve = 25" H
3) Diversion Load: 16" H x 9" W x 4" D
4) DC Charge Controller/Display: 20 H x 20" W x 10" D
5) Battery Housing: 10.5" H x 10.5" W x 14" D



Power Generator Specifications

- 12V DC or 24V DC
- 30 PSI minimum differential pressure required
- 50 - 250 watts generator power output
- 1.25" NTP connection

Global Headquarters

PO Box 1325
Newport Beach, CA 92659
800.942.6326 • 949.548.5441 • www.cla-val.com

How to Calculate Power Generated

Power = Volts * Amps. To calculate necessary amps, divide the necessary power by the supplied voltage. Both the load on the system and the capacity of the power system is described in amp-hours. Multiply the amps by the number of hours the device runs per day to calculate amp-hours. The generation capacity must be greater than the typical load on the system. The total site load is the summation of each of the individual device requirements.

Excess system capacity is determined by subtracting the system load from the system generating capacity. System generating capacity is determined by evaluating power in watts generated for a given head from the graph. Power in watts is then converted to amps for a given voltage and multiplied by the run-time (WATTS / VOLTAGE = AMPS, AMPS x HOURS = AMP-HOURS). System load must be less than the system generating capacity but may be exceeded temporarily, provided ample power is available in the battery.

Calculation Example

Device	Power* (WATTS)	AMPS @ 12VDC	Run Time (MIN/DAY)	AMP-HOURS	Notes
Radio (Receiving)	2.00	0.17	1440.00	4.00	Continuous
Radio (Transmitting)	5.00	0.42	4.80	0.03	1 Sec duration every 5 Min
RTU	15.00	1.25	1440.00	30.00	Continuous
Pump	200.00	16.67	30.00	8.33	Variable
Fluorescent Lamp	40.00	3.33	60.00	3.33	Servicing Only

*All values are assumed and do not necessarily reflect actual values

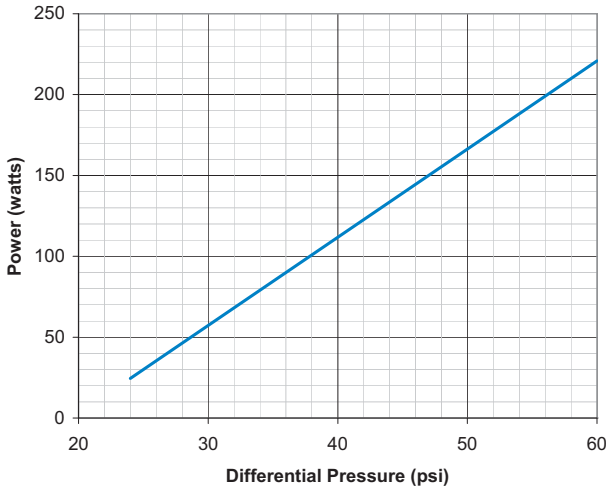
TOTAL REQUIRED AMP-HOURS: 45.70

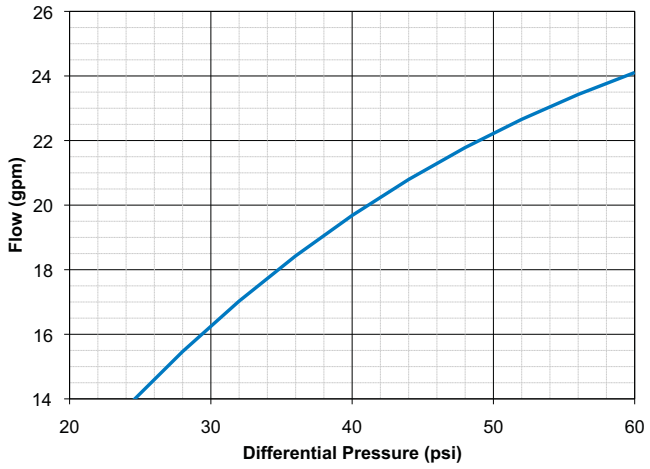
Input Pressure (PSI)	Output Pressure (PSI)	Pressure Drop (PSI)	Power (WATTS)	AMPS @ 12V DC	AMP-HOURS**
60.00	20.00	40.00	110.00	9.16	220.00

**Assuming Generation Unit runs 24hours/day

TOTAL SUPPLIED AMP-HOURS: 220.00

Power and Flow Charts





Note: The curves shown above were produced utilizing the control valve downstream of the generation unit. For detailed power and flow calculations, please contact the factory at 800.942.6326 or the sales agent nearest you to perform an analysis using our **Cla-Power® Software**.

developed in partnership with SOAR TECHNOLOGIES, INC.

Technical Data:

Both the power generated and flow through the Power Generator are dependent upon the differential pressure (DP) across the Power Generator unit. To determine the DP, subtract downstream pressure from the upstream pressure. Use the calculated DP along with the power/flow charts to estimate the power and flow of the Power Generator. If the flow through the Power Generator exceeds the downstream flow of the water system or a minimum DP is not met, the Power Generator will be inoperable. If the Differential Pressure across the unit exceeds 60 PSID, the optional control valve must be used to limit the differential.

Battery storage capacity is variable upon each application and the customer's needs. If instantaneous system load exceeds the

IPL group, Slane Road, Drogheda, Co. Louth, Ireland. Tel: +353 41 9832591 | Fax: +353 41 9832599 | Email: info@ipl.ie | Website: www.iplgroup.com