

Annual Maintenance Plan

Summary

There should be a visual inspection performed annually. This annual inspection will not require removing the arc chutes. Along with the visual inspection, some minor maintenance is performed.

Maintenance Detail

The following items should be looked at and noted yearly. Use this detailed list in conjunction with the checklist.

Pole Unit

- Moving contacts – check for excessive wear. Clean off old grease and apply a new coat.
- Stationary contacts – use a flash light to check the condition of the stationary contacts. Look for signs of excessive wear.
- Pull Rod – check for looseness on the locking nut. Tighten if necessary. Check condition of pins. Apply lubrication if necessary.
- Blast tube – check for looseness of mounting bolts.
- Contact Bridge – remove and check for excessive wear. Clean off old grease and apply a new coat. Torque 3/8” bolts to 18 ft. lbs.

Arc Chute

- Splitter plates – check for excessive wear or burning on splitter plates.

Mechanism

- Oilite bearing – clean link and apply fresh oil to bearing.
- Link – check for signs of excessive wear.
- Piping connections – check for loose or leaking connections.

Shock Absorbers

- Check for leaks
- Check for excessive wear
- Lubricate pins as necessary

Air System

- Run a leak test to check seals and piping.

Operating Shaft

- Grease bearings

Annual Checklist

Unit #:	Date:
Serial Number:	Counter Reading:
Maintenance Personnel:	

Pole Unit	As Found			As Left		
	AΦ	BΦ	CΦ	AΦ	BΦ	CΦ
Moving Contacts						
Stationary Contacts						
Contact Bridge						
Pull Rod						
Blast Tube						
Arc Chute						

Mechanism	As Found	As Left
Oilite Bearing		
Link		
Piping connections		

Shock Absorber Assemblies	As Found	As Left
Outside Left		
Inside Left		
Inside Right		
Outside Right		

Operating Shaft	As Found	As Left
Grease Left Bearing		
Grease Right Bearing		

Air System	Time	As Found	As Left
Initial reading			
½ Hour reading			
1 Hour after first reading			

5-Year Maintenance Plan

Summary

After every fifth year of operation, more detailed maintenance should be performed on the breaker. This maintenance includes the replacement of the rubber parts of the blast valve.

Maintenance Detail

The following items need the prescribed maintenance performed every fifth year of operation

Pole Unit

- Moving contacts – check for excessive wear. Clean off old grease and apply a new coat.
- Stationary contacts – use a flash light to check the condition of the stationary contacts. Look for signs of excessive wear.
- Pull Rod – check for looseness on the locking nut. Tighten if necessary. Check condition of pins. Apply lubrication if necessary.
- Blast tube – check for looseness of mounting bolts.
- Contact Bridge – remove and check for excessive wear. Clean off old grease and apply a new coat. Torque 3/8" bolts to 18 ft. lbs.
- Contact Penetration – since pull rods will be detached from the operating shaft to remove the blast valve, contact penetration will have to be checked.

Arc Chute

- Splitter plates – check for excessive wear or burning on splitter plates.

Mechanism

- Oilite bearing – clean link and apply fresh oil to bearing.
- Link – check for signs of excessive wear.
- Piping connections – check for loose or leaking connections.

Shock Absorbers

- Check for leaks
- Check for excessive wear
- Lubricate pins as necessary

Air System

- Run a leak test to check seals and piping.

Operating Shaft

- Grease bearings

Blast Valve

- Replace valve disk.
- Replace assembly o-rings.
- Replace mounting o-ring.
- Check opening setting (follow appropriate procedure).

- Check that all blast valves reset at about the same time.
- Check that all blast valves open at about the same time.
- Check reset with auxiliary switch.

Breaker – Timing tests

- Run timing tests
- Check performance of shock absorbers. Bounce up to 25% of the opening stroke is permissible.
- Make note of opening and closing times
- Make note of air consumption.

5-Year Checklist

Unit #:	Date:
Serial Number:	Counter Reading:
Maintenance Personnel:	

Pole Unit	As Found			As Left		
	AΦ	BΦ	CΦ	AΦ	BΦ	CΦ
Moving Contacts						
Stationary Contacts						
Contact Bridge						
Pull Rod						
Blast Tube						
Arc Chute						
Contact Penetration (main contacts)						

Mechanism	As Found	As Left
Oilite Bearing		
Link		
Piping connections		

Shock Absorber Assemblies	As Found	As Left
Outside Left		
Inside Left		
Inside Right		
Outside Right		

Operating Shaft	As Found	As Left
Grease Left Bearing		
Grease Right Bearing		

Air System	Time	As Found	As Left
Initial reading			
½ Hour reading			
1 Hour after first reading			

Blast Valve	As Found			As Left		
	AΦ	BΦ	CΦ	AΦ	BΦ	CΦ
Closed Measurement						
Open Measurement						
Open Measurement – Closed Measurement = Total Opening						
Check opening sequence						
Check reset sequence						

Timing Tests	As Found	As Left
Close Time at 150 p.s.i.		
Open Time at 150 p.s.i.		
Air consumption closing at 150 p.s.i.		

Air consumption opening at 150 p.s.i.		
Close – Open time at 150 p.s.i.		
Air consumption close-open at 150 p.s.i.		
Close Time at 112 p.s.i.		
Open Time at 112 p.s.i.		
Air consumption closing at 112p.s.i.		
Air consumption opening at 112 p.s.i.		
Close – Open time at 112 p.s.i.		
Air consumption close-open at 112 p.s.i.		

15-Year Maintenance Plan

Summary

After every fifteenth year of operation, more detailed maintenance should be performed on the breaker. This maintenance includes the replacement of the rubber parts of the blast valve.

Maintenance Detail

The following items need the prescribed maintenance performed every fifteenth year of operation

Pole Unit

- Moving contacts – check for excessive wear. Clean off old grease and apply a new coat.
- Stationary contacts – use a flash light to check the condition of the stationary contacts. Look for signs of excessive wear.
- Pull Rod – check for looseness on the locking nut. Tighten if necessary. Check condition of pins. Apply lubrication if necessary.
- Blast tube – check for looseness of mounting bolts.
- Contact Bridge – remove and check for excessive wear. Clean off old grease and apply a new coat. Torque 3/8" bolts to 18 ft. lbs.
- Contact Penetration – since pull rods will be detached from the operating shaft to remove the blast valve, contact penetration will have to be checked.

Arc Chute

- Splitter plates – check for excessive wear or burning on splitter plates.

Mechanism

- Oilite bearing – clean link and apply fresh oil to bearing.
- Link – check for signs of excessive wear.
- Piping connections – check for loose or leaking connections.

Shock Absorbers

- Replace all shock absorbers
- Check holes on operating shaft for wear

Air System

- Run a leak test to check seals and piping.

Operating Shaft

- Grease bearings

Blast Valve

- Replace valve disk.
- Replace assembly o-rings.
- Replace mounting o-ring.
- Check opening setting (follow appropriate procedure).
- Check that all blast valves reset at about the same time.

- Check that all blast valves open at about the same time.
- Check reset with auxiliary switch.

Breaker – Timing tests

- Run timing tests
- Check performance of shock absorbers. Bounce up to 25% of the opening stroke is permissible.
- Make note of opening and closing times
- Make note of air consumption.

15-Year Checklist

Unit #:	Date:
Serial Number:	Counter Reading:
Maintenance Personnel:	

Pole Unit	As Found			As Left		
	AΦ	BΦ	CΦ	AΦ	BΦ	CΦ
Moving Contacts						
Stationary Contacts						
Contact Bridge						
Pull Rod						
Blast Tube						
Arc Chute						
Contact Penetration (main contacts)						

Mechanism	As Found	As Left
Oilite Bearing		
Link		
Piping connections		

Shock Absorber Assemblies	As Found	As Left
Outside Left		
Inside Left		
Inside Right		
Outside Right		

Operating Shaft	As Found	As Left
Grease Left Bearing		
Grease Right Bearing		

Air System	Time	As Found	As Left
Initial reading			
½ Hour reading			
1 Hour after first reading			

Blast Valve	As Found			As Left		
	AΦ	BΦ	CΦ	AΦ	BΦ	CΦ
Closed Measurement						
Open Measurement						
Open Measurement – Closed Measurement = Total Opening						
Check opening sequence						
Check reset sequence						

Timing Tests	As Found	As Left
Close Time at 150 p.s.i.		
Open Time at 150 p.s.i.		
Air consumption closing at 150 p.s.i.		

Air consumption opening at 150 p.s.i.		
Close – Open time at 150 p.s.i.		
Air consumption close-open at 150 p.s.i.		
Close Time at 112 p.s.i.		
Open Time at 112 p.s.i.		
Air consumption closing at 112p.s.i.		
Air consumption opening at 112 p.s.i.		
Close – Open time at 112 p.s.i.		
Air consumption close-open at 112 p.s.i.		

