

# CADMAN R70T Tractor Hydraulics Driven Compressor



**OPERATOR'S PARTS and MAINTENANCE MANUAL  
2006 EDITION**

**Cadman**  
**POWER EQUIPMENT**

*Limited*

AGRICULTURAL MACHINERY & IRRIGATION EQUIPMENT

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**PU-MAN-R70T**

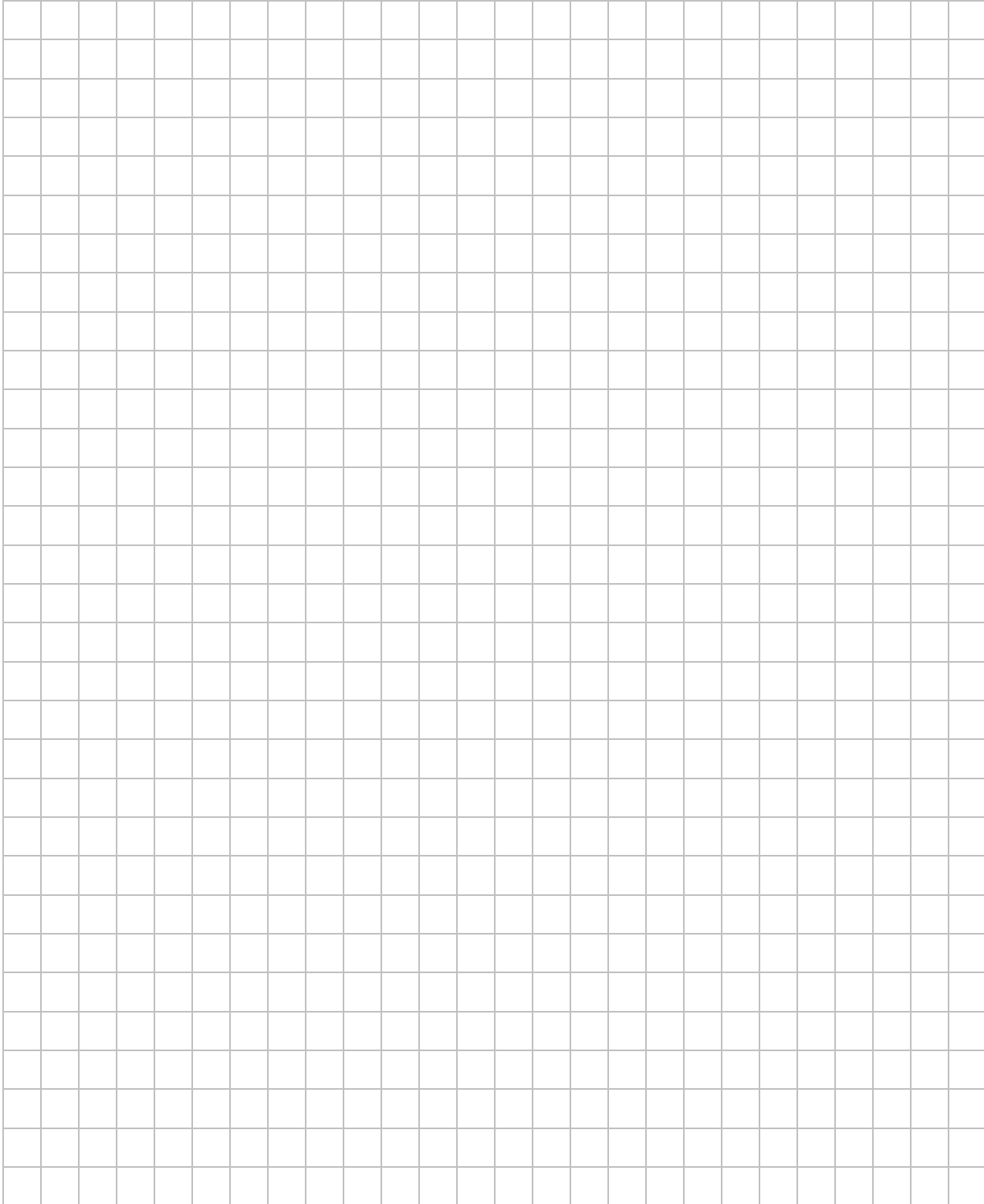




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date:	<b>23NOV05</b>	date:	
by:	<b>Ivon LeBlanc</b>	by:	

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## R70 Tractor Hydraulic Driven Compressor

We would like to thank you for purchasing your new **Cadman Tractor Hydraulic Driven Compressor**. You have purchased a product of superior quality that will serve your needs for a long time provided you follow this manual and safety procedures.



*Figure 1 - Tractor Hydraulic Driven Compressor*

*img-00113.png*

This unit is design to bring compressed air where you need it. Since this unit is hydraulically driven it frees up your PTO for other applications.

**BEFORE** operating your new **Cadman Tractor Hydraulic Driven Compressor**, inspect the machine for any damage or parts which may have come loose during shipping. **REPORT ANY DAMAGE TO CADMAN POWER EQUIPMENT LIMITED OR YOUR LOCAL DEALER IMMEDIATELY!**

## Safety Precautions

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- **DO NOT** move or operate this machine until you have read and understand these instructions in this manual.
- **NEVER** allow untrained persons to operate this machine.
- **DO NOT** attempt to service this machine while it is in operation.
- **MAKE CERTAIN** all mechanical and hydraulic tension has been released before attempting any service on the machine.
- **CHECK** all fasteners (nuts and bolts) regularly for tightness.
- **PERFORM REQUIRED MAINTENANCE** as prescribed or as necessary to keep this machine in safe operating condition.
- **KEEP ALL SPECTATORS** at a safe distance.
- **STAY CLEAR** of high pressure supply lines, especially when first pressurizing the system.
- **DO NOT** remove or alter any shielding on this machine.
- **KEEP CLEAR** of all moving parts.
- **REGULAR INSPECTION** of your pipe couplings, tubing and gaskets should be a part of your regular set-up routine. Any defective parts **MUST** be replaced or repaired before the machine is put into service.

### **OPERATOR NOTE**

Safety is just a word until put into practice.

Safety must be the first thing on your mind when operating any piece of machinery.

Failure to follow all safety instructions can result in serious injury or death to you or any spectators.

Remember...

**SAFETY FIRST!**



This symbol, the safety-alert symbol, indicates a hazard. When you come across this safety-alert symbol in this manual, make certain you fully understand and abide by the given instructions or warnings.

## Before Starting your Compressor

Before starting your compressor read and understand the Champion Operator's Manual then check the following items:

### Step1

#### Check the oil level of the compressor.

This is very important. Low oil levels will greatly reduce the life span of the compressor.



*Figure 2 - Compressor Oil Level Gauge*

*img-00114.png*

### Step 2

#### Check for Debris.

It is important to check the flywheel guard and cooling fins for any debris that may have collected during storage or transport of the unit. Clean out all debris before starting the compressor. Items that block the flow of air will cause the compressor to overheat. This will reduce the life span of the compressor.

### Step 3

#### Clean Intake Air Filters

Clean the air filters every time the unit is brought out of storage and after every 40 hours of operation. To clean the air filters use compressed air with a pressure no greater than 15 PSIG. Blow the air from the inside to the outside of the filter.

**OPERATOR NOTE**

**PSIG** = pounds per  
square inch  
gauge



**Do not exceed 15 PSIG nozzle pressure when cleaning element parts with compressed air. Do not direct compressed air against skin. Serious injury could result. Never wash element in fuel oil, gasoline or flammable solvent.**



## Using the Compressor

### Step 1

The compressor first must be placed in its working position. This can be next to the tractor or still connected to the hitch. Placement of the compressor should be within the length of the hydraulic hoses (allow some slack to prevent hose pinching).

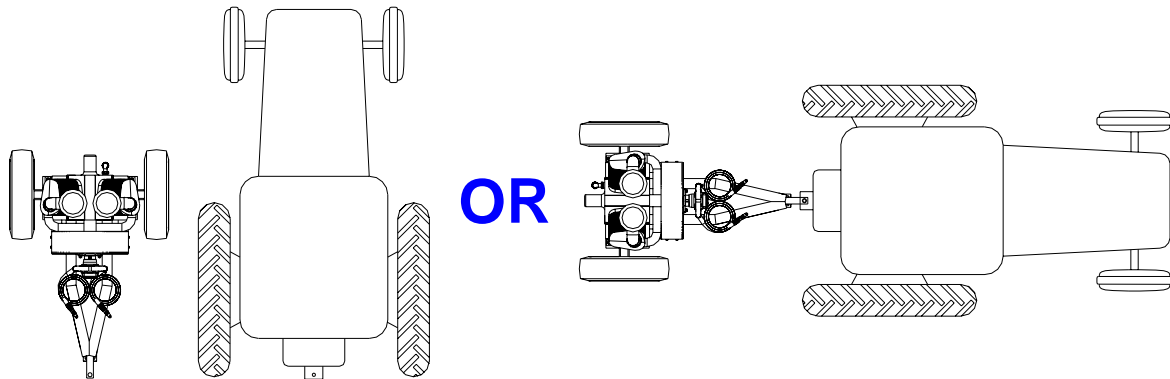


Figure 3 - Compressor Position

img-00116.wmf

### Step 2

Connect the air line to the compressor with the quick disconnect coupler.

### Step 3

To run the compressor you must connect it to a hydraulic power source. Connect the supplied hoses to the hydraulic coupler of the tractor. Test the control valve once you have connected the hoses. Index the valve in one direction, if the flywheel does not turn index the valve in the other direction.

## Check Valve Installation

**Cadman Power Equipment Ltd.** has installed a by-pass circuit on all tractor driven compressors. Every check valve will be labeled with an arrow showing the direction of flow. It is very important to have the check valve installed correctly. Improper installation of the valve will stop the flow causing the motor to stop rotating. With the compressor still in motion the momentum of the flywheel will shear the shaft from the motor. To prevent this install the check valve with the flow towards the inlet side of the motor (see Figure 4).

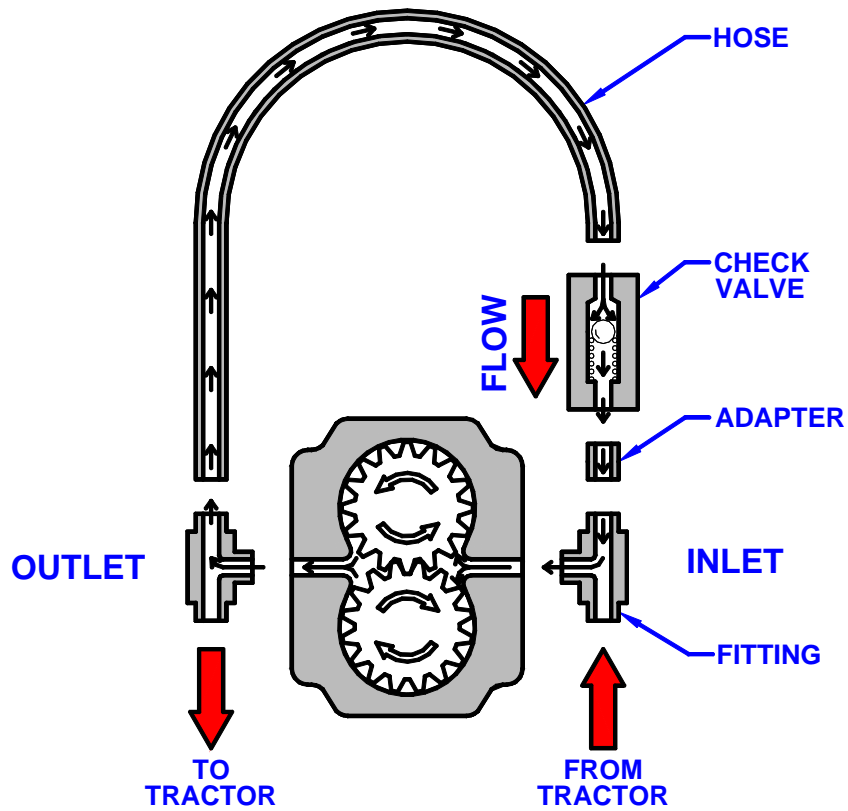


Figure 4 - By-Pass Flow (Viewed from the tractor)

img-00101.wmf



Figure 5 - By-Pass Flow

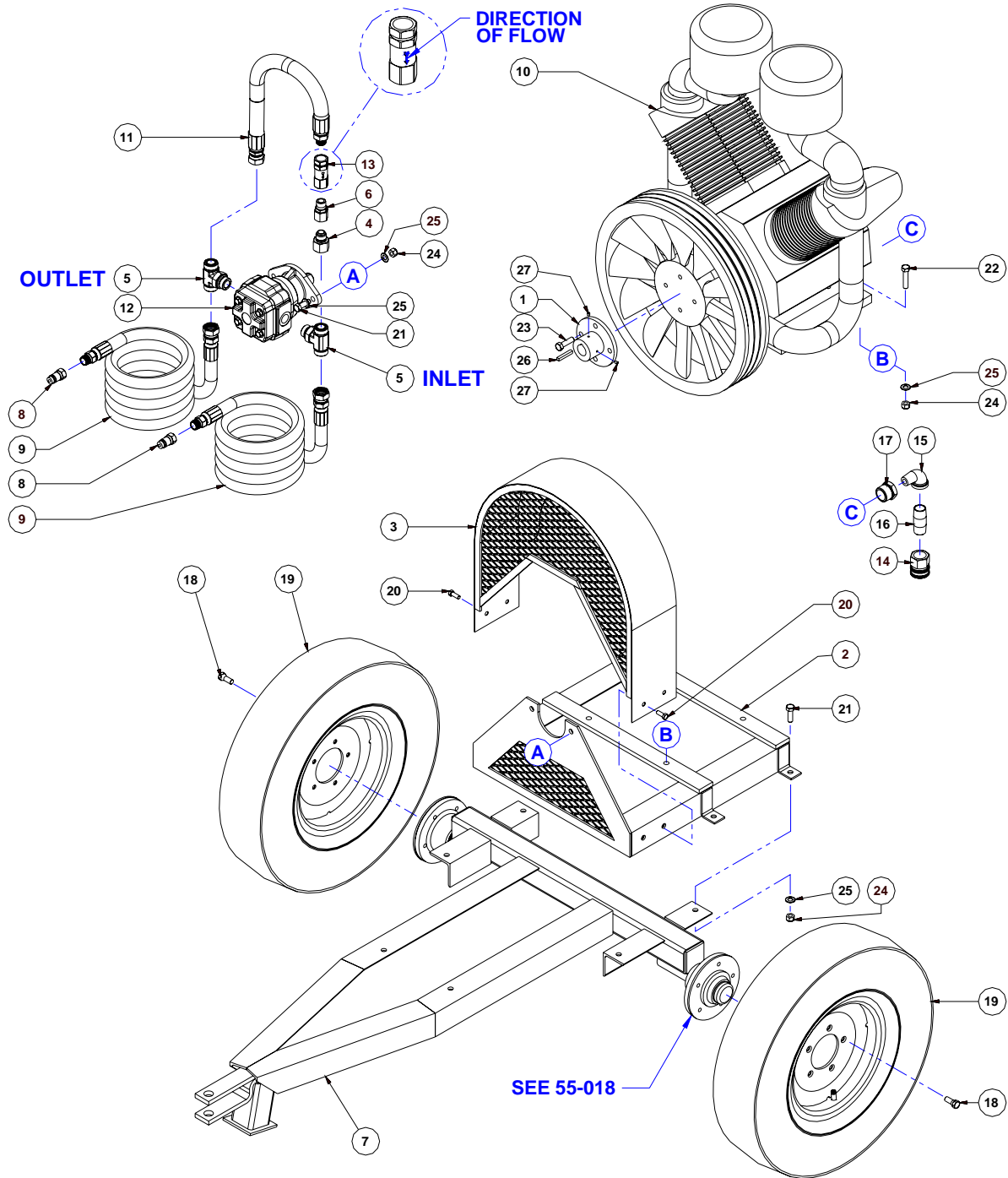
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# Parts Section

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Hub Assembly, 5 Bolt.....	12

**R70 Tractor Hyd. Driven Compressor**

**PU-CMP-R70T**



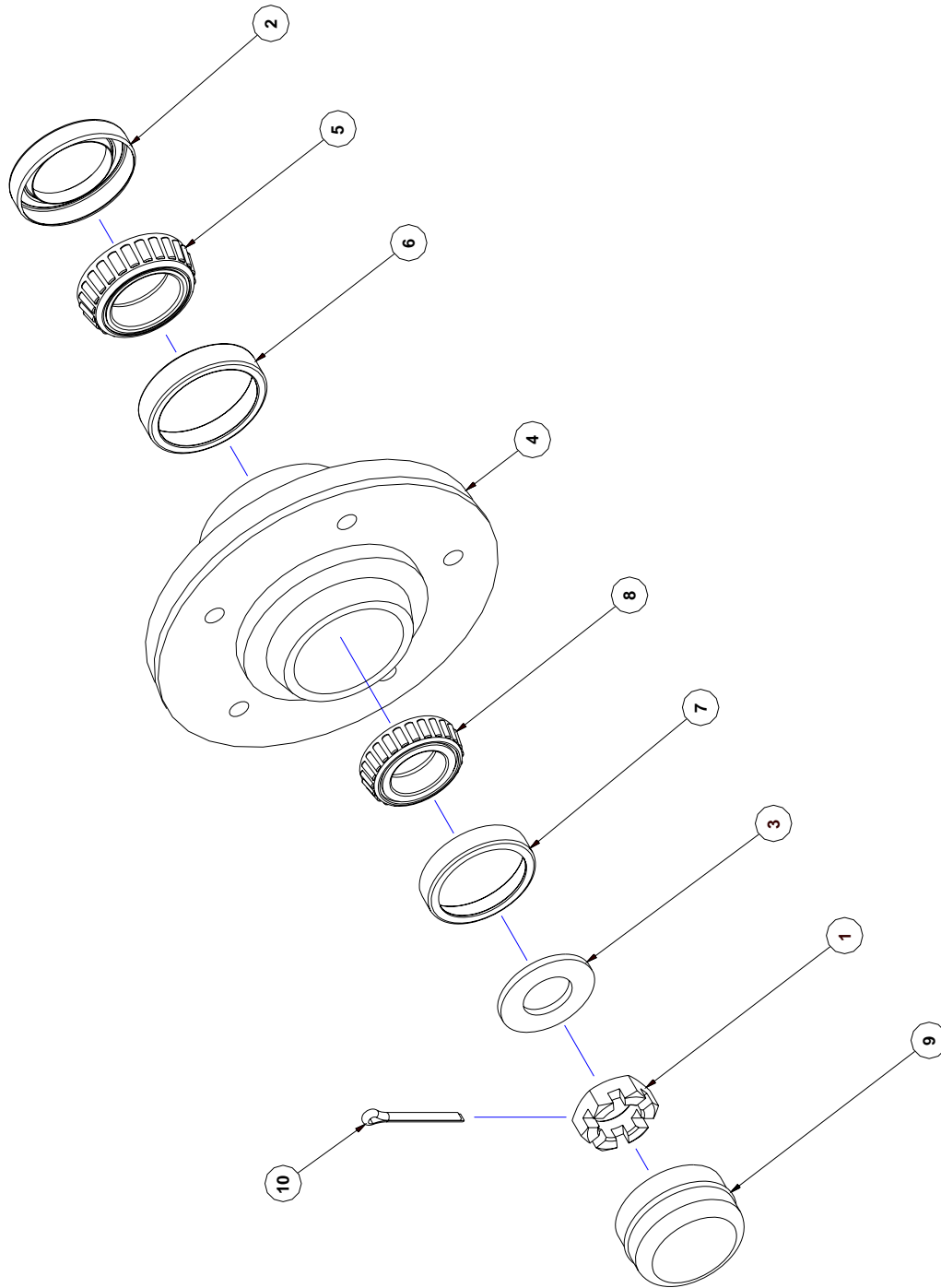
**R70 Tractor Hyd. Driven Compressor**

***PU-CMP-R70T***

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3	COMPRESSOR FLYWHEEL GUARD	18-117-A	1
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5	BRANCH TEE - #16JIC X #16SAE X #16JIC	25-WHD-5715X16	2
6	ADAPTER - #12 JIC-F SW. X #12 NPT-M	25-WHD-9100X12X12	1
7	COMPRESSOR TRAILER FRAME	30-223	1
8	HYDRAULIC COUPLER TIP	40-563	2
9	3/4 IN. X 168 IN. HYDRAULIC HOSE	40-564	2
10	CHAMPION R70 AIR COMPRESSOR	40-AIR-R70	1
11	3/4 IN. X 24 IN. HYDRAULIC HOSE	40-HHZ-0048	1
12	HYD, MOTOR - 31.2HP @ 1000 RPM	40-HYD-M32/1000	1
13	3/4 IN. CHECK VALVE 5 PSI	40-HYD-VU34FN-34FN	1
14	1 IN AIR LINE COUPLING X 1 NPT	40-NPT-AIRCPL/F	1
15	1 X 90 DEG STREET ELBOW, GALV.	40-NPT-ELS100X90G	1
16	1 NPT X 3 LG. NIPPLE, GALV.	40-NPT-NPL100X300G	1
17	1 1/4 X 1 IN REDUCING BUSHING, GALV.	40-NPT-RB125X100G	1
18	1/2-13 X 1.25 STAINLESS STEEL BOLT	55-007-45	10
19	ST205/75D15'B' 4 PLY WHEEL ASSY	55-071	2
20	3/8-16 X 1.00 STAINLESS STEEL BOLT	88-BLT-03816X100	4
21	1/2-13 X 1.50 STAINLESS STEEL BOLT	88-BLT-05013X150	6
22	1/2-13 X 2.25 STAINLESS STEEL BOLT	88-BLT-05013X225	4
23	1/2-20 X 1.75 STAINLESS STEEL BOLT	88-BLT-05020X175	4
24	1/2-13 STAINLESS STEEL LOCK NUT	88-NUT-LOC050-13	10
25	1/2 STAINLESS STEEL SAE FLAT WASHER	88-WSR-SAE050	12
26	5/16 X 5/16 X 2 LG. KEY	90-KEY-SQ031X200	1
27	SET SCREW, 1/4" -20 X 5/16" LG.	90-SCR-ST02520X031	2

**Hub Assembly, 5 Bolt**

**55-018**





## Required Maintenance

Prevention of mechanical failure is the goal of any good maintenance schedule. The secret to preventing unwanted down time is to adhere to a maintenance schedule suited to the way you use the equipment. Your maintenance schedule should include the following minimum requirements:

### Break-In Period

Normal break-in period your new Champion air compressor is 25 hours.

For the first 100 hours of compressor operation, a careful and regular check of the oil level should be made. Maintain oil level at the full line.

Complete a crankcase oil change after the first 100 hours of use. Please read the supplied Champion operation/maintenance manual for more details.

### Each Use

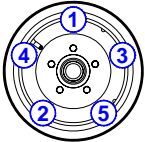
Maintenance Item	Figure	Procedure
Visually inspect equipment	N / A	Walk around the unit and inspect for loose, missing or damaged items. Replace missing or damaged items and tighten loosened items.
Check compressor oil level	Figure 2	Make sure the oil level is at the full line. Add lubricant as required (see lubricants). DO NOT mix oil type, weight or brands.
Check filter elements	N / A	It is important to check the air filters regularly. See <b>Before Starting your Compressor</b> section of this manual found on page 5.
Check tire pressure	N / A	Inflate both tires to a max of 2.41 bar (35 psi). Do not over-fill the tires. Over-filling can cause damage and could result in a transport hazard.
Tighten all wheel bolts	 img-00117.wmf	Before moving the unit, verify that the wheel bolts are tight. When tightening the bolts use the star pattern with your torque wrench set at 129 N.m (95 ft/lbs)

Table 1 - Required Maintenance - Each Use



**Every 90 Days or 500 Hours of Service**

Maintenance Item	Figure	Procedure
Change crankcase oil	N / A	Change the crankcase oil to prolong the life of your compressor. (See Lubricants)
Check for air leakage	N / A	Check the entire system for air leakage around fittings, connections and gaskets, using a soap solution and a brush.
Tighten all fasteners	N / A	Tighten all nuts and cap screws as required.
Check and clean compressor valves as required	N / A	Check and clean each compressor valve. Replace any damaged parts. Valves must be replaced in the original position and valve gaskets should be replaced at each valve service. DO NOT re-use the gasket.
Test pressure relief valves	N / A	Pull the ring on all pressure relief valves to assure proper operation. Replace any relief valves that are damaged or seized.

Table 2 - Required Maintenance - Each Use

**Before Storing**

Maintenance Item	Figure	Procedure
Visually inspect equipment	N / A	Walk around the unit and inspect for loose, missing or damaged items. Replace missing or damaged items and tighten loosened items.
Clean unit	N / A	Wash down the unit's exterior. Washing thoroughly with reduce corrosion damage.
Protect unit	N / A	Cover the unit with a tarp to reduce the amount of dust or debris collecting on the unit.

Table 3 - Required Maintenance - Before Storing

**NOTE:**

Proper storage of the **Cadman Tractor Hydraulic Driven Compressor** will greatly prolong the operational life of the unit.

**Lubricants**

**Compressor Oil:** Compressors are factory filled with CHAMPLUB hydrocarbon based recip lubricant. This is an ISO 100 non-detergent industrial lubricant with rust and oxidation inhibitors specially formulated for reciprocating compressors. It is recommended this compressor be maintained using this oil for ambient temperatures above 0 °C (32 °F).

CHAMPLUB synthetic is a premium grade diester based synthetic lubricant providing excellent performance in high temperature applications. Synthetic oil requires more detailed maintenance. For more information on this please refer to the supplied Champion operation/maintenance manual.

## Useful Information

### LENGTH

1 FOOT = 12	Inches	1 METER = 39.37	Inches
1 ROD = 0.3048	Meter	1 MILE = 3.2808	Feet

### AREA

1 SQUARE FOOT = 144	Square Inches
= 0.0929	Square Meters
1 SQUARE YARD = 1296	Square Inches
= 0.8361	Square Meters
1 SQUARE METER = 1549.4	Square Inches
= 10.764	Square Feet
1 ACRE = 43560	Square Feet
= 4047	Square Meters
= 0.4047	Hectare
1 HECTARE = 107642.62	Square Feet
= 10000	Square Meters
= 2.47105	Acres
1 SQUARE MILE = 640	Acres
= 259	Hectares

### VOLUME

1 GALLON ( US ) = 0.8327	Imperial Gallons
= 231	Cubic Inches
= 0.1337	Cubic Feet
= 8.345	Pounds
1 CUBIC FOOT = 1728	Cubic Inches
= 7.48	Gallons ( US )
= 62.4	Pounds
= 28.32	Liters
1 ACRE INCH = 27154	Gallons ( US )
= 254	Cubic Meters / Hectare

**AREA OF A CIRCLE** = Diameter x Diameter x 0.7854

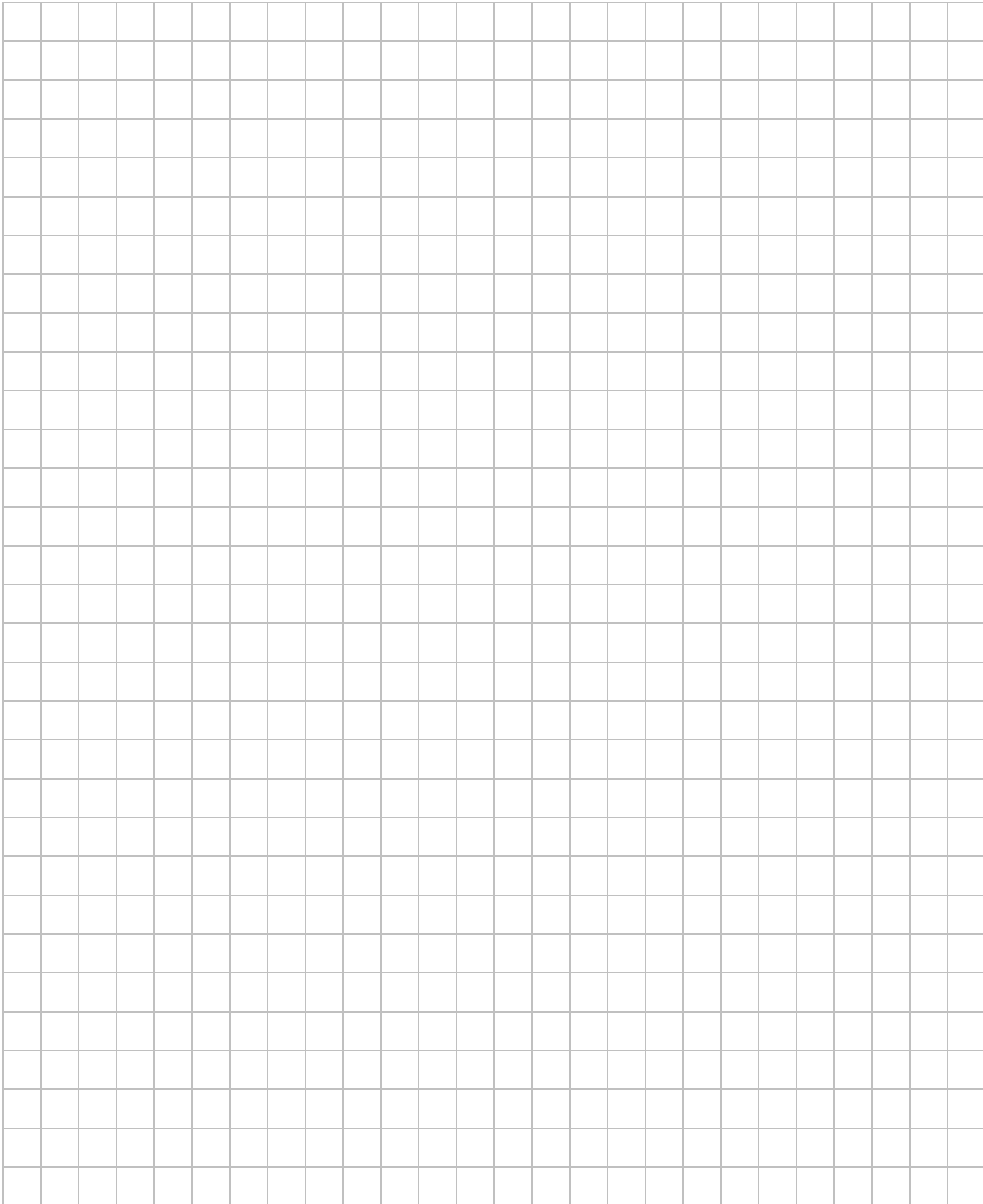
**CYLINDER VOLUME (US GAL.)** = Diameter (ft.) x Diameter (ft.) x Length (ft.) x 5.8748



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*Figure 2 - Compressor Oil Level Gauge*

*img-00114.png*

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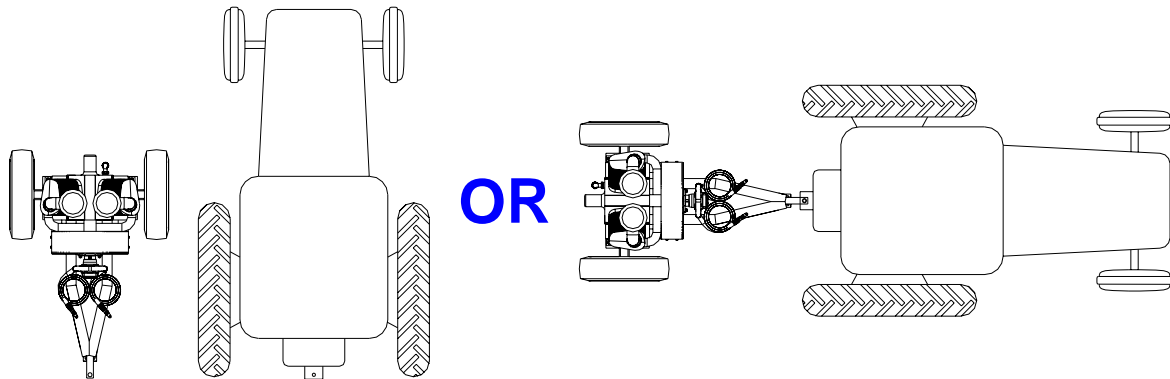


Figure 3 - Compressor Position

img-00116.wmf

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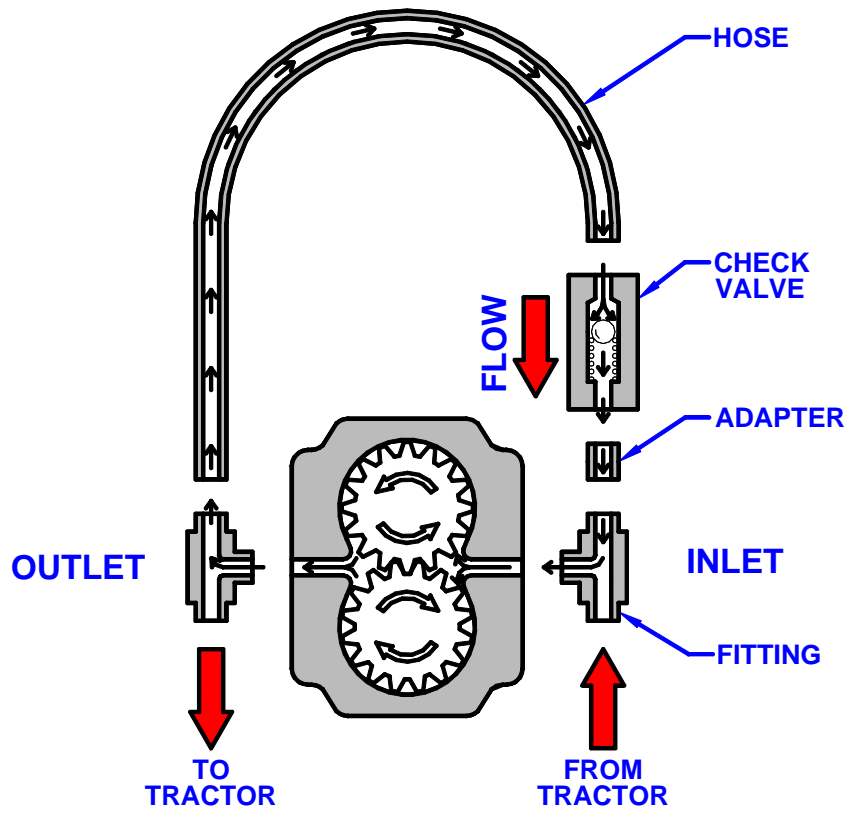


Figure 4 - By-Pass Flow (Viewed from the tractor)

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Figure 5 - By-Pass Flow

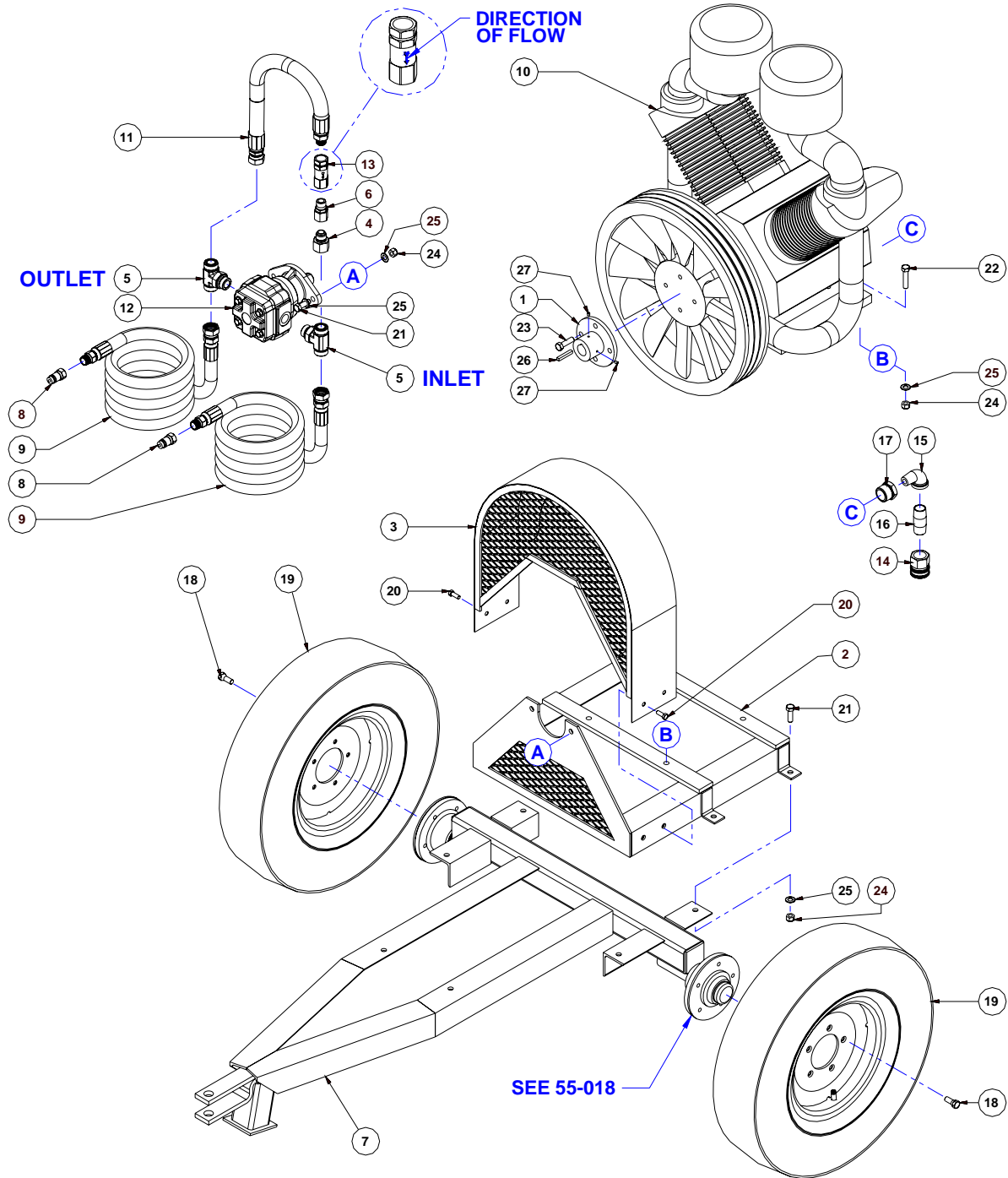
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**R70 Tractor Hyd. Driven Compressor**

**PU-CMP-R70T**



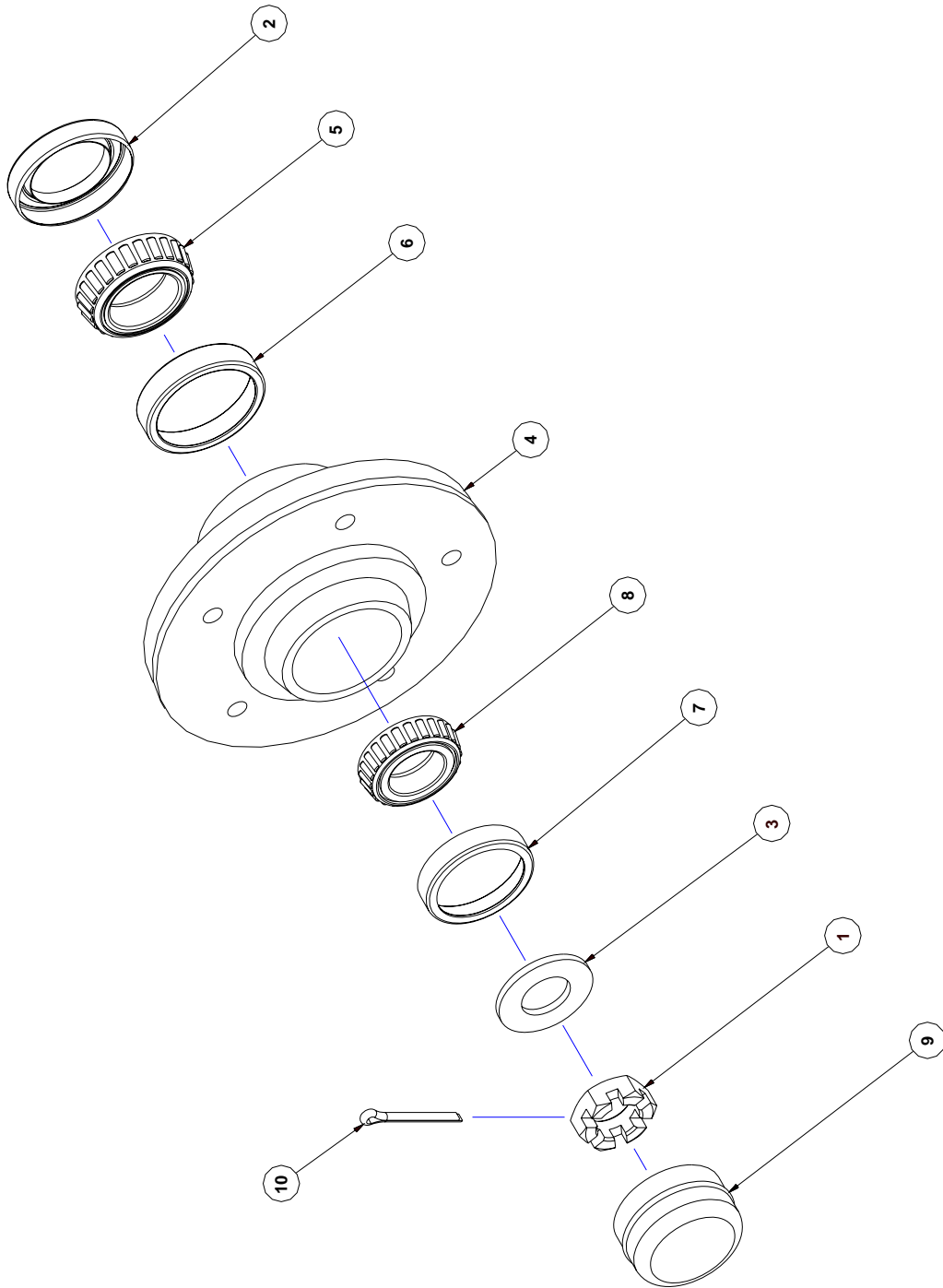
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25	1/2 STAINLESS STEEL SAE FLAT WASHER	88-WSR-SAE050	12
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**Hub Assembly, 5 Bolt**

**55-018**





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### Each Use

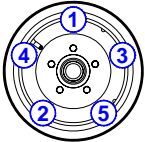
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**Every 90 Days or 500 Hours of Service**

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Table 2 - Required Maintenance - Each Use

**Before Storing**

Maintenance Item	Figure	Procedure
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Clean unit	N / A	Wash down the unit's exterior. Washing thoroughly with reduce corrosion damage.
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1 ACRE = 43560	Square Feet
= 4047	Square Meters
= 0.4047	Hectare
1 HECTARE = 107642.62	Square Feet
= 10000	Square Meters
= 2.47105	Acres
1 SQUARE MILE = 640	Acres
= 259	Hectares

### VOLUME

1 GALLON ( US ) = 0.8327	Imperial Gallons
= 231	Cubic Inches
= 0.1337	Cubic Feet
= 8.345	Pounds
1 CUBIC FOOT = 1728	Cubic Inches
= 7.48	Gallons ( US )
= 62.4	Pounds
= 28.32	Liters
1 ACRE INCH = 27154	Gallons ( US )
= 254	Cubic Meters / Hectare

**AREA OF A CIRCLE** = Diameter x Diameter x 0.7854

**CYLINDER VOLUME (US GAL.)** = Diameter (ft.) x Diameter (ft.) x Length (ft.) x 5.8748