



Model: See Affected Models	Aug. 13, 2019
Serial #: N/A	
Product Bulletin # TDS-170 v 2.0	

Top Drive Blower Upgrade

Canrig has discontinued production of the P10052-X series blowers which are used on 1250AC and 1275AC top drives. These blowers have been replaced with a new blower with an improved airflow in comparison with the previous design.

Affected Models

Top drive models: 1250AC-681, 1275AC-681, 1275AC-865 using the legacy P10052-X series blower shown on Figure 1 on page 2.

New Blower Features

- Improved air flow
- Improved motor mounting with U-bolts to withstand rough drilling
- Additional bracing of the blower motor which utilizes pins for easy servicing
- Mounting frame included with the blower assembly for easier removal and installation.
- Retrofits into legacy 1250AC/1275AC top drives

Replacement Information

The blower assemblies listed on Table 1 are currently available for the blower upgrade. The blower assembly kits vary depending on the blower’s motor voltage.

Table 1: Blower Assembly Options

Old Blower Part No.	New Blower Part No.	New Blower Description	Motor P/N & Description
P10052-EX P10052	P10576-9 (Complete Blower Replacement)	BLOWER ASSY, 575V, 60Hz, 15HP, 55C, Explosion Proof Includes: <ul style="list-style-type: none"> • Mounting A-frame • Blower intake 	E18761 MOTOR, AC, 15 HP, 575V, 3600 RPM, 55C, Ex (Replaceable part)
	AY21845 (Complete Blower Replacement with Support Arm Assembly)	Includes: <ul style="list-style-type: none"> • Blower P10576-9 (Replaceable part) • Blower support arm assembly/modification (optional and a one-time only installation) • Fasteners and safety hardware 	
P10052-460 P10052-460-55	P10576-5 (Complete Blower Replacement)	BLOWER ASSY, 460V, 60Hz, 15HP, 55C, Explosion Proof Includes: <ul style="list-style-type: none"> • Mounting A-frame • Blower intake 	E18762 MOTOR, AC, 15 HP, 480V, 3600 RPM, 55C, Ex (Replaceable part)
	AY21845-5 (Complete Blower Replacement with Support Arm Assembly)	Includes: <ul style="list-style-type: none"> • Blower P10576-5 (Replaceable part) • Blower support arm assembly/modification (optional and a one-time only installation) • Fasteners and safety hardware 	

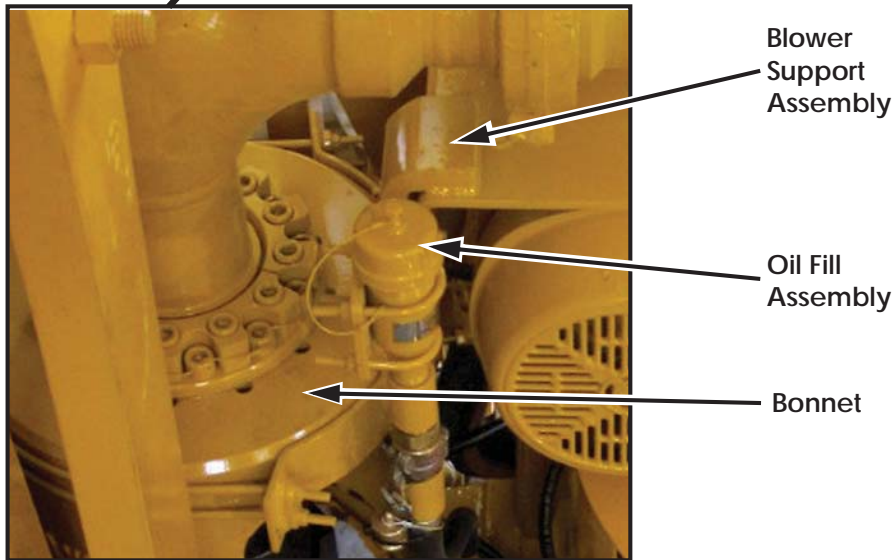
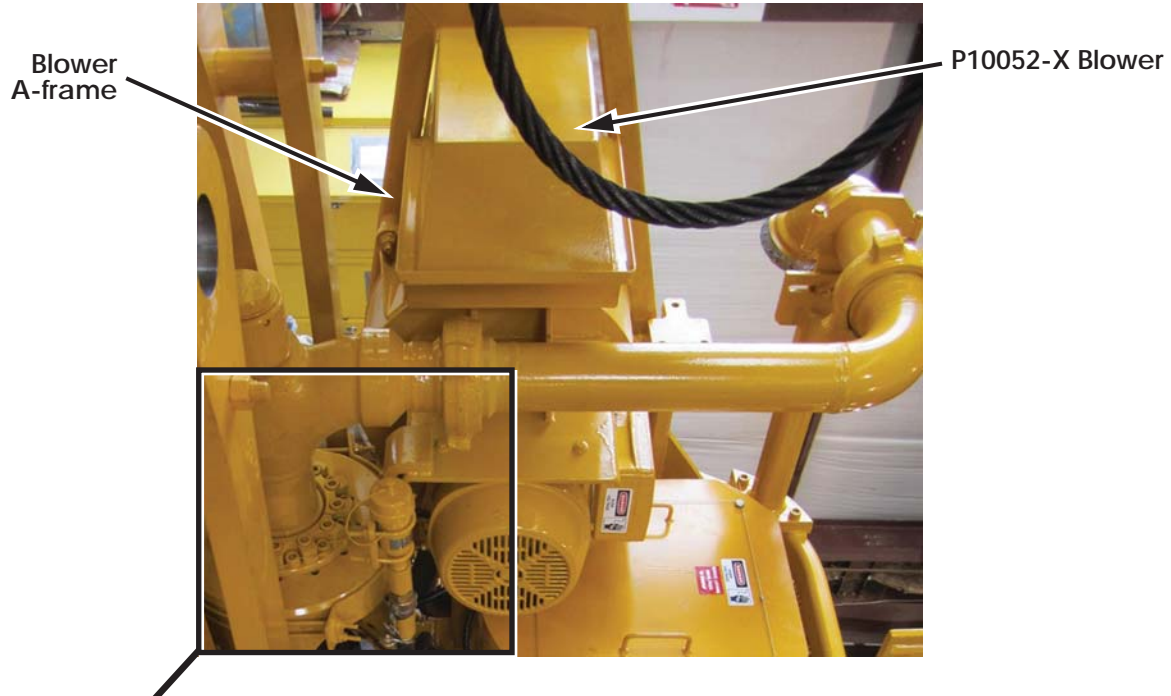


Figure 1: Original Blower (P10052-X) Configuration

Procedure

Follow steps below to remove existing top drive blower and install new upgraded blower.

Remove Original Blower, Blower Support, and Oil Fill Assembly

Preparation

1. Lock-out/tag-out equipment to prevent unintended movement and release of energy.
2. Use appropriate precautions and processes to prevent falls and dropped objects.
3. Remove the gooseneck or mudline assembly to provide easier access to the blower.

Blower Removal

1. To remove the existing blower, add a shackle to the lug on top of the blower A-frame to connect a sling or strap. Also, install a strap around the bottom rear of the motor to support the blower by using a 3-point lifting procedure with a winch or crane as shown on Figure 2. The 3-point lift will help balance the load of the blower.

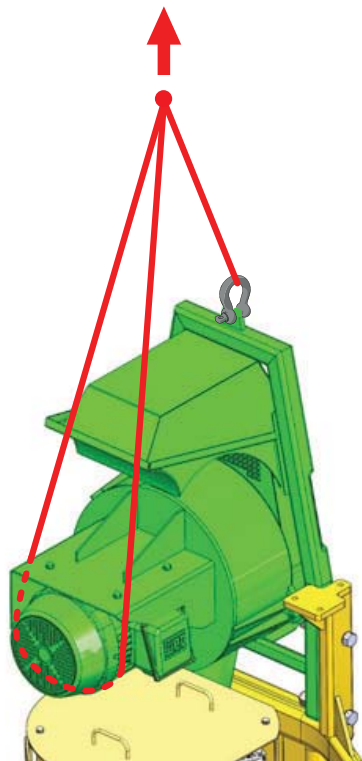


Figure 2: Lift blower assembly using slings and straps as shown

2. Remove (2) 1-8UNC x 3" Lg. bolts and (2) 1-8UNC locknuts that fasten the blower A-frame to the top drive guard from the front as shown on Figure 3.



Note: Canrig recommends to replace removed fasteners with new fasteners.

3. Remove (2) 1-8UNC x 7" Lg. bolts and (2) 1-8UNC locknuts that fasten the blower A-frame to the top drive guard from the side as shown on Figure 3.



Note: Canrig recommends to replace removed fasteners with new fasteners.

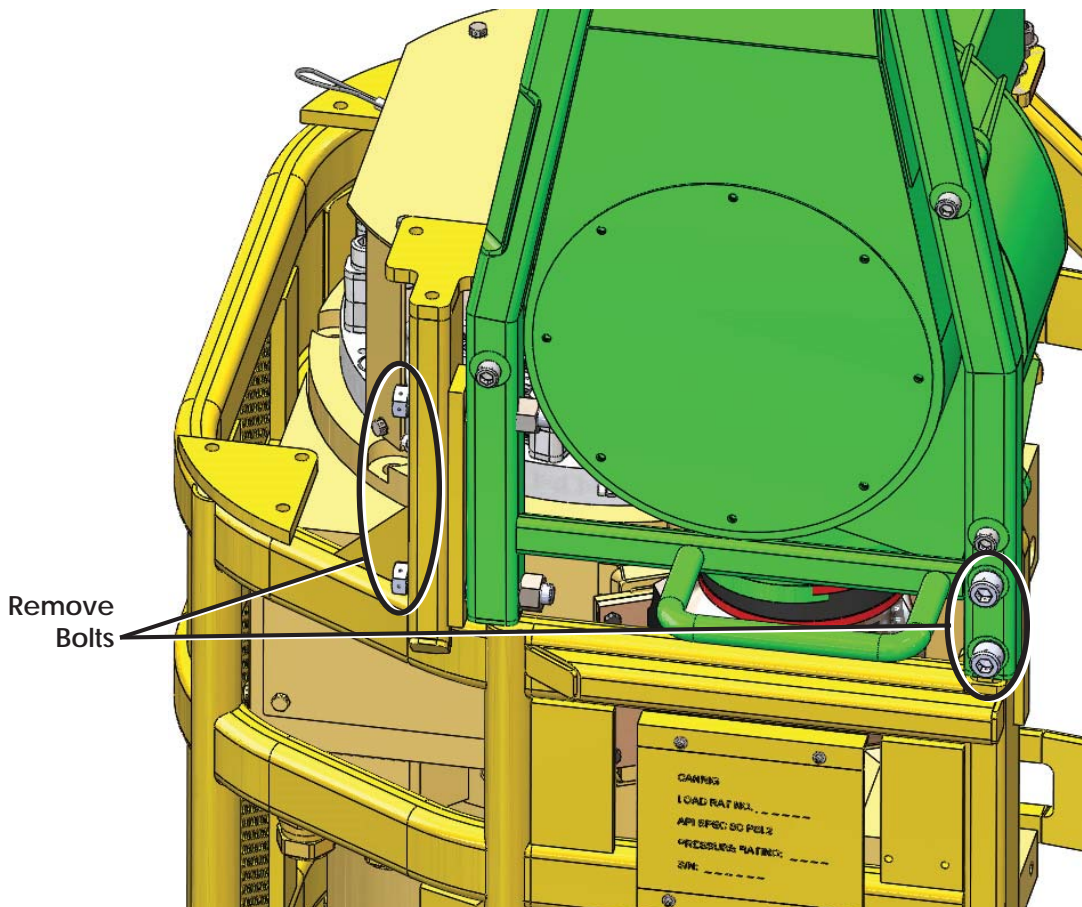


Figure 3: Remove bolts from blower A-frame

4. Disconnect electrical cables from the motor blower J-Box.
5. Disconnect the blower outlet from the motor inlet and remove the neoprene sleeve.

- Remove the fasteners attaching the blower support mount to the blower motor mount. See Figure 4.



Note: The oil fill assembly has been relocated for better accessibility. Removal of the blower support mount and oil fill assembly are optional.

- Remove the blower support mount U-bolts as shown on Figure 4, only if the new brace will be installed.
- Remove the fasteners attaching the oil fill assembly.

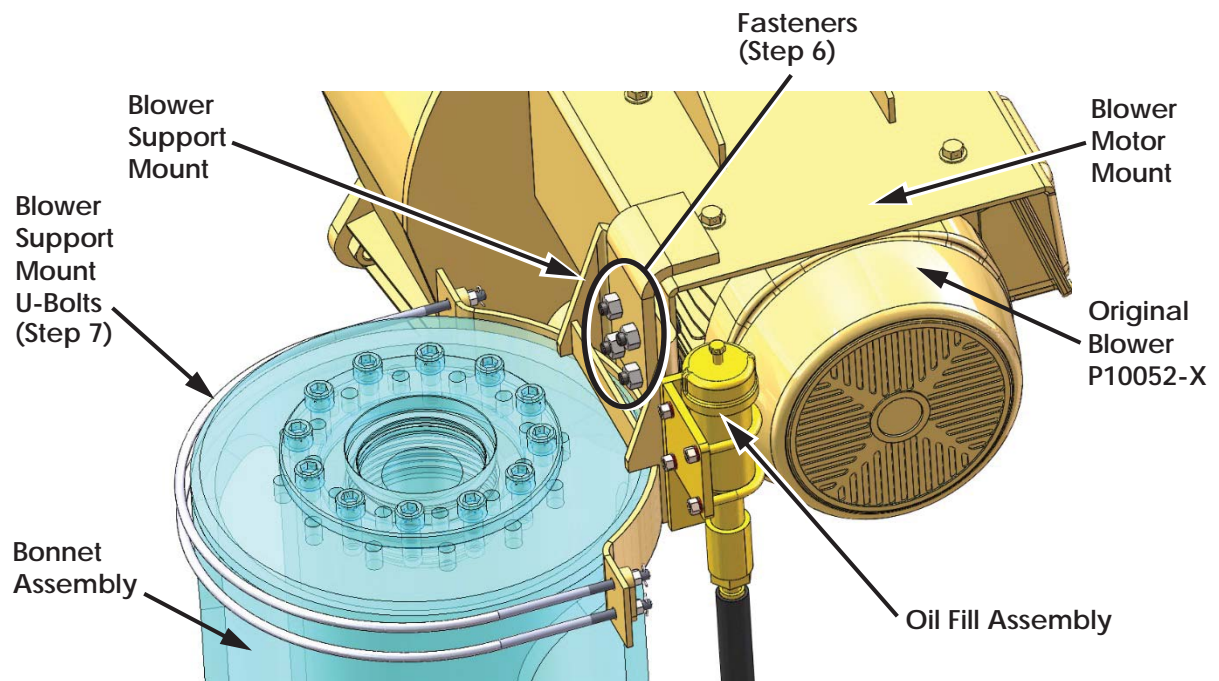


Figure 4: Original Blower Support Plate and Fasteners

- Use the winch to lift the blower assembly off of the top drive and lower it to a safe location.

New Blower Assembly Installation

Preliminary Notes

A complete installation of the new blower assembly (P10576-X) is shown on Figure 5.

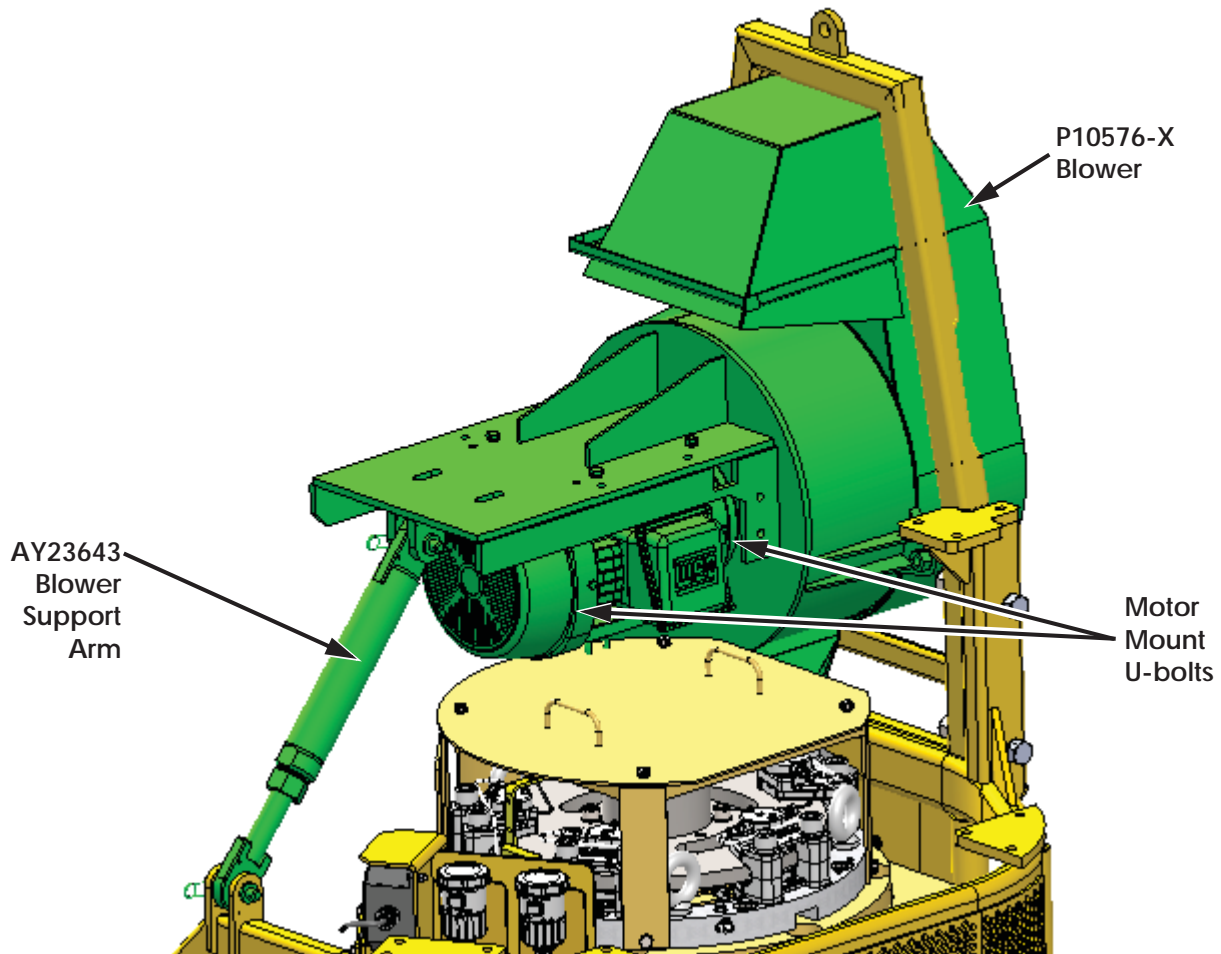


Figure 5: New Blower Assembly after Installation



Note: The new blower protrudes approximately 6 ½" further out than the P10052-X style blower, but can retrofit to all relative model applications. See Figure 6 for reference dimension. Some minimal welding is required to the top drive guard to mount the blower support arm (AY23643). (Initial install only).

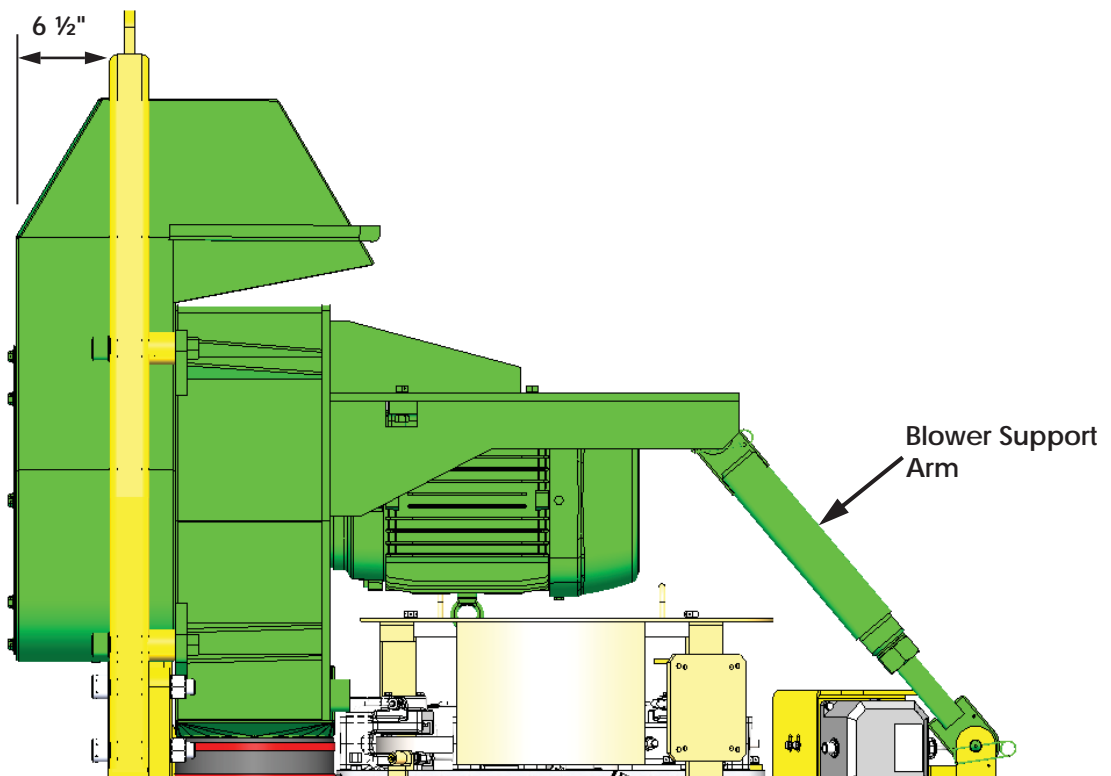


Figure 6: New Blower Assembly after Installation

Warning! To secure components and prevent objects from dropping the following guidelines must be followed:



- Replace all fasteners with grade 8 fasteners and torque to specifications indicated in this document.
- Use only Grade C Stover nuts or equivalent.
- Stover locknuts should not be used more than 4 times.
- Ensure all components are safety wired to the specifications indicated in this document.
- Use only Loctite 242 or equivalent on capscrew and mating threads.



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Blower Assembly Kit Components

Table 2: AY21845 and AY21845-5 Blower Assembly Kit Components

Item	Qty.	Part No.	Description
1	1	P10576-X	BLOWER ASSY
3	2	DT33867	CAPSCR, HEX SOC, 1-8UNC X 5.50- MOD
4	2	DT33868	CAPSCR, HEX HD, 1-8UNC X 7.00- MOD
6	4 PAIR	LW-1000-NL-SP	LOCKWASHER, 1-SP, NORD-LOCK
8	4	LN-1000NC-GR8	LOCKNUT, 1-8UNC, GR8, STOVER
9	14FT	M21-2000-010	WIRE ROPE, 1/16 IN, 7 X 7, STAINLESS
10	10	M19-3006-010	FERRULE, 1/16, OVAL, ALUMINUM
13	2	DT33560	PAD EYE, GUARD, BLOWER SUPPORT
14	1	AY23643 *See Note	SUPPORT ARM, BLOWER ASSY
R01	48IN	S07-1001-010	WEATHERSTRIP, 1/4 THK X 1 W, FOAM, ADHESIVE

* **Note:** See Table 3 on page 14 for blower support arm parts list.

Blower Installation

1. To install the new blower, add a shackle to the lug on top of the blower A-frame to connect a sling or strap. Also, install a strap around the bottom rear of the motor to support the blower by using a 3-point lifting procedure with a winch or crane as shown on Figure 7. The 3-point lift procedure will help balance the load of the blower.
2. Lift the new blower assembly and place it on its corresponding position on the top drive.

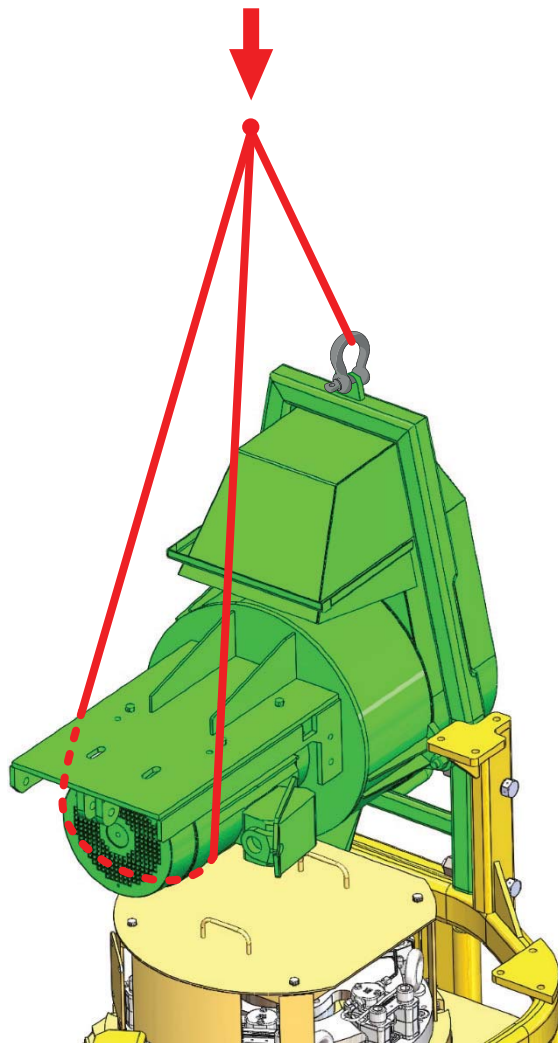


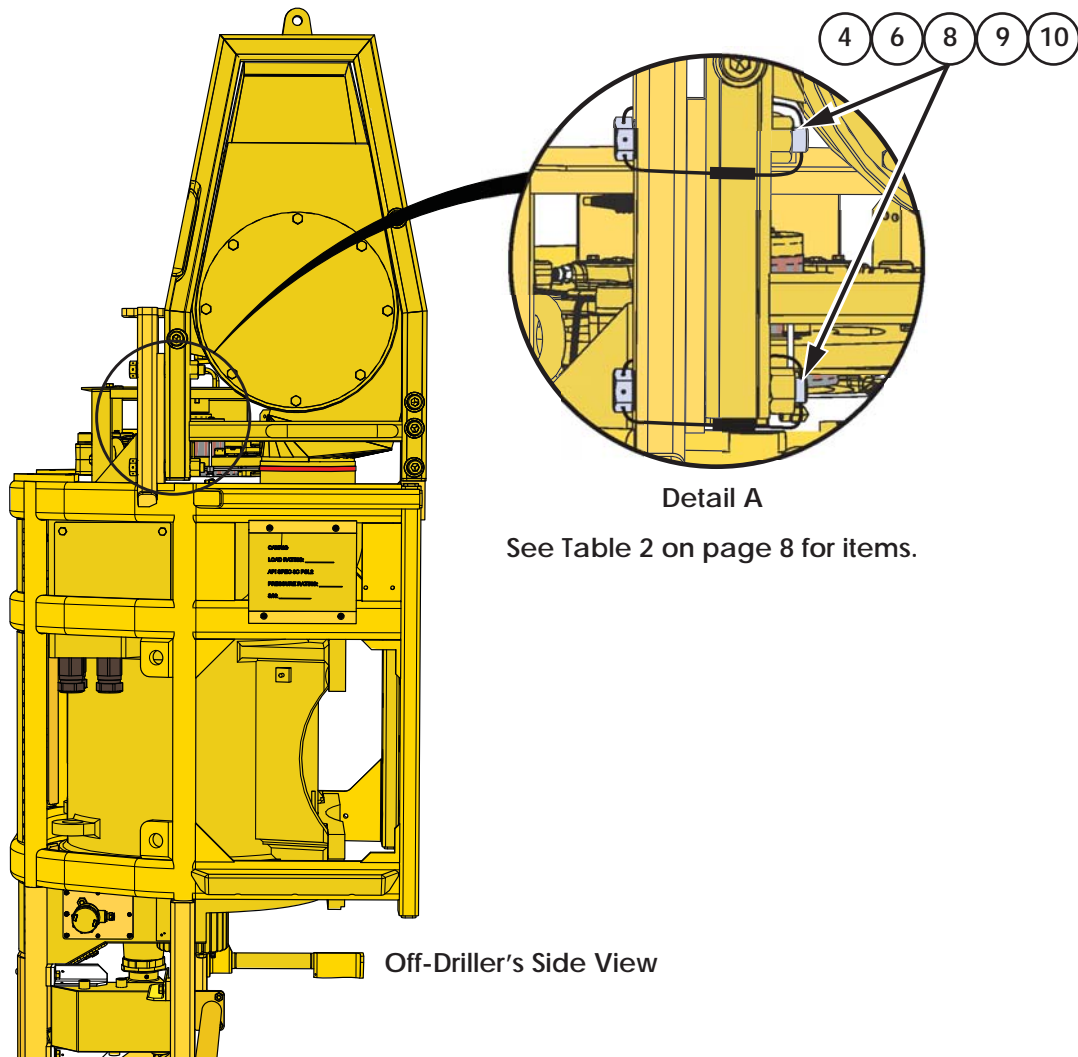
Figure 7: Lift new blower assembly using slings as shown

- Install item 1 (P10576-X) Blower to top drive guard with fastening hardware (items 3, 4, 6, 8, 9 and 10) as shown on Detail A on Figure 8 and Detail B on Figure 9 on page 11.



Note: Canrig recommends to replace removed fasteners with new fasteners.

- Torque item 4 (DT33868, 1-8UNC x 7" long capscrew) to 848 ft-lbs. Install retaining wire, item 9 (M21-2000-010), through head and shank of the fasteners as shown on Figure 8, Detail A and crimp with a ferrule, item 10 (M19-3006-010) without any slack. Retaining wire must wrap around the square tubing of the top drive guard as shown on Figure 8, Detail A to prevent objects from falling in the event of a failure of the fasteners. See Figure 8 for reference.



Detail A
See Table 2 on page 8 for items.

Figure 8: Detail A - ODS Side View

- Torque item 3 (DT33867, 1-8UNC x 5 1/2" long capscrew) to 848 ft-lbs. Install retaining wire item 9 (M21-2000-010) through head and shank of the fasteners as shown on Figure 9, Detail B and crimp with item 10 (M19-3006-010) without any slack. Retaining wire must wrap around the square tubing of the top drive guard as shown on Figure 9, Detail B to prevent objects from falling in the event of a failure of the fasteners. See Figure 9 for reference.



Note: Canrig recommends to replace removed fasteners with new fasteners.

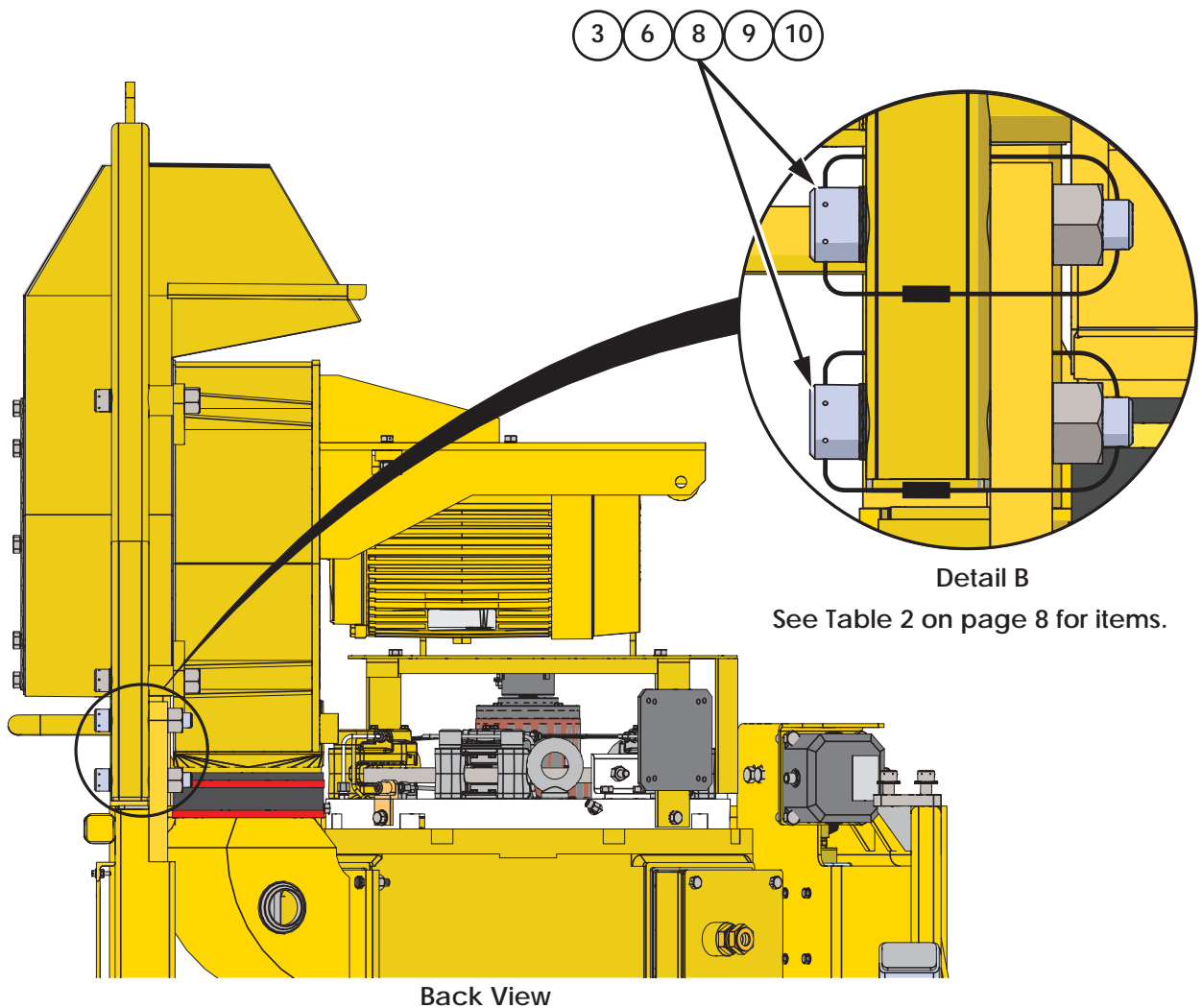


Figure 9: Detail B - Back View

New Blower Support Arm Installation Procedure (Optional)

Follow steps below to install the new top drive blower (P10576-X). Refer to Table 2 on page 8 for items indicated on Figure 10.

1. Prepare area for welding. Clean area (see item 13 on Figure 10) and remove paint.
2. Preheat the joint to be welded to 400°F (using a rose-bud/torch is acceptable). To verify temperature, use temperature crayon to ensure proper heat distribution of the entire location to be welded.
3. Weld item 13 (DT33560) pad eyes, 2 each, to the top drive guard. Location is shown on Figure 11 on page 13.

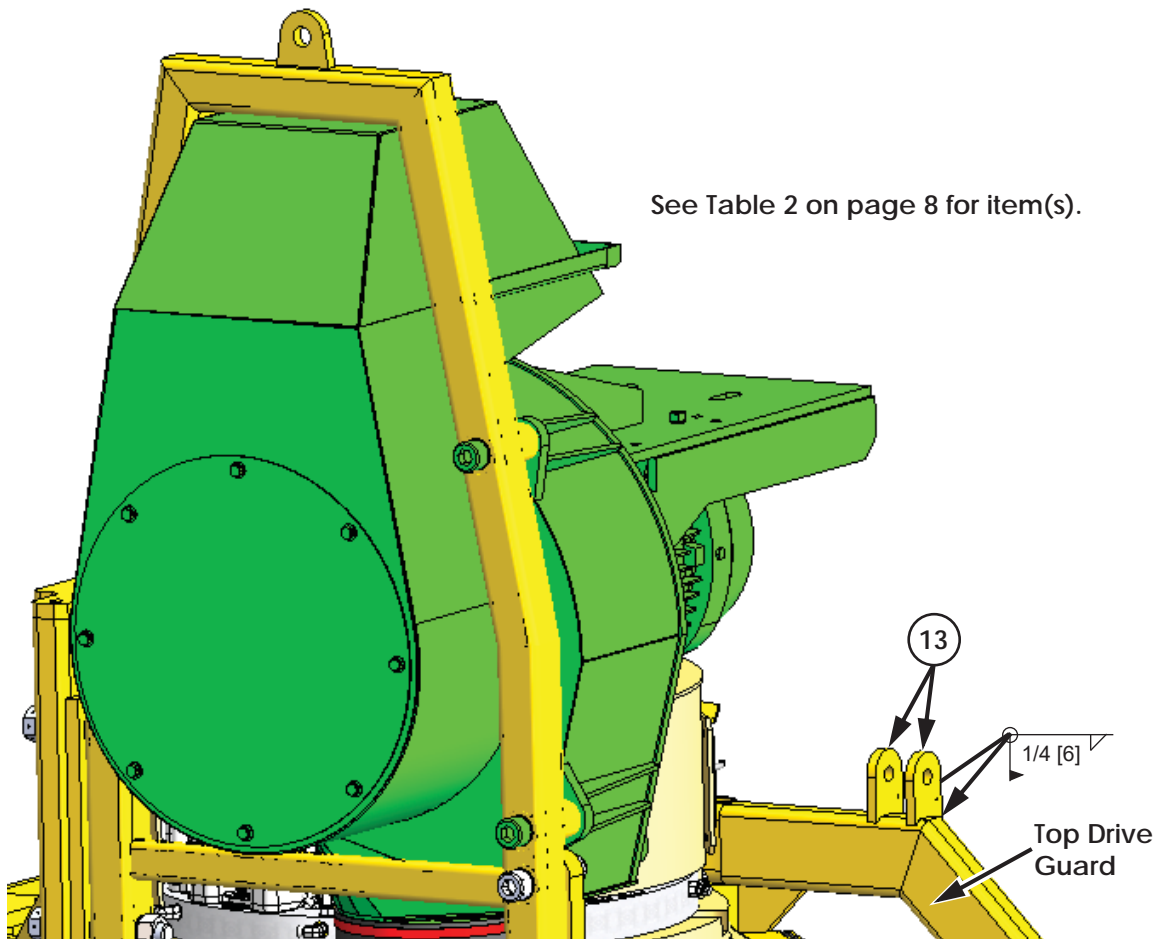


Figure 10: Welding pad eyes – item 13 (2 each) – to Top Drive Guard

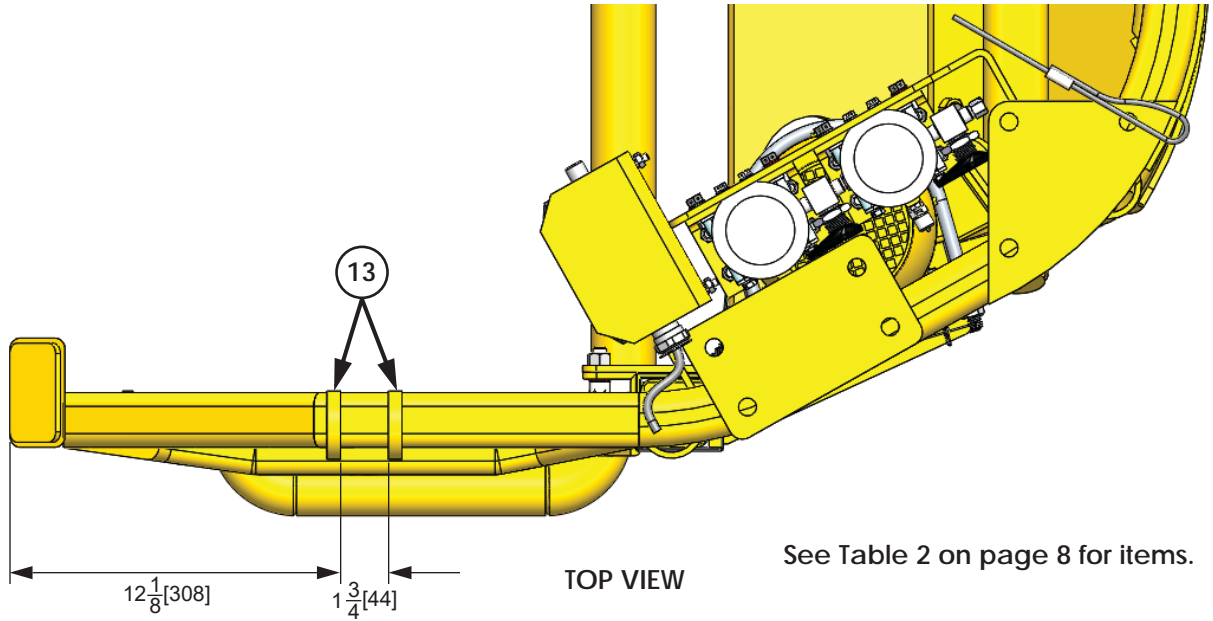


Figure 11: Top View for Step 3 on page 12.



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Blower Support Arm Components

Table 3: AY23643 Support Arm, Blower Assembly Components

Item	Qty.	Part No.	Description
1	1	DT23331	MAIN BODY, BLOWER SUPPORT ARM
2	1	DT23332	THREADED EYE, BLOWER SUPPORT ARM
3	1	HN-1500NC-GR8	HEX NUT, 1 1/2-6UNC, GR8
4	2	DT33860	CLEVIS PIN, SUPPORT ARM, BLOWER ASSY
5	2	M24-2001-010	SAFETY PIN
6	2	M10197	FERRULE, 1/16, STOP, ALUMINUM
7	2FT	M21-2000-010	WIRE ROPE, 1/16 IN, 7 X 7, STAINLESS
8	1 PAIR	LW-1500-NL	LOCKWASHER, 1 1/2 NORD-LOCK

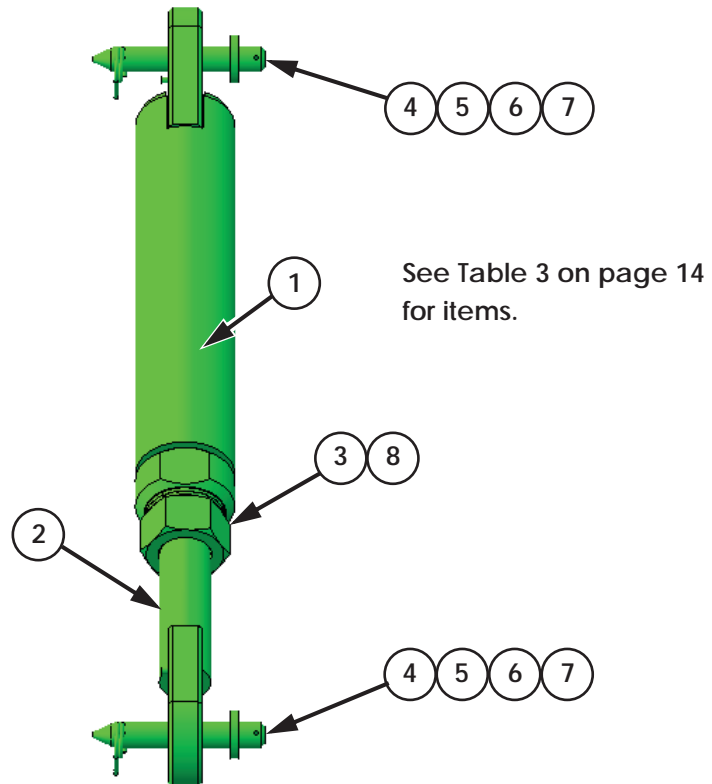


Figure 12: Blower Support Arm

1. Install Blower Support Arm (AY23643) with fastening hardware (items 4, 5, 6, and 7) as shown on Figure 13 and Table 3 on page 14.
2. Add lockwasher, item 8 (LW-0750-NL-SP) and torque fasteners to 350 ft-lbs. To prevent a potential for dropped objects, install item 7 (M21-2000-010) retaining wire, through the head of the fasteners and crimp with ferrules, item 6 (M10197), as shown on Figure 13 on page 16.
3. Add retaining wire item 7 (M21-2000-010) and crimp with ferrules, item 6 (M10197) in the following location(s) as shown on Figure 13 on page 16:
 - a. between the support arm and blower motor mount
 - b. between the support arm pin and main body or threaded support arm

See Table 3 on page 14 for items.

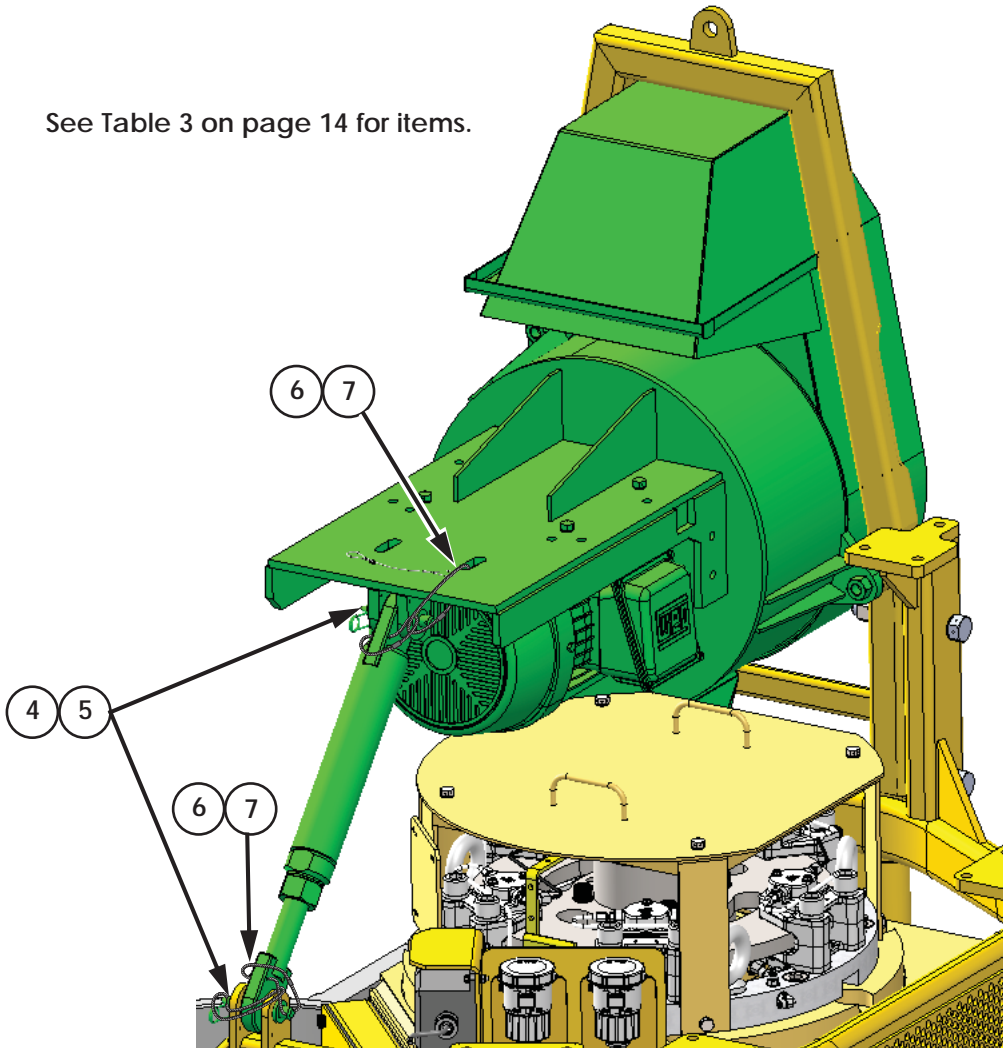
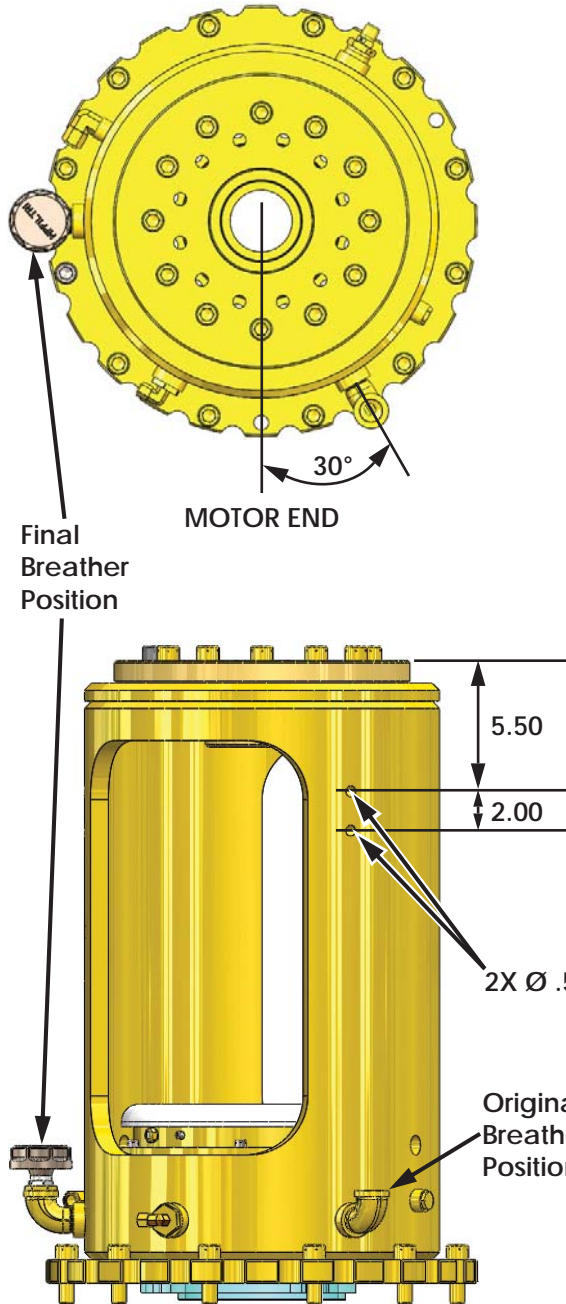


Figure 13: Blower Support Arm Installed

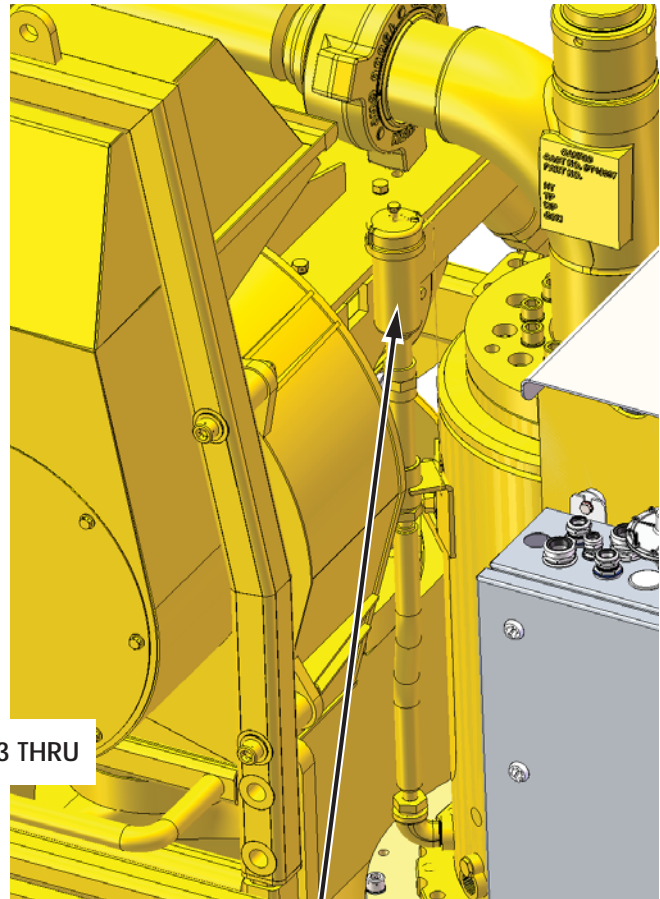
4. Remove slings and straps used to lift the blower assembly.

Oil Fill Assembly Relocation Procedure (Optional, see page 5).

1. Drill two 0.563 holes in the bonnet before installing the oil fill assembly as shown on Figure 14.
2. Remove breather from current position and reinstall on its final position. See Figure 14.



Note: The oil fill assembly may be relocated for better accessibility. Relocation of the oil fill assembly is optional.



Final (Optional) Oil Fill Assembly Position

Figure 14: Two New Holes Location

Pre-assemble the Oil Fill Assembly

3. Assemble the following items together, see Figure 15 and Table 4 on page 19:

a. Item 1: Cap	b. Item 2: Swage	c. Item 3: Coupling	d. Item 4: Nipple
e. Item 5: Mount	f. Item 6: Nipple	g. Item 7: Hose	h. Item 6: Nipple

See Table 4 on page 19 for items.

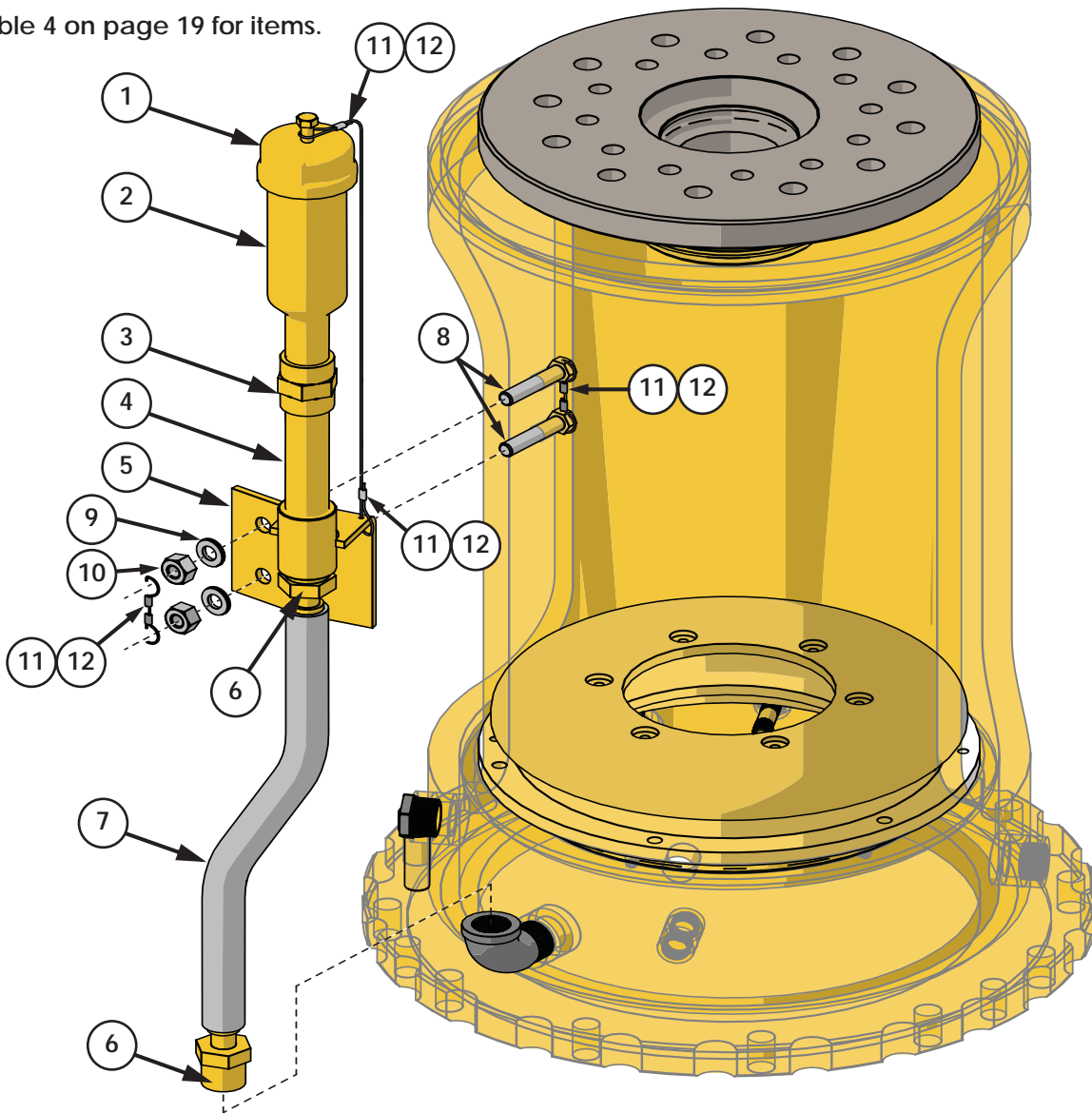


Figure 15: Pre-assembly of the Oil Fill Assembly



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4. Add safety restraint to item 1 (692-44-0) Cap by wrapping item 11 (M21-2000-010) Wire Rope around the welded fastener on the top of item 1 (694-44-0) Cap and crimp with item 12 (M19-3006-010) Ferrule. Also route item 11 (M21-2000-010) Wire Rope through the hole in item 5 (DT36151) Oil fill Extender Mount and crimp with item 12 (M19-3006-010) Ferrule as shown on Figure 15 on page 18.



Note: Ensure item 11 (M21-2000-010) Wire Rope is tightly wrapped around the welded fastener on item 1 (692-44-0) Cap. Also allow for enough slack in item 11 (M21-2000-010) Wire Rope for item 1 (692-44-0) Cap to be unscrewed for filling of oil as shown on Figure 15 on page 18.

5. Lift the completed oil fill assembly and use the mount to attach it to the bonnet assembly as follows:
 - a. Install item 5 (DT36151) Oil Fill Extender Mount using a quantity of 2 item 8 (DT33888) Capscrews, item 9 (LW-0500-NL) Lockwashers, and item 10 (LN-0500NC-GR8) Locknuts.
 - b. Torque item 8 (DT33888) Capscrews which are 1/2-13UNC to 99 ft-lbs.
 - c. Add retaining wire (item 11, M21-2000-010, 1/16" Wire Rope) to the fasteners through heads and shank of item 8 (DT33888) Capscrews and crimp with item 12 (M19-3006-010) 1/16" Ferrules. See Figure 15 on page 18.

Table 4: Oil Fill Assembly Components

Item	Qty.	Part No.	Description
1	1	692-44-0	CAP, OIL FILL
2	1	F07-1010-010	SWAGE, SCH 80, 2 NPT x 1 NPT, A106
3	1	H15-140138-16-16	CPLG, HEX, 1 NPT
4	1	F08-1020-010	NIPPLE, STD, 1 NPT x 6.00, A120, BLACK
5	1	DT36151	MOUNT, OIL FILL EXTENDER
6	2	F10-1005-010	NIPPLE, HOSE, 1 IN NPT, COMBINATION
7	3FT	P10040	HOSE, AIR HOSE, 1 in
8	2	DT33888	CAPSCR, HEX HD, 1/2-13UNC x 2.50- MOD
9	2	LW-0500-NL-SP	LOCKWASHER, 1/2-SP NORD-LOCK
10	2	LN-0500NC-GR8	LOCKNUT, 1/2-13UNC, GR8, STOVER
11	2FT	M21-2000-010	WIRE ROPE, 1/16 IN, 7 x 7, STAINLESS
12	2	M19-3006-010	FERRULE, 1/16, OVAL, ALUMINUM

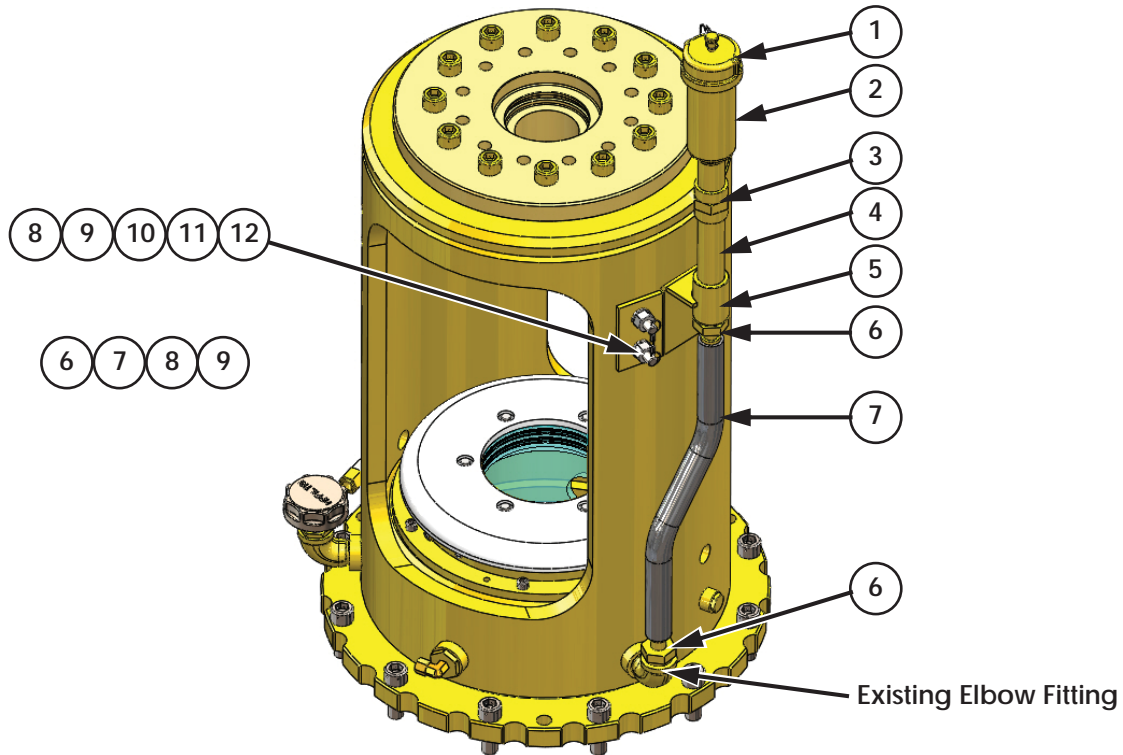


Figure 16: Complete Oil Fill Assembly

6. Install item 6 (F10-1005-010) Nipple into existing bonnet elbow fitting.
7. Connect item 7 (P10040) Hose to the item 6 (F10-1005-010) Nipple.
8. Connect electrical cables to the blower motor J-box.
9. Connect the blower outlet to the motor inlet and install the neoprene sleeve.
10. Install the gooseneck or mudline assembly if previously removed.
11. Remove lock-out/tag-out and test operation of the new blower.