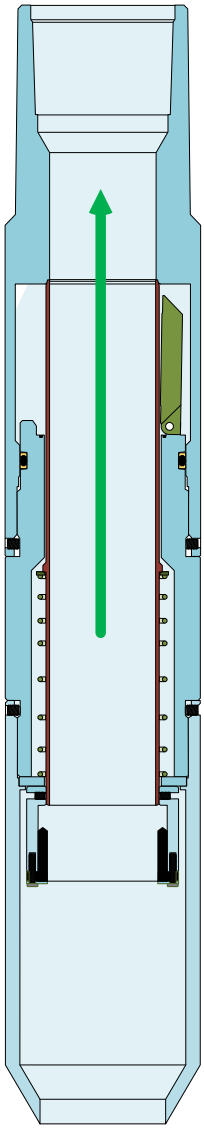
PetroQuip Reservoir ShutOff Valve



PetroQuip's **Reservoir ShutOff Valve** is a flow actuated device that prevents fluid from flowing back into the formation when downhole flow is reversed. It is typically installed below an electric submersible pump (ESP) or artificial lift completion.

The **Reservoir ShutOff Valve** utilizes an industry standard safety valve flapper to create a fluid barrier and seal.

Advantages and Features

- Significantly reduces kill fluid volume/cost during workover operations
- Reduces rig time by maintaining static fluid level creating a down hole barrier
- Reduces potential reservoir damage due to fluid loss
- Less than 3 psi pressure drop at 2,000 BPD production
- Normally open with all sealing surfaces protected from flow
- Patent pending closing mechanism activated by reserve flow
- Contingency bypass available upon request

Applications

- Can be installed in new or existing completions
- Installed above or below packer
- Utilized in a SAG-D well to retain heat in the lateral
- Does not hinder the use of a rupture disk for initial well suspension

Tubing Size (in)	Tool OD (in)	ID (in)	Tool OAL (in)	Pressure Rating (psi)	Temp Rating (°F)	
					STD	HT
2-3/8	3.63	1.900	30	5,000	350	600
2-7/8	4.40	2.312	32			
	4.65	2.312		10,000		
3-1/2	5.20	2.750	36			
4-1/2	7.20	3.810	39			

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PetroQuip Reservoir ShutOff Valve

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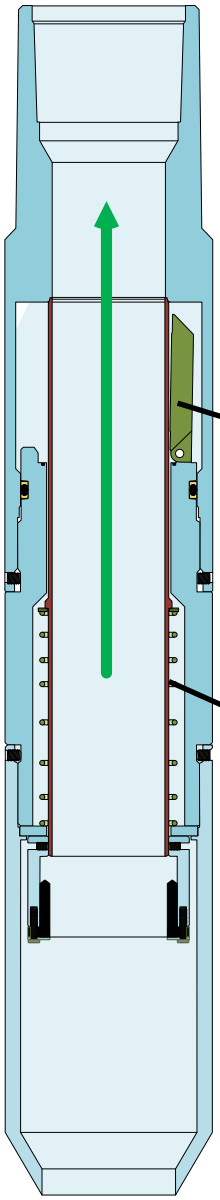
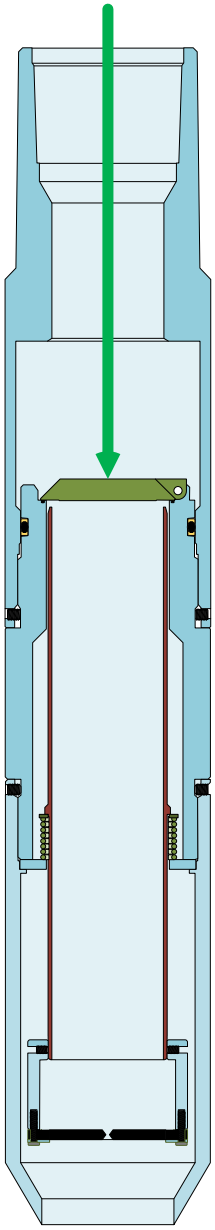
Production mode – Flapper normally open



Utilizing industry standard flapper for isolation

Spring loaded flow tube opens and protects the flapper and seat

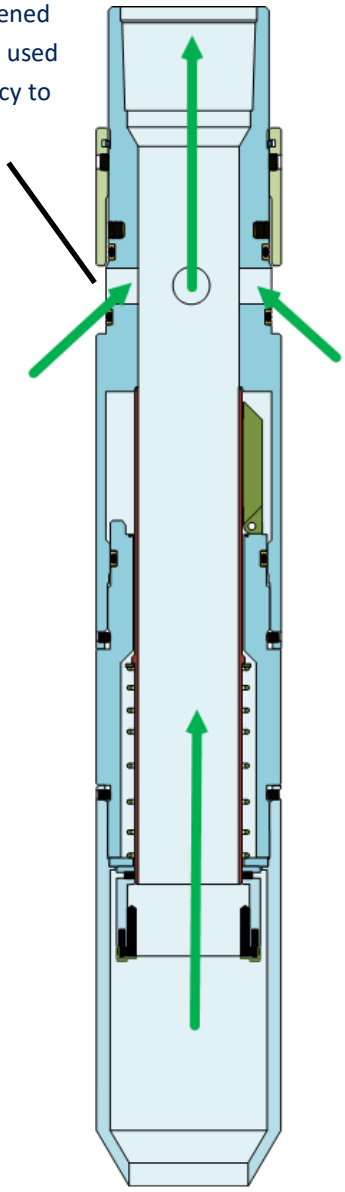
Isolation mode – Flapper closed



Patent pending self–piloting closure mechanism actuated by reverse flow

Optional Contingency bypass

One time bypass opened by applied pressure, used only for a contingency to re-establish flow



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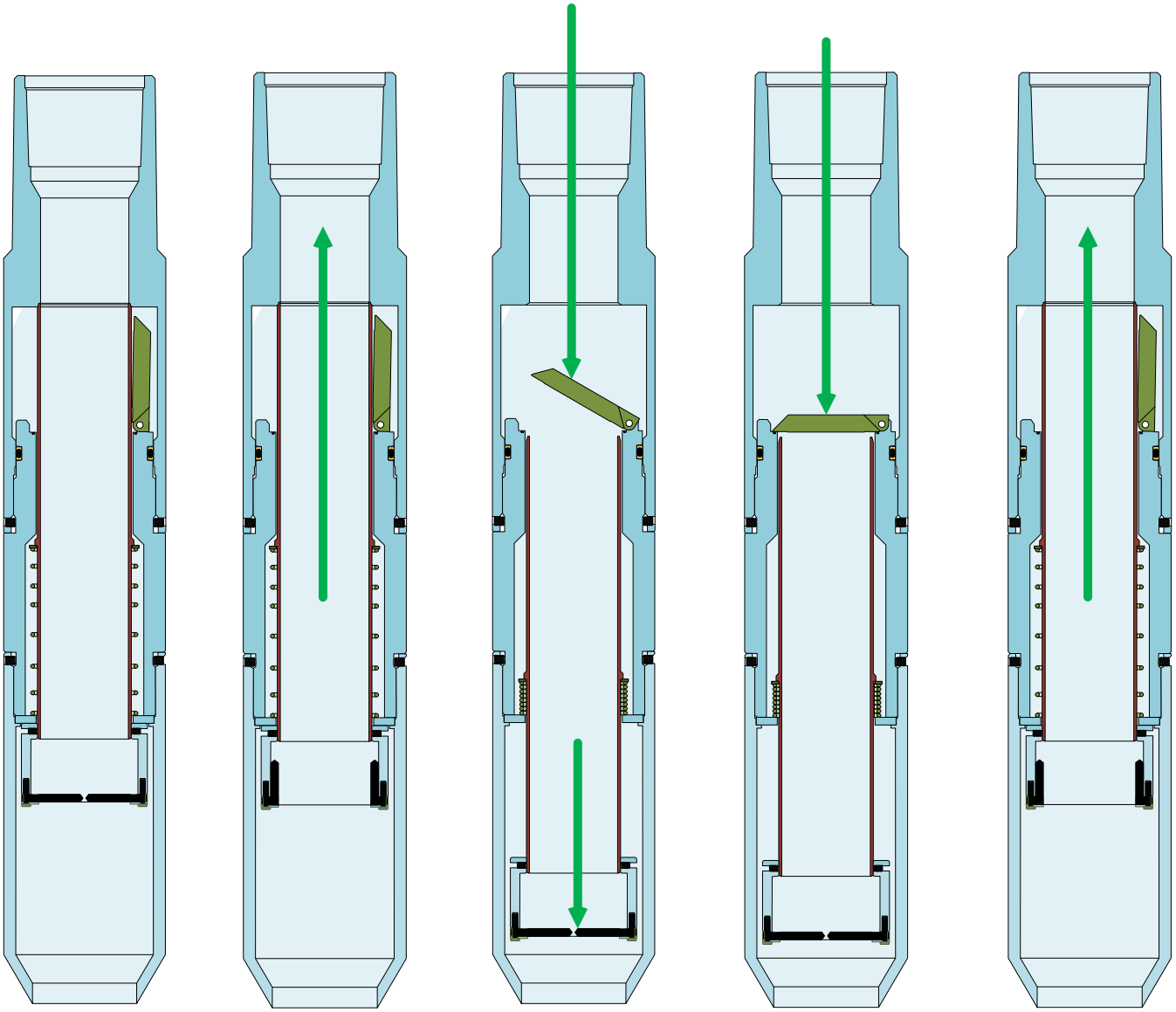
PetroQuip Reservoir ShutOff Valve

Modes of Operation



Stabilized Wellbore (no flow)

Production Mode

Reverse Flow or Injection

Workover Mode (10,000 psi differential)

Well Returned to Production

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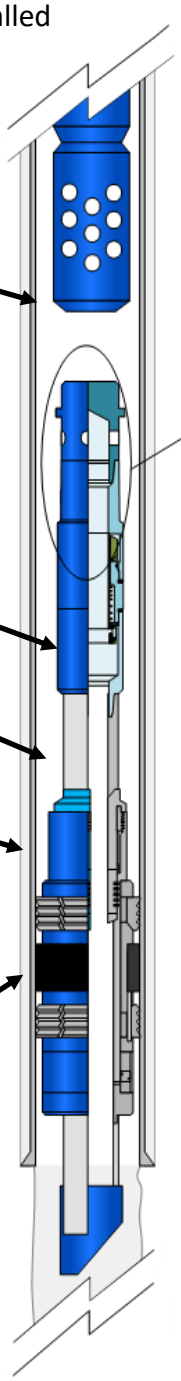
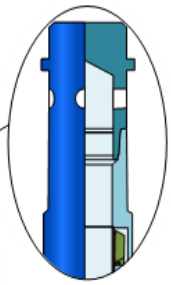
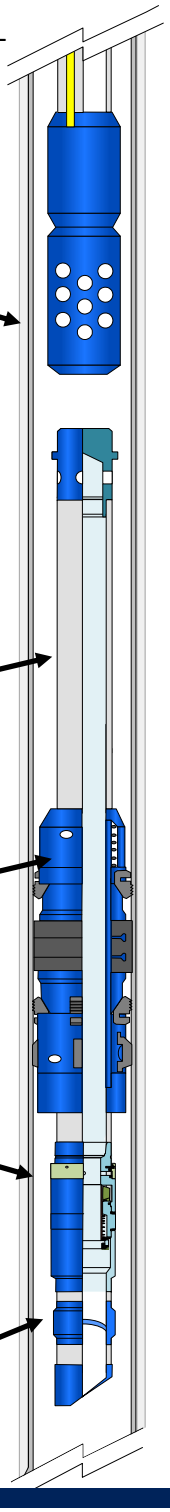
Reservoir ShutOFF Valve Installed above a packer





Reservoir ShutOFF Valve Installed below a packer



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