

Red Deer Ironworks



TOPWORKS, Adjustable Choke Valve Maintenance Manual

Parts Covered: AC215TOPWORKS,
AC215TOPWORKSSTD
AC315TOPWORKS,
AC315TOPWORKSSTD &
AC26TOPWORKS

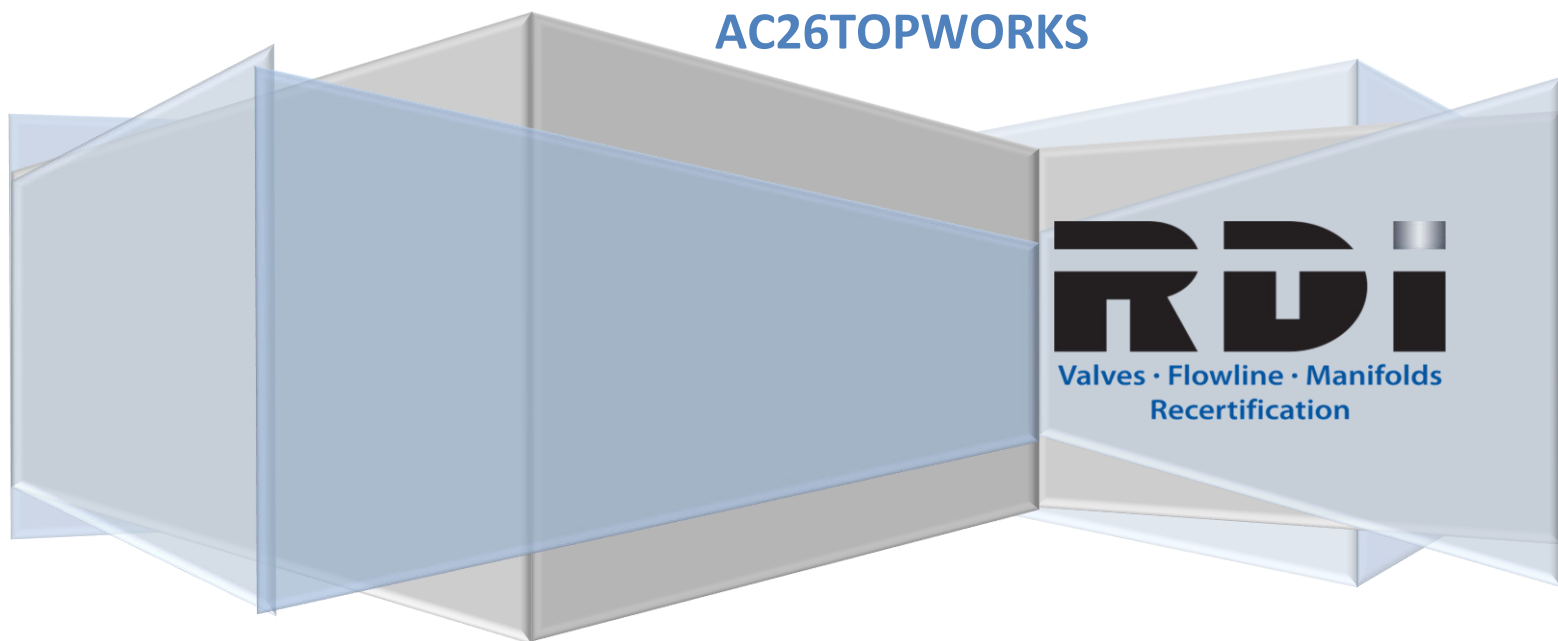


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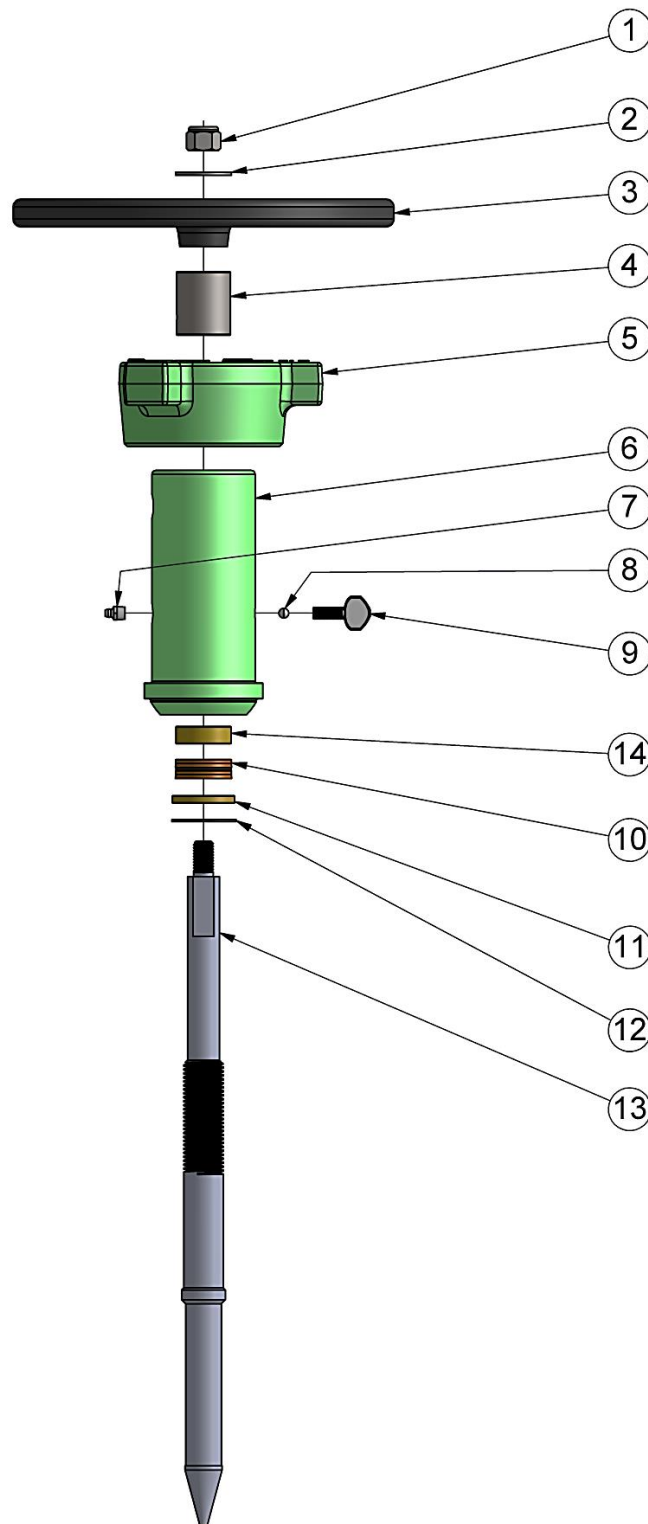
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Exploded View - 2" 1502 TOPWORKS, Adjustable Choke Valve

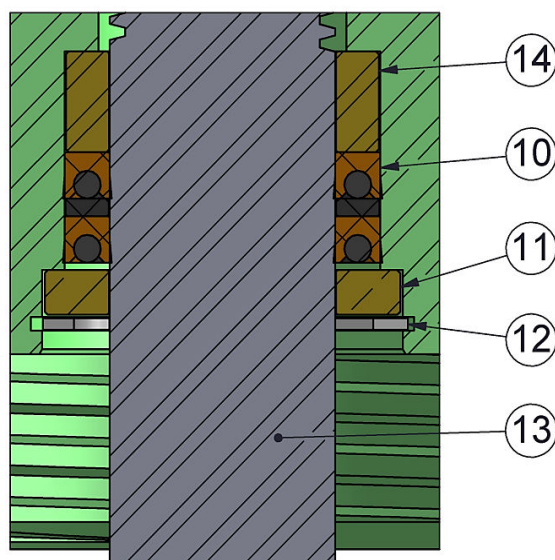


Parts Listing - 2" 1502 TOPWORKS, Adjustable Choke Valve

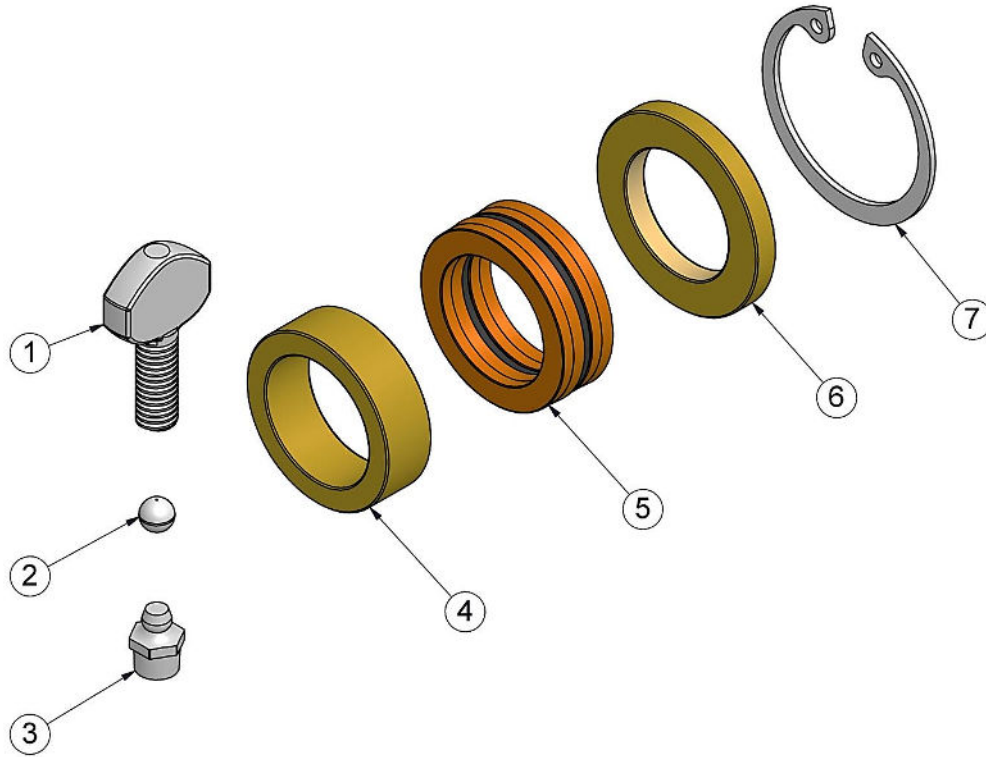
Item	Qty	Description	Part # Sour (H ₂ S)	Part # Standard
1	1	5/8" Nyloc Nut	NYLOCNUT 0.6250-11-D-N	NYLOCNUT 0.6250-11-D-N
2	1	5/8" Flat Washer	FW 0.625	FW 0.625
3	1	Hand Wheel	AC215HANDLE	AC215HANDLE
4	1	Indicator - 2" Choke	AC2INDIC	AC2INDIC
5	1	Wingnut Body	WN21502	WN215DETSTD
6	1	*Bonnet Body	AC215FINBON	AC215FINBONSTD
7	1	Grease Fitting 1/8" NPT	ACGREASEFTG	ACGREASEFTG
8	1	Ball 2" Choke	ACBALL	ACBALL
9	1	Thumbscrew - 2" Choke	AC2TSCREW	AC2TSCREW
10	1	Packing Kit - 2" Fig 1502	AC215PKG	AC215PKG
11	1	Junk Ring	AC215JUNKRING	AC215JUNKRING
12	1	2" Internal Snap Ring	AC215ISRING	AC215ISRING
13	1	Stem - 2" Fig 1502 Choke	ACST34TCT	ACST34TCT
14	1	Stem Guide	AC215STEMGUIDE	AC215STEMGUIDE

* This item is not sold separately.

Choke Cross-section

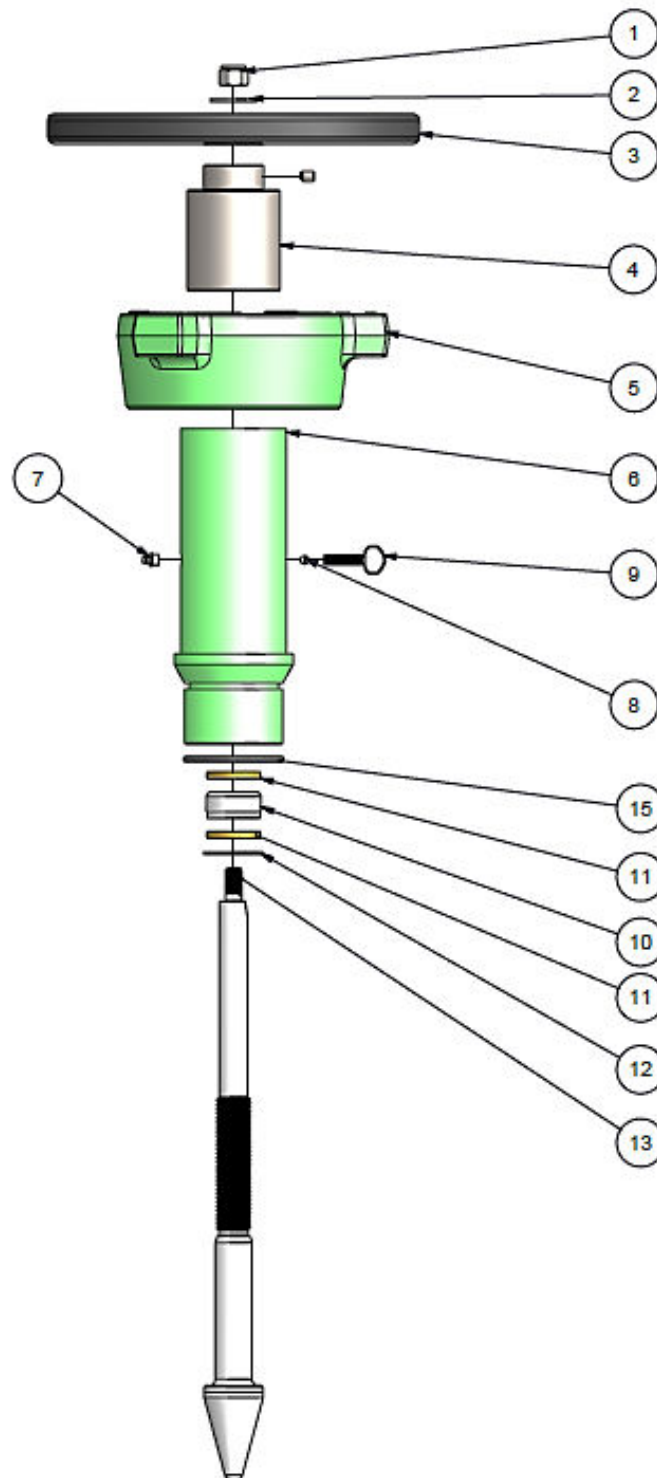


Major Repair Kit Parts Listing - 2" 1502 TOPWORKS, Adjustable Choke Valve



Item	Qty	Description	Part # Sour (H ₂ S) and Standard
		Major Repair Kit	ACRK215MAJ
1	1	Thumbscrew - 2" Choke	AC2TSCREW
2	1	Ball 2" Choke	ACBALL
3	1	Grease Fitting 1/8" NPT	ACGREASEFTG
4	1	Stem Guide	AC215STEMGUIDE
5	1	Packing Kit 2" Fig 1502	AC215PKG
6	1	Junk Ring	AC215JUNKRING
7	1	Internal Snap Ring 2"	AC215SRING

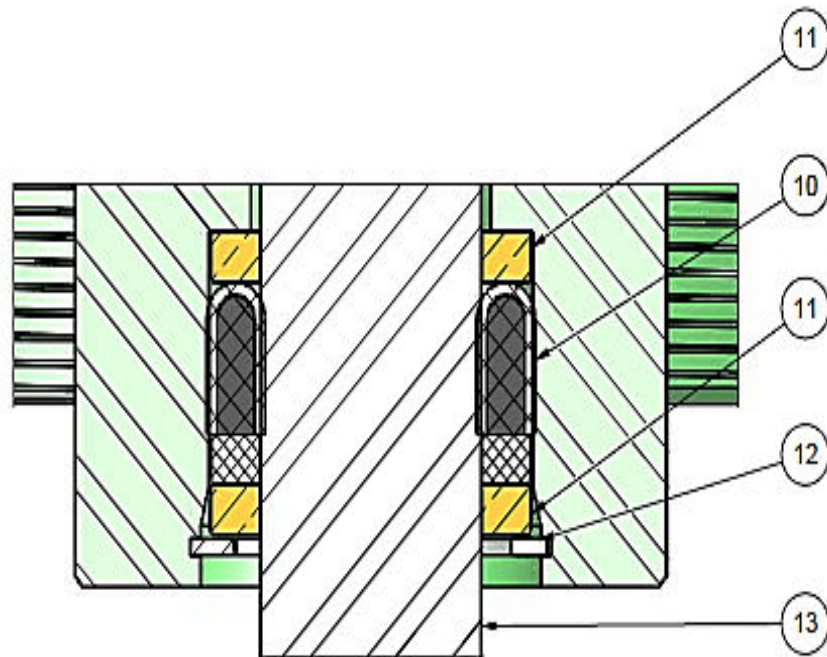
Exploded View - 3" 1502 TOPWORKS, Adjustable Choke Valve



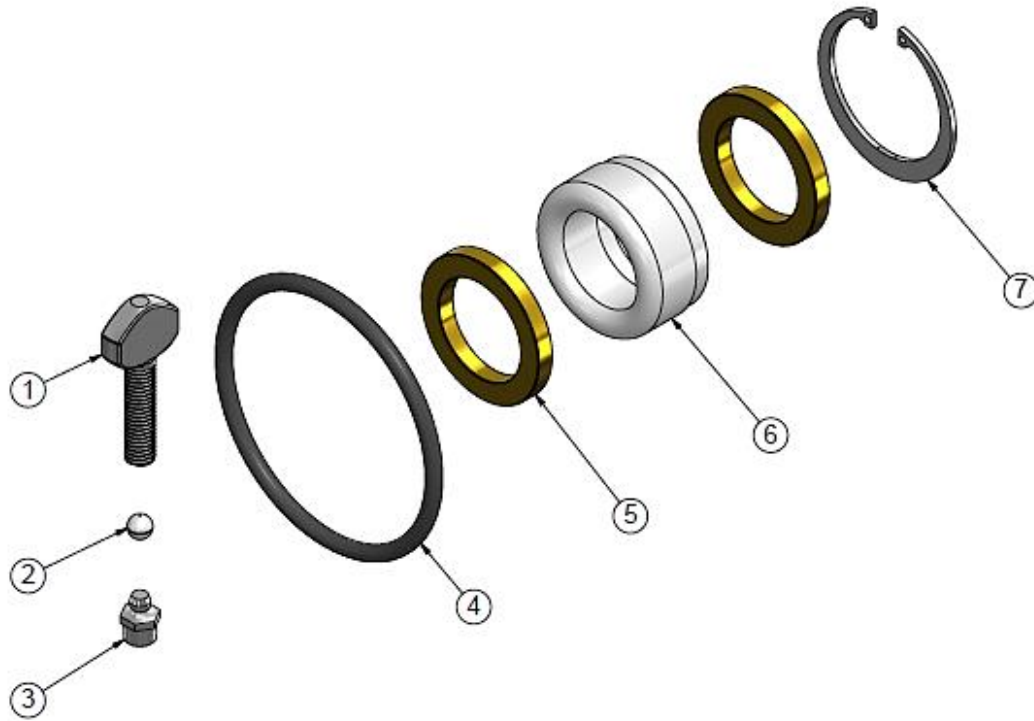
Parts Listing - 3" 1502 TOPWORKS, Adjustable Choke Valve

Item	Qty	Description	Part # Sour (H ₂ S)	Part # Standard
1	1	Nyloc Nut, 5/8-11	NYLOCNUT 0.6250-11-D-N	NYLOCNUT 0.6250-11-D-N
2	1	Flat Washer - 5/8	FW 0.625	FW 0.625
3	1	Hand Wheel	AC3HANDLE	AC3HANDLE
4	1	Indicator, 3" Adjustable Choke	AC3INDIC	AC3INDIC
5	1	Wing Nut Body	CH3NUT	CH3NUTSTD
6	1	*Bonnet - 3in	AC315TOPWORKS	AC315TOPWORKSSTD
7	1	Grease Fitting - 1/8 NPT Str.	ACGREASEFTG	ACGREASEFTG
8	1	Ball - 2in Adjustable Choke	ACBALL	ACBALL
9	1	Thumbscrew, 3" Adj. Choke	AC3TSCREW	AC3TSCREW
10	1	Packing Kit - 3in Adjustable Choke	AC3PKG	AC3PKG
11	2	Junk Ring Body	AC3JUNKRING	AC3JUNKRING
12	1	Internal Snap Ring, 3" Adj. Choke (5000-212)	AC3ISRING	AC3ISRING
13	1	Stem, Choke -2in Max H2 Alloy Steel with Tungsten Carbide Tip (3in Choke Valves)	ACST2TC	ACST2TCT
15	1	O-Ring 340	OR-H80-340	OR-H80-340

* These items are not sold separately

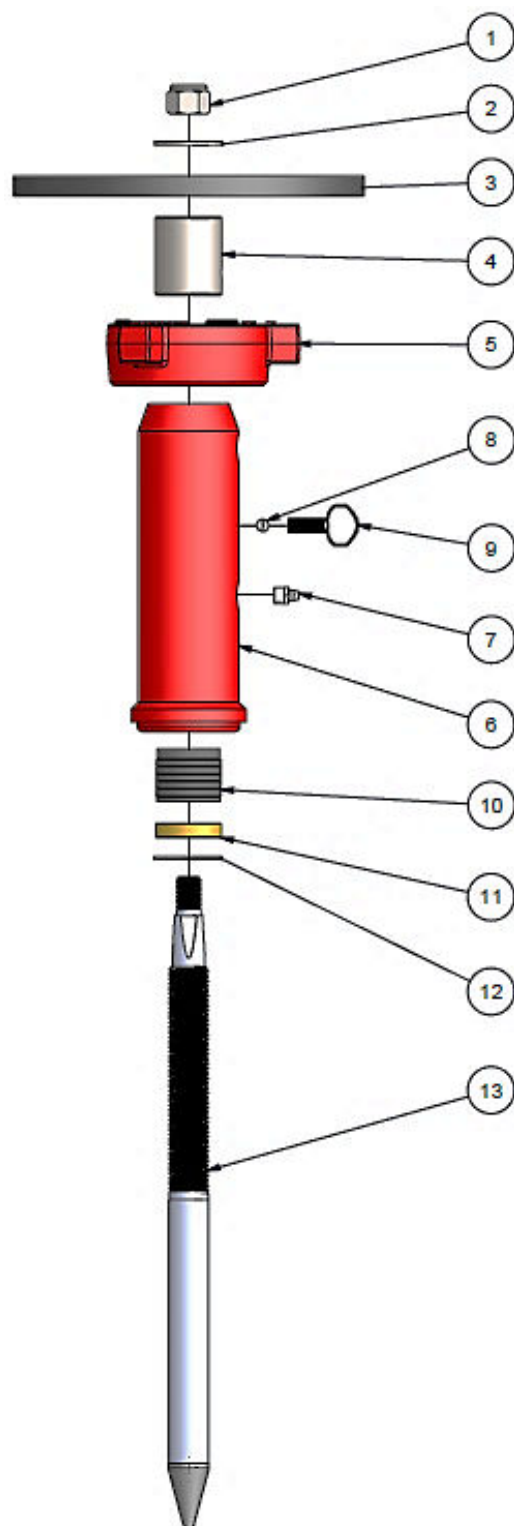


Major Repair Kit Parts Listing - 3" 1502 TOPWORKS, Adjustable Choke Valve



Item	Qty	Description	Part # Sour (H ₂ S) and Standard
		Major Repair Kit	ACRK315MAJ
1	1	Thumbscrew, 3" Adj. Choke	AC3TSCREW
2	1	Ball - 2in Adjustable Choke	ACBALL
3	1	Grease Fitting - 1/8 NPT Str.	ACGREASEFTG
4	1	O-Ring 340	OR-H80-340
5	2	Junk Ring	AC3JUNKRING
6	1	Packing Kit - 3in Adjustable Choke	AC3PKG
7	1	Internal Snap Ring, 3" Adj. Choke (5000-212)	AC3ISRING

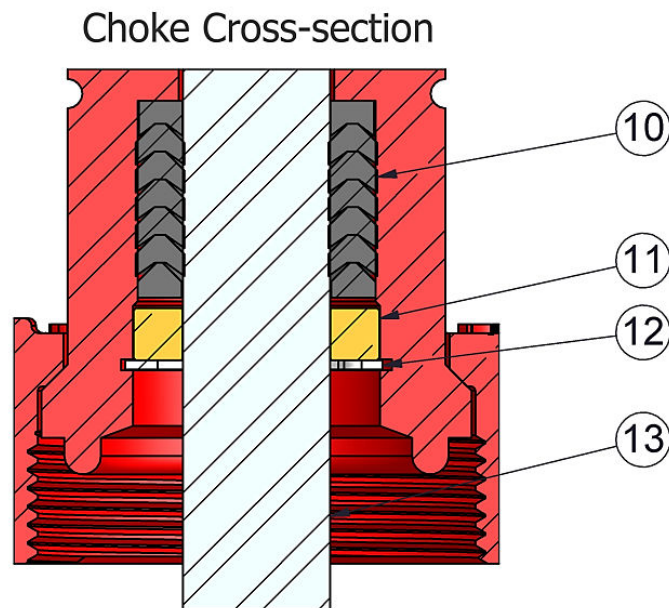
Exploded View - 2" 602 TOPWORKS, Adjustable Choke Valve



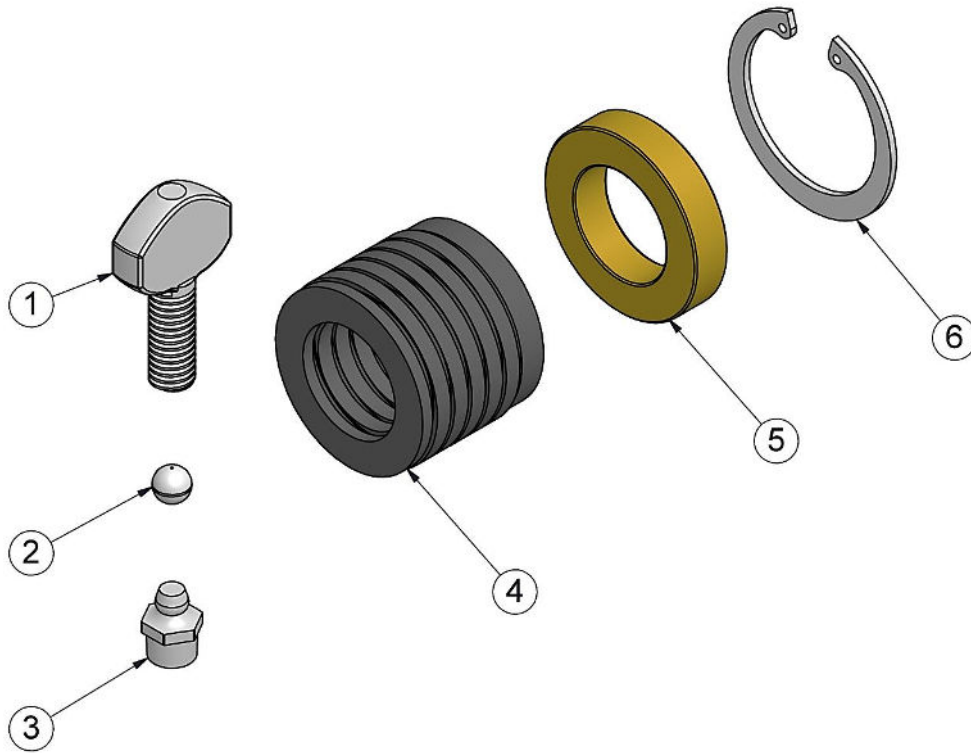
Parts Listing - 2" 602 TOPWORKS, Adjustable Choke Valve

Item	Qty	Description	Part #: Sour (H ₂ S)
1	1	5/8" Nyloc Nut	NYLOCNUT 0.6250-11-D-N
2	1	5/8" Flat Washer	FW 0.625
3	1	Handle Body	AC26HANDLE
4	1	Indicator - 2" Choke	AC2INDIC
5	1	Choke Nut Body	CH26NUT
6	1	*Bonnet Body	AC26FINBON
7	1	Grease Fitting 1/8" NPT	ACGREASEFTG
8	1	Ball 2" Choke	ACBALL
9	1	Thumbscrew - 2" Choke	AC2TSCREW
10	1	Packing Kit - 2" Fig 602	AC26PKG
11	1	Junk Ring	AC26JUNKRING
12	1	Internal Snap Ring - 2" Fig 602	AC26ISRING
13	1	Stem - 2" Fig 602 Choke	ACST34TC

* These items are not sold separately



Major Repair Kit Parts Listing - 2" 602 TOPWORKS, Adjustable Choke Valve



Item	Qty	Description	Part #: Sour (H ₂ S)
		Major Repair Kit	ACRK26MAJ
1	1	Thumbscrew - 2" Choke	AC2TSCREW
2	1	Ball 2" Choke	ACBALL
3	1	Grease Fitting 1/8" NPT	ACGREASEFTG
4	1	Packing Kit - 2" Fig 602	OR-H90-343
5	1	Junk Ring	AC26JUNKRING
6	1	Internal Snap Ring - 2" Fig 602	AC26ISRING

Note: AMSOIL synthetic multi-purpose grease and Nikal (anti-seize compound) are used in this procedure.

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3. Lubricate the threads and sealing surface of the **Stem (#13)** with **synthetic multi-purpose grease**.



4. Slide the **Junk Ring (#11)** over the threaded end of the **Stem** and up against the shoulder.



5. Slide the first **U-Cup Seal** of the **Packing Kit (#10)** over the threaded end and up against the **Junk Ring** (black rubber **O-Ring** of the **U-Cup Seal** facing the carbide tip).



Note: The **Packing Kit** can be installed as one unit. When doing so be careful not to scratch the seals against the threads. If you install the **Packing Kit** all together proceed to step 8.

6. Slide the **Nylon Spacer** of the **Packing Kit** over the threaded end and up against the first **U-Cup Seal**.



7. Slide the second **U-Cup Seal** onto the **Stem** and up against the **Nylon Spacer** (black rubber **O-Ring** of the **U-Cup Seal** facing the carbide tip).



8. Slide the **Stem Guide (#14)** onto the **Stem** up against the **Packing Kit**.



9. Coat the **Packing Kit**, **Junk Ring** and **Stem Guide** with **synthetic multi-purpose grease**.



10. Install the **Stem Assembly** into the **Bonnet Body (#6)** by turning the **Stem clockwise** until the threads are engaged or until a portion of the **Stem** is visible at the other end of the **Bonnet**.



11. Using a bench-vise, temporarily attach the **Hand Wheel (#3)** to the **Stem**. Rotate the **Hand Wheel counter-clockwise** to fully seat the **Junk Ring**, **Packing Kit**, and **Stem Guide** in the **Bonnet Body**.



- 12.** Tap the **Junk Ring** lightly to ensure that it is below the groove in the pocket of the **Bonnet**.



- 13.** Install the **Internal Snap Ring** (#12) into the groove.

Remove from bench-vise.



- 14.** Slide the **Wingnut** onto the **Bonnet Body**.



15. Apply **anti-seize compound** on the threads of the **Grease Fitting (#7)** and screw it into the 1/8 NPT threaded hole of the **Bonnet Body**. DO NOT over tighten.



16. Turn the **Bonnet Body** around and insert the **Nylon Ball (#8)** into threaded hole.



17. Apply **anti-seize compound** on the threads of the **Thumbscrew (#9)** and screw it **clockwise** until it barely touches the ball - DO NOT tighten.



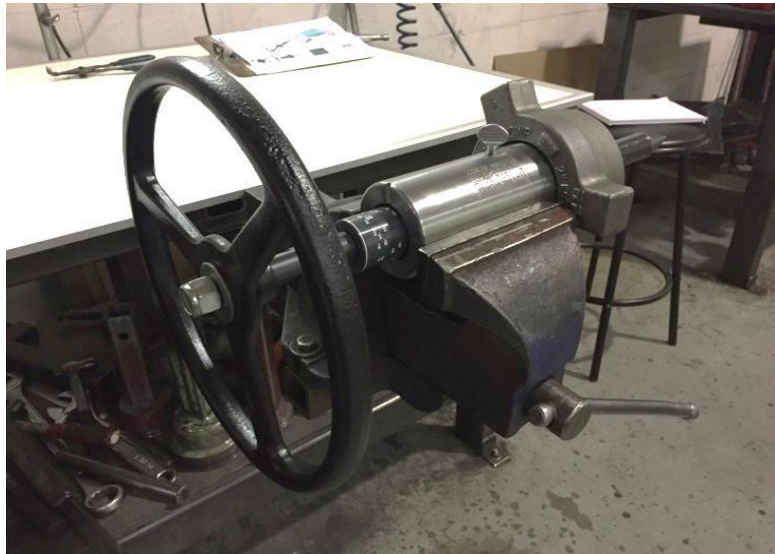
Note: **Thumbscrew** is utilized to lock the system during actual application in the field.

18. Slide the **Indicator (#4)** onto the **Stem** - keep it loose.

Note: The **Indicator** is set when the **TOPWORKS** is installed onto a **Positive Choke Body** and is adjusted during field operations.



19. Attach the **Hand Wheel (#3)** and secure it with the **Flat Washer (#2)** and **Nyloc Nut (#1)**.



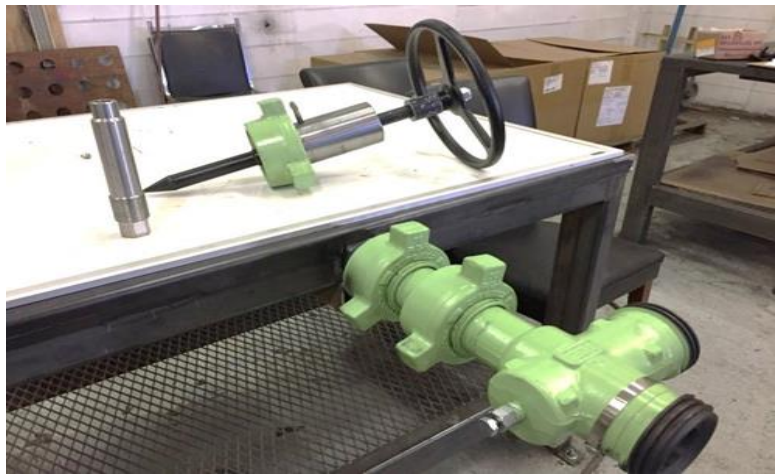
General Installation Procedure - TOPWORKS to a Positive Choke Body

Pictorial - 2" 1502 TOPWORKS to a 2" 1502 Positive Choke Body

It is important that the workstation is clean and free of any contaminants such as metal shavings, dirt, etc. Do not sand or de-burr any items while at the assembly workstation.

Note: Nikal (anti-seize compound) is used in this procedure.

1. Acquire the **Positive Choke Body** and the **Choke Seat/Bean** for the intended application. Clean and inspect all parts for any damage (i.e. dents, scratches, sharp edges and burrs), particularly on the sealing areas and threads prior to assembly.



2. Apply **anti-seize compound** on the threads of the **Choke Seat/Bean**.



3. Thread the **Choke Seat/Bean** **clockwise** into the **Positive Choke** with an extended socket wrench - hand tight only.



4. Apply an **anti-seize compound** on the threads of the **Positive Choke Body**.

Note: Before attaching the **TOPWORKS**, retract the **Stem** fully into the **Bonnet Body** to prevent the **Stem's** carbide tip from contacting the **Choke Seat**.



5. Attach the **TOPWORKS Assembly** - tighten the **Wingnut** until snug.



6. Slightly engage the **Stem's** carbide tip against the **Choke Seat** or **Bean** by turning the **Hand Wheel** **clockwise**.



7. Set the **Indicator** to zero (0) through the notch on the **Bonnet Body**.



8. Tighten **Set Screw** of the **Indicator** through the unthreaded hole on the opposite side of the **Bonnet Body**.



Greasing Instructions

It is recommended to grease the **TOPWORKS, Adjustable Choke Valve** with **synthetic multi-purpose grease** after every application.

Grease the **TOPWORKS, Adjustable Choke** in both OPEN/CLOSE positions. Do this at least twice to ensure that the threads and sealing surface of the **Stem** are fully greased. Be careful when closing (tightening) the **Choke Stem** as over tightening can result in damage to the **Choke Seat**, or **Stem**.

Seat Testing of Adjustable Chokes

Please note that the adjustable choke is not designed to be a positive shutoff valve. Fully closing the stem onto the seat will not stop flow and therefore a "Seat Test" which is done on plug valves cannot be done on adjustable chokes. As noted above, forcing the stem into the seat to attempt to gain a complete seal can result in damage to the choke.

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