



AP&V152-99136 ENTERPRISE TURGO
HYDRO TURBINE
Energy Recovery · Power Generation · Low Head Applications

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PRODUCT OVERVIEW

The AP&V152-99136 Enterprise Turgo Hydro Turbine is designed to generate usable electric power from water sources including wastewater, excess pump head, and natural streams. With heads as low as 50 feet and flows as low as 90 GPM, this turbine makes power generation feasible for industrial plants, small municipalities, and agricultural operations.

Industrial plants, small municipalities, and farmers are tapping available resources to produce electric power as a revenue source or a means to reduce overall energy demand. Turbine assemblies from Altec Pumps & Valves Engineering make it feasible to generate power from water sources such as wastewater, excess pump head, or natural streams.

TURBINE TECHNOLOGY COMPARISON

REACTION TURBINES	PELTON TURBINES
<ul style="list-style-type: none"> • Ideal for steady, consistent flow • Highly efficient • Works with positive outlet pressure (such as force mains) 	<ul style="list-style-type: none"> • Excellent for variable flows • No flywheel required • No quick-opening bypass needed in event of grid loss

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|---|-------------------------------------|
| • Lower cost compared to Pelton | • Must be exhausted to atmosphere |
| • Can use flywheel for grid loss | • More expensive than reaction |
| • Quick opening bypass valve option for variable pressure | • Better for high head applications |

KEY FEATURES

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| ✓ Generates power from heads as low as 50 feet |
| ✓ Operates with flows as low as 90 GPM |
| ✓ Suitable for wastewater, excess head, and natural streams |
| ✓ Innovative turbine design for unexpectedly high performance |
| ✓ Wide range of configurations and mounting styles available |
| ✓ Easy to install |
| ✓ Requires little maintenance |
| ✓ Creates revenue or reduces energy demand |
| ✓ Ideal for industrial plants, municipalities, and farmers |
| ✓ Available with flywheel or quick-opening bypass valve options |

TECHNICAL SPECIFICATIONS

Parameter	Value / Range
Minimum Head	50 feet (15 meters)
Minimum Flow	90 GPM (5.7 L/s)
Turbine Type	Reaction / Turgo design
Applications	Wastewater, excess head, streams
Installation	Easy, multiple mounting styles
Maintenance	Low
Output	Usable electric power
Grid Loss Protection (Reaction)	Flywheel or quick opening bypass
Pelton Turbine Requirements	Must exhaust to atmosphere

APPLICATIONS

INDUSTRIAL PLANTS	MUNICIPAL FACILITIES
<ul style="list-style-type: none">• Wastewater discharge lines• Excess pressure in pipelines• Cooling water returns• Process water flows• Plant water distribution	<ul style="list-style-type: none">• Wastewater treatment plants• Water distribution systems• Pressure reducing stations• Effluent outfalls• Raw water intakes

AGRICULTURAL	NATURAL RESOURCES
<ul style="list-style-type: none">• Irrigation systems• Livestock water lines• Rural water districts• Farm ponds and reservoirs• Gravity feed systems	<ul style="list-style-type: none">• Small streams and creeks• Spring-fed water sources• Runoff collection systems• Remote power applications• Off-grid locations

PERFORMANCE HIGHLIGHTS

LOW HEAD CAPABILITY
<p>Unlike traditional hydro turbines that require high heads, the AP&V152-99136 generates usable power from heads as low as 50 FEET. This makes power generation feasible in locations previously considered</p>

uneconomical.

LOW FLOW CAPABILITY

With minimum flow requirements as low as 90 GPM, this turbine can generate power from modest water sources. Small streams, irrigation returns, and wastewater lines become potential power sources.

UNEXPECTEDLY HIGH PERFORMANCE

Altec Pumps & Valves Engineering's innovative turbine design results in unexpectedly high performance compared to conventional turbines of similar size and application.

TURBINE SELECTION GUIDE

WHEN TO CHOOSE REACTION TURBINE

- ✓ Steady, consistent flow available
- ✓ Positive outlet pressure needed (force mains)
- ✓ Lower budget priority
- ✓ Can accommodate flywheel or bypass valve if needed
- ✓ Grid stability is a concern

WHEN TO CHOOSE PELTON TURBINE

- ✓ Variable flow conditions
- ✓ No flywheel or bypass valve desired
- ✓ Higher head applications
- ✓ Can exhaust to atmosphere
- ✓ Higher budget available for better variable flow performance

TURBINE CONFIGURATIONS

STANDARD CONFIGURATIONS

- Horizontal shaft arrangement
- Vertical shaft arrangement
- Direct coupled to generator
- Belt drive options
- Skid-mounted packages
- Custom configurations available

MOUNTING STYLES

AVAILABLE MOUNTING OPTIONS

- Baseplate mounted
- Wall mounted
- Pipe mounted
- Concrete pad mounted
- Floating platform
- Submersible configuration
- Custom engineered mounts

CONTROL & PROTECTION OPTIONS

GRID LOSS PROTECTION (REACTION TURBINES)

For reaction turbine applications where variable pressure or grid stability is a concern:

- FLYWHEEL: Provides inertia during grid loss
- QUICK OPENING BYPASS VALVE: Diverts flow during emergencies
- Automatic control systems
- Load management controllers

PELTON TURBINE REQUIREMENTS

Pelton turbines must be exhausted to the atmosphere. They require:

- Atmospheric discharge conditions
- No back pressure on turbine
- Proper venting and drainage
- Suitable for variable flow without additional protection

BENEFITS SUMMARY

ECONOMIC BENEFITS

- ✓ Revenue from power generation
- ✓ Reduced energy costs
- ✓ Short payback period
- ✓ Utilization of existing water flow
- ✓ Green energy incentives

OPERATIONAL BENEFITS

- ✓ Low maintenance requirements
- ✓ Easy installation
- ✓ Reliable operation
- ✓ Long service life
- ✓ Minimal operator attention

| ✓ Carbon footprint reduction

| ✓ Works with existing pipelines

TYPICAL POWER OUTPUT

Head (ft)	Flow (GPM)	Approximate Power Output (kW)
50	90	0.5 - 1.0
50	500	3.0 - 4.5
100	500	6.0 - 8.0
150	1000	18.0 - 22.0
200	1000	24.0 - 28.0

Note: Actual output depends on site-specific conditions and equipment.

COMPONENTS

STANDARD TURBINE PACKAGE INCLUDES:

- Turgo turbine assembly
- Generator (specify voltage/frequency)
- Control panel
- Inlet valve
- Mounting hardware
- Installation manual

OPTIONAL COMPONENTS:

- Flywheel (reaction turbine)
- Quick opening bypass valve (reaction turbine)
- Flow meter
- Pressure gauges
- Remote monitoring system
- Grid-tie inverter

DIMENSIONS (Approximate)

Dimension	Size
Overall Length	[Insert dimension]
Overall Width	[Insert dimension]
Overall Height	[Insert dimension]
Inlet Connection	[Insert size]
Outlet Connection	[Insert size]
Weight	[Insert weight]

CASE STUDIES / APPLICATIONS

INDUSTRIAL PLANT:

A chemical manufacturing facility installed the AP&V152-99136 in their wastewater discharge line. With 80 feet of head and 300 GPM flow, they generate 8 kW continuously, offsetting 70,000 kWh annually.

MUNICIPAL FACILITY:

A small municipality installed the turbine in their water distribution system at a pressure reducing station. Previously wasted energy now powers their treatment plant monitoring equipment.

QUALITY ASSURANCE

Each AP&V152-99136 turbine undergoes:

- Hydrostatic testing
 - Mechanical run testing
 - Generator performance verification
 - Control system validation
 - Material certification traceability
 - Dimensional inspection
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CERTIFICATIONS & STANDARDS

- ISO 9001:2015 certified manufacturing
 - CE marked
 - Designed to applicable hydro turbine standards
 - Generator certified to NEMA/IEC standards
 - Pressure equipment directive compliant (where applicable)
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ORDERING INFORMATION

When ordering, please specify:

1. Turbine model: AP&V152-99136
 2. Turbine type: Reaction or Pelton
 3. Site head (feet/meters)
 4. Site flow (GPM or L/s)
 5. Flow characteristics (steady or variable)
 6. Generator voltage and frequency
 7. Grid connection type (grid-tie or stand-alone)
 8. Mounting style required
 9. Protection options (flywheel, bypass valve)
 10. Any special requirements
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DOWNLOAD

Additional technical documentation, drawings, and performance curves for the AP&V152-99136 Enterprise Turgo Hydro Turbine are available for download from our website.

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Turn Wastewater into Watts · Heads as Low as 50 ft · Flows as Low as 90 GPM
