TWIN DISC
INCORPORATED

Operator's Manual

Pump Drive

Model:
AM080

Document Number: 1033752

NOTICE

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LIMITATIONS OF REMEDIES AND LIMITATION OF OTHER WARRANTIES, CONFLICTING TERMS, MERGER AND INTEGRATION CLAUSE

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TWIN DISC INC. Patents

For Twin Disc Inc. Patents: See: www.twindisc.com/patents

Table of Contents

Safety

These messages convey important information about **SAFETY**. The safety alert symbol and signal words described below are followed by safety messages and appear throughout this manual.

All personnel must read, understand and follow all safety message instructions prior to operation, maintenance or repair of this unit.

Safety Alert Symbol

This is the safety alert symbol. It is used throughout this manual to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

Signal Words

Signal words are used with the safety alert symbol to designate a level of hazard seriousness. The signal words used are **DANGER**, **WARNING**, **CAUTION** and **NOTICE**.

DANGER **DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.**

WARNING **WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.**

CAUTION **CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.**

NOTICE **NOTICE is used to address practices not related to physical injury.**

NOTES

Introduction

General Information

This publication provides the information necessary for the operation and routine maintenance of the Twin Disc, Incorporated equipment specified on the cover of this manual. Specific engineering details and performance characteristics can be obtained from the Product Service Department of Twin Disc, Incorporated, Racine, Wisconsin, USA.

Operating personnel responsible for this equipment should have this manual at their disposal and be familiar with its contents. Applying the information in the manual will result in consistent performance from the unit and help reduce downtime.

Replacement Parts

Parts Lists

See the engineering assembly drawings in Engineering Drawings section of the Service Manual to facilitate ordering spare or replacement parts.

Ordering Parts

All replacement parts or products (including hoses and fittings) must be of Twin Disc origin or equal, and otherwise identical with components of the original equipment. Use of any other parts or products will void the warranty and may result in malfunction or accident, causing injury to personnel and /or serious damage to the equipment.

Renewal parts and service parts kits may be obtained from any authorized Twin Disc distributor or service dealer.

NOTICE

Do not order parts from the part numbers on the engineering drawings. These numbers may be referenced for part identification; however, they should be verified on the bill of material (BOM) before an order is placed. BOM numbers are stamped on the unit nameplate.

Parts Shipment

Furnish the complete shipping information and postal address. All parts shipments made from the factory will be FOB factory location, USA. State specifically whether the parts are to be shipped by freight, express, etc. If shipping instructions are not specified, the equipment will be shipped the best way, considering time and expense. Twin Disc, Incorporated will not be responsible for any charges incurred by this procedure.

Twin Disc, Incorporated, having stipulated the bill of material number on the unit's nameplate, absolves itself of any responsibility resulting from any external, internal or installation changes made in the field without the express written approval of Twin Disc. All returned parts, new or old, emanating from any of the above-stated changes will not be accepted for credit. Furthermore, any equipment which has been subjected to such changes will not be covered by a Twin Disc warranty.

Safety

Safe practices must be employed by all personnel operating and servicing this unit. Twin Disc, Incorporated will not be responsible for personal injury resulting from careless use of hand tools, lifting equipment, power tools, or unaccepted maintenance/operating practices.

Important Safety Notice

Because of the possible danger to person(s) or property from accidents which may result from the use of manufactured products, it is important that correct procedures be followed. Products must be used in accordance with the engineering information specified. Proper installation, maintenance, and operation procedures must be observed. Inspection should be made as necessary to assure safe operations under prevailing conditions. Proper guards and other suitable safety codes should be provided. These devices are neither provided by Twin Disc, Incorporated nor are they the responsibility of Twin Disc, Incorporated.

⚠ WARNING

To prevent accidental starting of the engine when performing routine maintenance, disconnect the battery cables from the battery and remove ignition key from the switch.

Sources of Service Information

Each series of manuals issued by Twin Disc, Incorporated is current at the time of printing. When required, changes are made to reflect advancing technology and improvements in state-of-the-art.

Individual product service bulletins are issued to provide the field with immediate notice of new service information.

For the latest service information on Twin Disc products, contact any Twin Disc distributor or service dealer. This can be done on the Twin Disc corporate web site found at http://www.twindisc.com. Provide your model number, serial number and bill of material number to obtain information on your unit. If necessary, contact the Product Service Department of Twin Disc, International S.A., Nivelles, Belgium, or Twin Disc, Incorporated, Racine, Wisconsin, 53405-3698, USA by e-mail at service@twindisc.com.

Warranty

Equipment for which this manual was written has a limited warranty. For details of the warranty, refer to the warranty statement at the front of this manual.

NOTES

Operation

Overview

Twin Disc pump drives provide for simultaneous running of two or more hydraulic pumps from a single prime mover. All models can be prepared for various applications.

Auxiliary Power Take-off

The input gear drives, through an idler gear, two output gears, each capable of driving two auxiliary devices. These output gears rotate in the same direction of the prime mover at a given ratio, and each is fitted with two mounting plates with two or four mounting holes for auxiliary devices. Figure 1 and 2 show the different tower position definitions.

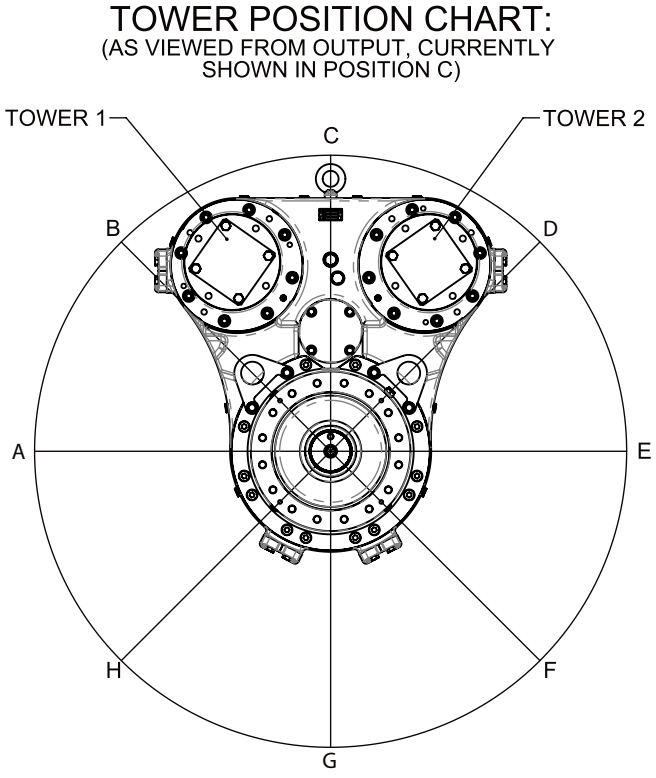


Figure 1. Dual Tower Positions

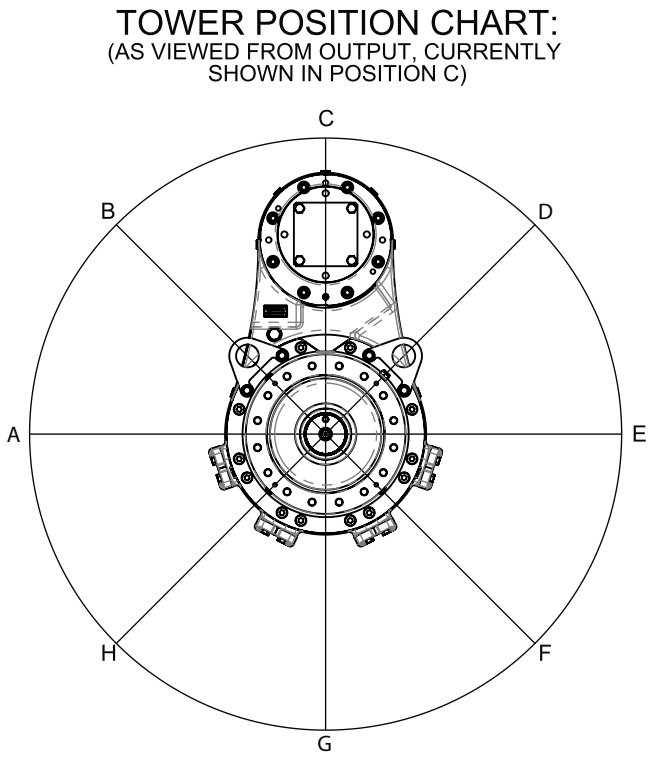


Figure 2. Single Tower Positions

Coupling

The Pump Drive is coupled to the prime mover either directly to the fly-wheel, or remotely through a drive shaft. The prime mover turns the pump drive input gear and clutch drive ring.

Oil Plug And Breather Diagrams

Table 1. Oil Capacities Based On Tower Position

TOWER POSITION	OIL FILL QUARTS (L)	
	DUAL TOWER	SINGLE TOWER
A	2.5 (2.4)	2.5 (2.4)
B	2.5 (2.4)	2.5 (2.4)
C	2.5 (2.4)	2.5 (2.4)
D	2.5 (2.4)	2.5 (2.4)
E	2.5 (2.4)	2.5 (2.4)
F	2.5 (2.4)	2.5 (2.4)
G	2.5 (2.4)	1.5 (1.4)
H	2.5 (2.4)	2.5 (2.4)

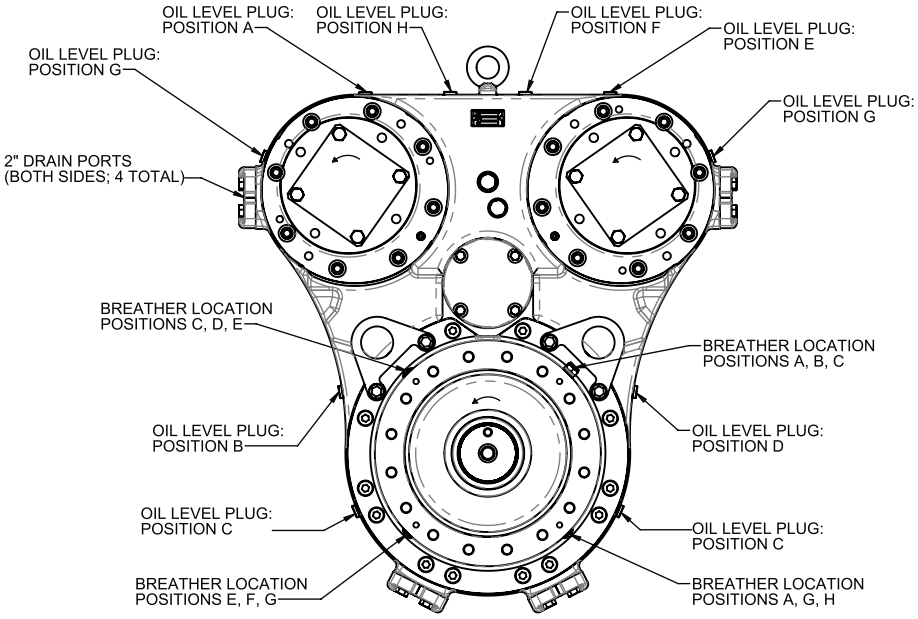


Figure 3. Oil Plug And Breather Diagram 1

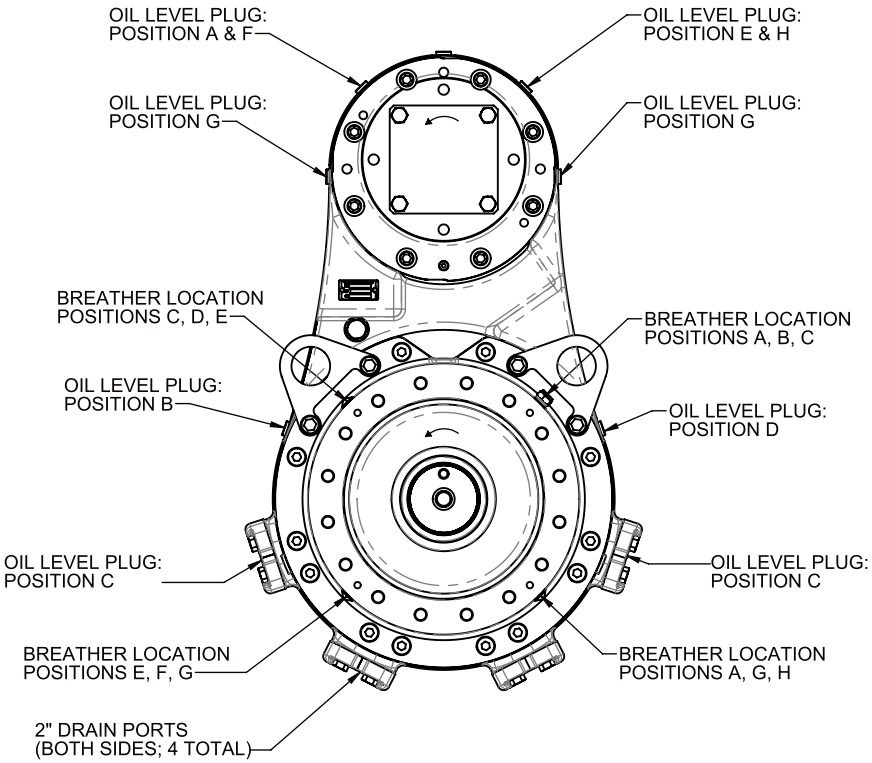


Figure 4. Oil Plug And Breather Diagram 2

Table 2. Tower Ports

DESCRIPTION	PORT/STANDARD	TYPE
OIL LEVEL PLUG	M14 X 1.5	FLAT FACE PORT
DRAIN/FILL PORT	M48X2.0 STRAIGHT THD. OR SIZE 51 / ISO 6162 (CODE 61) M12 X 1.75	FLAT FACE PORT
BREATHER PORT	3/8"-18 NPT	NPT
SPEED SENSOR PORT	5/8"-18 / UNF	UNF

Maintenance

Lubrication

Gears and bearings are splash lubricated.

Oil Specifications

The pump drive is supplied without oil. Before start up fill pump drive to level indicated by oil level plug.

Oil Type and Viscosity

The oil selected to be used in the gear box must maintain a minimum viscosity of 12 cSt while the gear box is operating at its maximum temperature for a given application. The maximum operating temperature of the gear box must never exceed 93 °C (200 °F) for synthetic oils, 80 °C (176 °F) for mineral oils. If this limit is exceeded, external cooling is required.

Oils must contain EP additives.

If the maximum operating temperature a gear box experiences is significantly less than 100 °C (210 °F) due to the nature of the duty cycle, environmental factors or external cooling; oils with lower viscosities may be used.

Oils with excessive viscosity in comparison to what is required based on maximum operating temperatures of the gear box increases drag within the gear box and power loss of the overall system.

Care should be taken in identifying oils whose viscosity at the maximum operating temperature of the gearbox are above 12 cSt but not excessively so. Table 1 below can be used to help identify appropriate oils.

NOTICE

Multi-Viscosity oils can be used provided they provide the required viscosity at all operating conditions.

Table 3. Viscosity vs. Maximum Gear Box Operating Temperature for Various Oil Grades

Maximum Operating Temperature	Minimum Viscosity Grade Required
< 50 °C (122 °F)	Consult Engineering
50 - 65 °C (122 - 149 °F)	VG32 (SAE 10W)
65 - 80 °C (149 - 176 °F)	VG46 (SAE 15)
80 - 85 °C (176 - 185 °F)	VG68 (SAE 20)
85 - 95 °C (185 - 203 °F)	VG100 (SAE 30)
95 - 105 °C (203 - 221 °F)	VG150 (SAE 40)

Oil Cooling Requirements (See Engineering Drawings for additional specifications.)

Table 4. Oil Cooling Requirements

Customer supplied air to oil cooling is typical	
Minimum oil temperature at start-up	-40 °C (-40 °F)
Oil temperature at steady operating conditions	38 °C to 85 °C (100 °F to 185 °F)
Maximum oil sump temperature	93 °C (200 °F) Synthetic Oils
	80 °C (176 °F) Mineral Oils

Oil System

Oil Level

The customer supplied sump oil level should be checked daily or every ten hours.

Oil and Filter Change Interval

With a new unit, change the oil and filter element within the first 50 hours of operation. Change oil and filter element after each 1000 hours thereafter or more often if conditions warrant. The oil and filter should be changed every 12 months if less than 1000 hours has accumulated since the last oil change.

For a repaired unit, check the filter element after eight hours of operation. If the filter is clean, install a new filter element and then change the oil and filter element after 1000 hours of service. If the filter is dirty, change the element and operate for another eight hours. Check the filter again. Continue this cycle until the filter is clean and then change the oil and filter after 1000 hours of service or more often if conditions warrant.

Oil Level Fill Procedure

1. Remove the highest oil fill plug for the corresponding tower configuration.

2. Add 3 quarts of oil (See “Table 1. Oil Capacities Based On Tower Position” on page 6 for the actual oil quantity. The excess oil may spill out through drain).

3. Reinstall the oil fill plug and tighten to 18 - 22 Nm (13 - 17 lb-ft).

4. Remove the designated oil level drain plug. Refer to drawing 1037680 to identify the designated plugs per unit orientation.

5. If oil drains from oil level drain port, wait until the excess oil has stopped draining from the port, and then install and tighten the oil level drain plugs to 18 - 22 Nm (13 - 17 lb-ft).

6. If no oil drains from oil level drain port, reinstall oil level drain plug, add additional oil and repeat process from step 3.

NOTICE

Ensure while adding oil that the the oil level drain plug is installed. A false indication may be present while adding oil that could cause oil to exit the oil level drain if not plugged.

Torsional Coupling

1. Do not obstruct the flywheel housing vents preventing the free flow of air for cooling the coupling. The ambient temperature of the air around the coupling should be between -60 °C (22 °F) and 80 °C (176 °F). Assure baffles are installed properly so hot air is ported out of the housing.

2. Visually inspect the element after the first 100 hours of operation and every 2000 hours thereafter, or every six months, whichever comes first. Torsional vibration, misalignment, degradation by contaminants (oil), heat, ultraviolet radiation, and excessive system torque can cause cracks or other signs of distress to appear on the surface of the rubber. The above described items affect the life of the coupling element.

   When inspecting the flexible coupling, look for evidence or conditions identified in the following steps:

   A. Cracks in the surface of the rubber. May be caused by torsional vibrations, excessive misalignment or exposure to contaminants (heat, petroleum products, chemicals, ozone, ultraviolet radiation, etc.), excessive system torques.

   B. Deterioration of the rubber element, as evidenced by sponginess or by black carbon-like dust on rubber surface. May be caused by contaminants or excessive heat, either external or internal to the coupling.

   C. Cracked, bent or otherwise damaged flex plate or coupling plate.

   D. Bolt holes in flex plate or coupling plate are elongated oval shaped, not round. This could be caused by improperly assembled parts, loose parts, vibration or improperly torqued parts.

   E. Bolts/nuts -- bent, worn or stripped threads.

3. Inspect the hub, looking for the following:

   A. Damaged or worn splines.

   B. Cracked parts.

4. Replace any defective parts including defective fasteners.

Overhaul Interval

A complete overhaul of the unit should be made at the same time that the engine is overhauled.

Periodic Visual Inspection

1. Check the mountings for tightness or damage such as cracks. Tighten loose mountings and replace damaged parts.

2. Check pressure and temperature gauge where applicable.

3. Inspect the oil lines and heat exchanger for leaky connections, cracks, or other damage. Replace damaged lines.

4. Periodically, inspect the drive line and the input and output shaft oil seals for leakage. Replace parts as required.

Pump Drive Installation

Prior to Installation

NOTICE

Most Twin Disc products mount directly onto the flywheel of the engine or are attached to the flywheel through external shafting or adapters. Flywheel-to-driven component interference is possible due to mismatch of components or other reasons. Therefore, engine crankshaft endplay as well as flywheel alignment checks must be made before the driven component is installed.

After installation of the driven component, the crankshaft endplay should be measured again. The endplay at the second measurement should be the same as the first. A difference in these two endplay measurements could be an indication of interference. Consequently, the driven component must be removed and the source of interference found and corrected.

Twin Disc will not be responsible for system damage caused by engine to Twin Disc component interference regardless of the cause of interference. This engine crankshaft endplay check is considered mandatory.

The engine flywheel and the flywheel housing must be checked for trueness. Clean the engine flywheel and flywheel housing mounting surfaces thoroughly before any measurements are made.

Additionally, the runout of the component connected to the output of the AM080 through drive must be checked in the same fashion.

Checking Alignment of Engine Flywheel and Housing. (also reference SAE J-1033 and J-617)

1. Bolt a thousandths (.001 in) increment dial indicator or gauge to the engine flywheel so that the indicator is perpendicular to the face of the engine flywheel housing, and the indicator stem is riding on the face of the flange. See Figure 5.

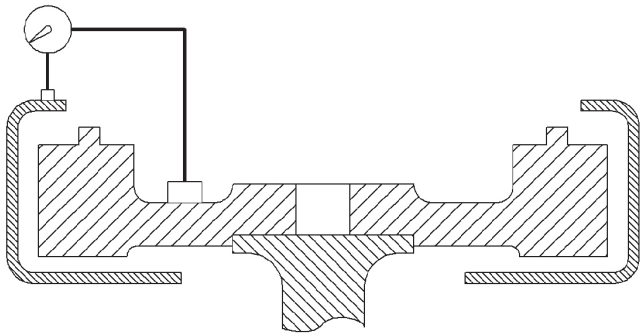


Figure 5. Checking Flywheel Housing Flange for Deviations

2. Rotate the engine flywheel, always keeping a thrust in the same direction, and note the face deviation of the engine flywheel-housing flange. The face deviation must not exceed the figures given in Table 5.

Table 5. Total Indicator Readings for Engine Flywheel Housing Flange

SAE Housing Number	Face Deviations and Bore Eccentricity mm (in)
00	0.48 (0.019)
0	0.41 (0.016)
1/2	0.36 (0.014)
1	0.30 (0.012)
2	0.28 (0.011)
3	0.25 (0.010)

3. With the indicator mounted as in the above paragraph, adjust the indicator stem so that it will ride on the bore of the engine flywheel housing. See Figure 6.

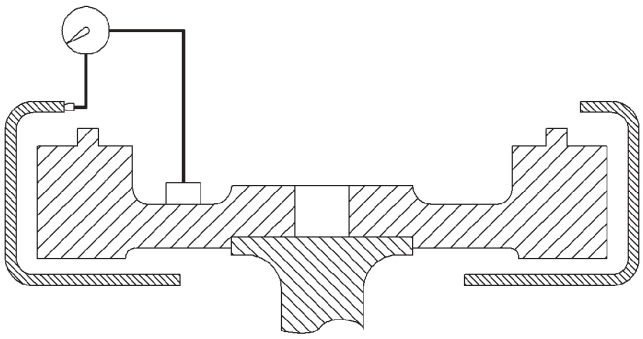


Figure 6. Checking Flywheel Housing Bore Eccentricity

4. Rotate the engine flywheel and note the bore eccentricity of the engine flywheel-housing bore. See Table 5 for allowable tolerances.

5. Bolt the dial indicator or gauge to the engine flywheel housing so that the indicator is perpendicular to the engine flywheel, and the indicator tip is riding on the inner face of the flywheel. Rotate the flywheel. The variation of the face runout of the surface to which the driving ring is bolted should not exceed 0.013 mm (0.0005 in) per inch of diameter. See Figure 7.

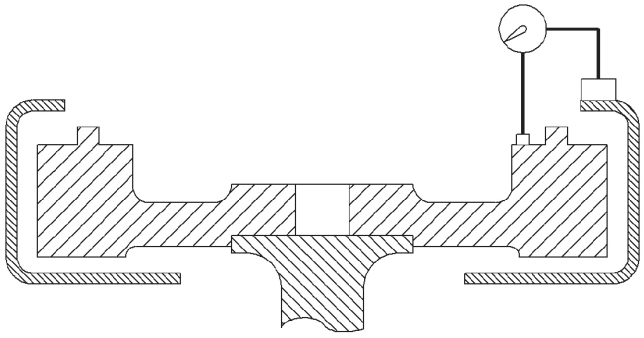


Figure 7. Checking Flywheel Face Run

6. With the indicator mounted as in the paragraph above, adjust the indicator tip so that it will ride on the driving ring pilot bore of the engine flywheel. Rotate the flywheel. The driving ring pilot bore eccentricity of the engine flywheel should not exceed 0.13 mm (0.005 in) maximum total indicator reading. Thrust on the flywheel should be in one direction at all times to obtain a correct reading. See Figure 8.

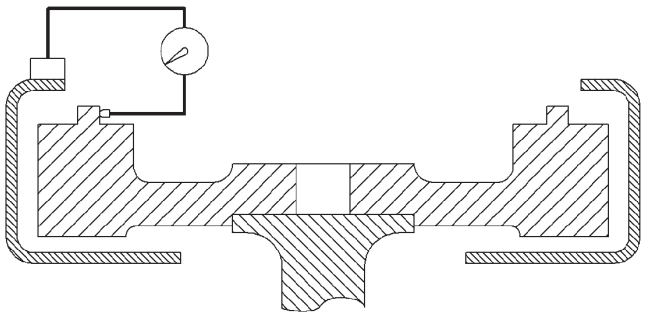


Figure 8. Checking the Flywheel Pilot Ring Bore Eccentricity

Checking Alignment of Component Driven by AM080 SAE Flywheel. (also reference SAE J-1033 and J-617)

1. Bolt a thousandths (.001 in) increment dial indicator or gauge to the rotating element of the component that is to be driven by the gear box flywheel output. Position the indicator stem such that it is perpendicular to and is riding on the flywheel housing flange face. See Figure 9.

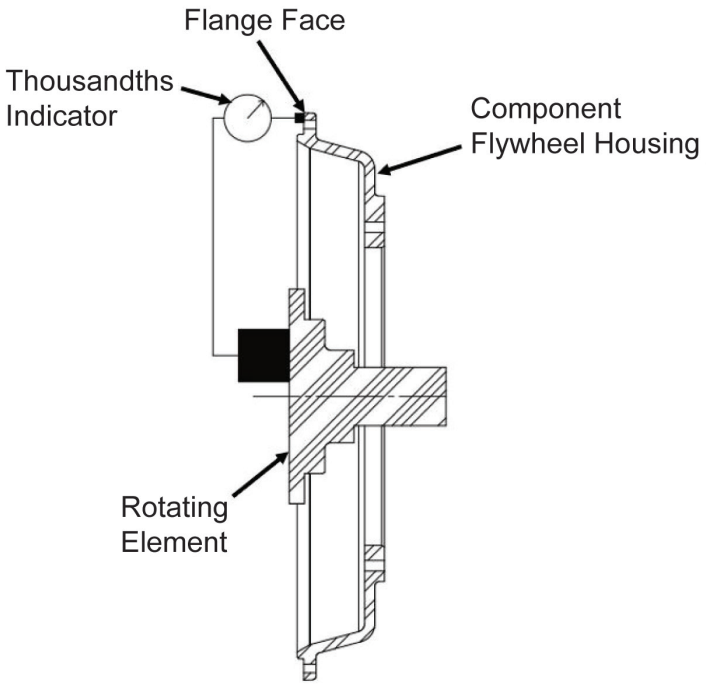


Figure 9. Checking Mating Driven Component Housing Face Runout

2. Rotate the element, always keeping a thrust in the same direction, and note the face runout of the flywheel-housing flange. The total face runout must not exceed the figures given in Table 6.

Table 6. Total Indicator Readings for Engine Flywheel Housing Flange

SAE Housing Number	Face Deviations and Pilot Diameter Runout mm (in)
00, 0, 1/2	0.25 (0.010)
3, 2, 1	0.20 (0.008)
6, 5, 4	0.13 (0.005)

3. With the indicator mounted as in the paragraph above, adjust the indicator tip so that it will ride on the mating flywheel housing pilot boss. See Figure 10.

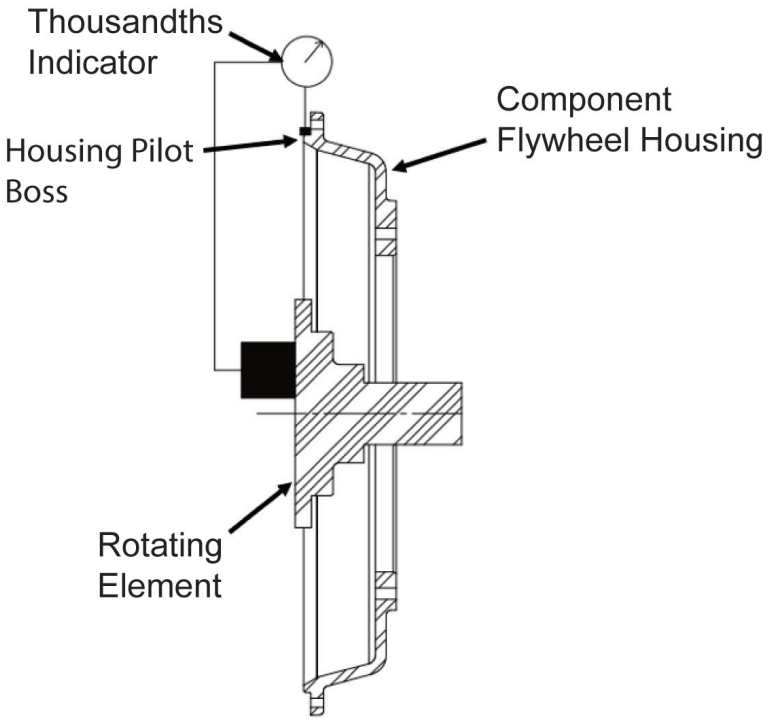


Figure 10. Checking Mating Driven Component Housing Pilot Boss Eccentricity

4. Rotate the element to which the indicator base is secured. The total runout of the pilot boss must not exceed the values given in table 6.

AM080 Pump Drive Mounting

1. Customer mounting configuration must not allow a moment load to be applied to the pump drive INPUT flywheel housing.

2. The number of mount points supporting the engine/pump drive assembly to a chassis must not exceed 4. See Figure 11.

   a. Mounts may incorporate vibration isolating elements.

   b. Mounts are not required to coincide with the pump drive's OUTPUT flywheel/ bracket connection point.

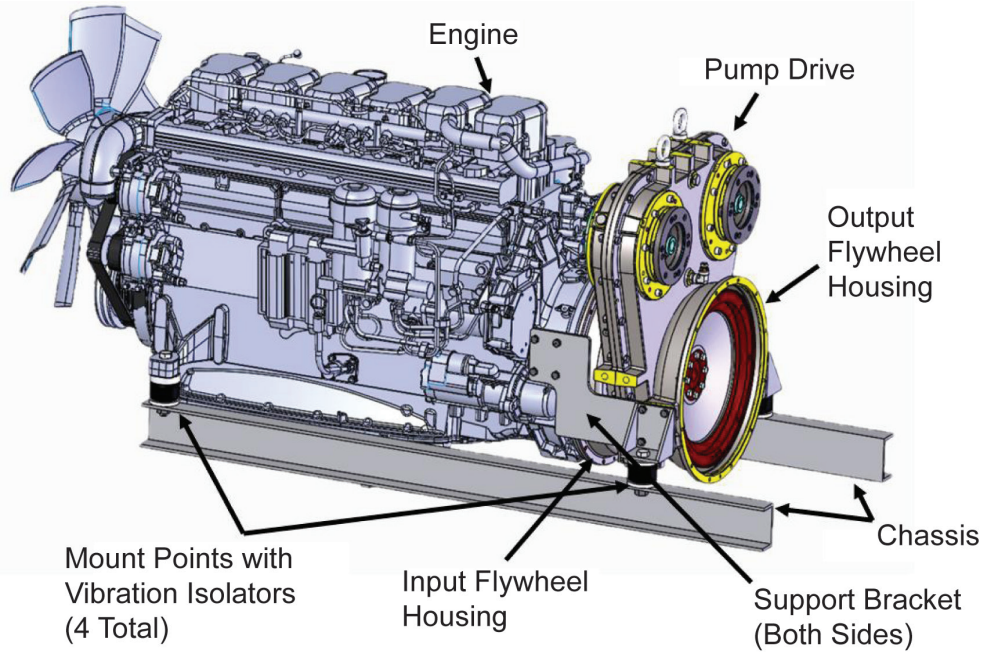


Figure 11. Recommended Installation

3. Support brackets are required to secure the OUTPUT flywheel housing of the pump drive to the engine. See Figure 12.

   a. The brackets used to secure the pump drive to the engine must not only be sufficiently strong to support any bending moment at the INPUT flywheel housing interface but also prevent any excessive twisting that may compromise this connection.

   b. Tapped holes on the main housing are not to be used for mounting purposes.

   c. All tapped holes on the output housing should be used in securing the support bracket to the pump drive.

   d. Refer to specific installation drawing for additional requirements. Consult TWIN DISC application engineering for required drawing.

4. Eye bolts on the pump drive should be used to lift the pump drive ONLY and not the engine. See figure 12.

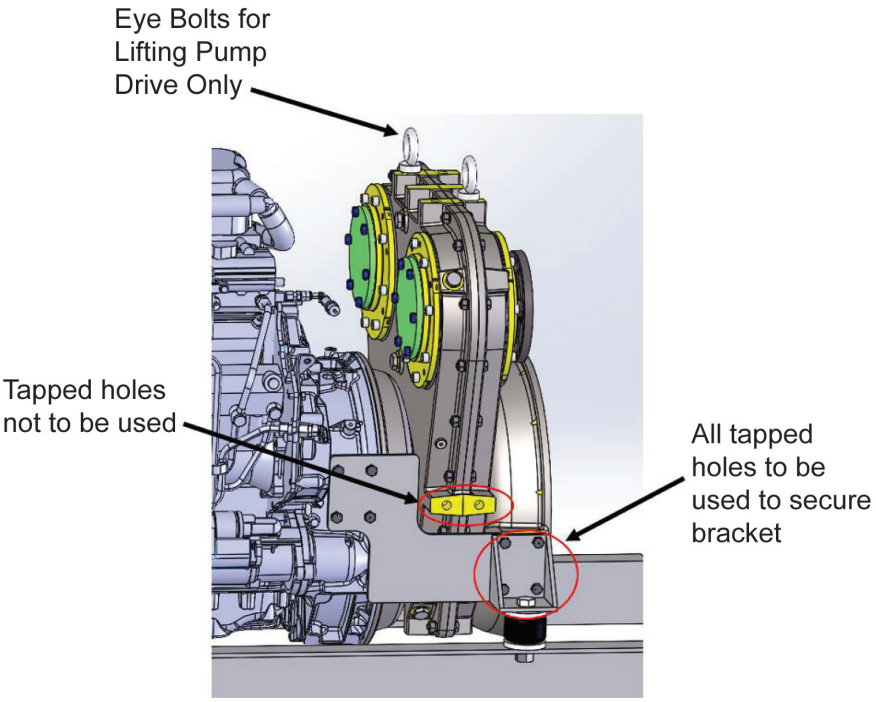


Figure 12. Hole Pattern Usage

Troubleshooting

Table 7. Troubleshooting Chart

Table 7					
Symptom		**Cause**		**Remedy**	
1.	High temperature	1-1	Improper oil level.	1-1	Check and fill (or drain) with proper oil to the correct level.
		1-2	Faulty heat exchanger.	1-2	Inspect, repair or replace heat exchanger.
		1-3	Bearing failure.	1-3	Overhaul Pump Drive.
		1-4	Air leak on suction side of pump.	1-4	Inspect and correct cause of suction leak.
2.	Excessive noise	2-1	Bearing failure.	2-1	Overhaul Pump Drive.
		2-2	Worn or damaged input coupling.	2-2	Remove Pump Drive. Replace worn or damaged coupling.
		2-3	Excessive torsional vibration.	2-3	Select proper torsional coupling.
		2-4	Worn or damaged gears.	2-4	Remove Pump Drive. Overhaul.
		2-5	Improper alignment.	2-5	Check alignment of engine and remove Pump Drive flange to drive shaft. Correct as necessary.
		2-6	Damaged driveline.	2-6	Repair driveline.
		2-7	Misfiring engine.	2-7	Repair engine.

NOTES

Engineering Drawings

List of Engineering Drawings

NOTICE

Part numbers listed in the engineering drawings that follow are for reference only. Refer to your bill of materials for part numbers specific to your application.

NOTES

NOTES:

1. Installation
- Oil changes should be made every 1000 hours or 12 months, whichever occurs first

2. Oil Specification and Fill
- See chart for oil level by position
- See Operator's Manual for recommended oil, checking, and maintenance procedure

3. Breather
- A factory installed breather is loacted on the output side of the unit as shown and has four possible locations based on unit orientation
- Maximum rating of 50 microns

4. Oil Level Fill Procedure:
A. Remove the highest oil fill plug for the corresponding tower configuration
B. Add 3 quarts of oil (See chart for the estimated final oil quantity. The excess oil may spill out through oil level drain port)
C. Reinstall the oil fill plug and tighten to 20 ± 2 N-m (15 lbf-ft)
D. Remove designated oil level drain plug for the required tower configuration per drawing 1037680
E. If oil drains from oil level drain port, wait until the excess oil has stopped draining from the port, and then install and tighten the oil level drain plugs to 20 ± 2 N-m (15 ± 2 lbf-ft)
F. If no oil drains from oil level drain port, reinstall oil level drain plug, add additional oil and repeat process from step C.

EXTERNAL COOLING CIRCUIT (WHEN REQUIRED):

5. Cooling Requirments
- Twin Disc or Customer supplied
- Minimum oil temperature at start up: -40˚F (-40˚C)
- Oil temperature at steady operating conditions: 100˚F - 185˚F (38˚C -85˚C)
- Recommended inlet temperature of heat exchanger: 170˚F (77˚C)
- Recommended outlet temperature of heat exchanger: 150˚F (66˚C)
- Oil flow to heat exchanger from PTO: See charge pump specifications
- The equivalent heat generation of the AM080 is calculated as 3% of the total power delivered through the pump drive. In a dust heavy enviroment it is recommended that a larger heat exchanger be used.
- WARNING: Heat exchanger operating pressure range must exceed peak system pressure

6. Charge Pump Specifications
- Twin Disc or Customer supplied
- Minimum oil flow at engine idle: 1 gpm (3.79 L/min)
- Maximum oil flow at max operating speed: 3 gpm (11.36 L/min)
- Maximum oil flow at max operating speed: 3 gpm (11.36 L/min)
- Pump rotation is CCW if placed on tower pad. See rotation arrows on diagram.

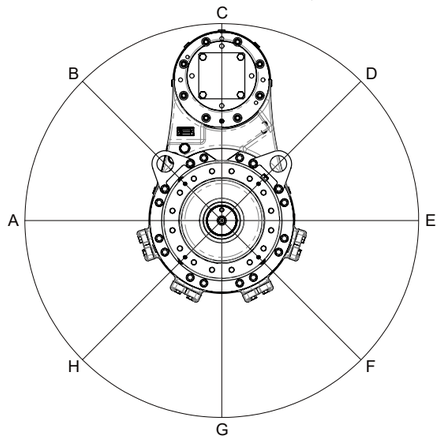
7. Filtration Requirements
- Twin Disc or Customer supplied
- Requirements: Beta removal efficiency rating 2/20/75 for particle sizes 5micro/13micro/16micro
- Typical filter elements read “5 micro nominal” or “16 micro absolute”
- WARNING: Filter operating pressure range must exceed peak system pressure
- WARNING: Improper filtration may reduce life

8. Hose Types
- Customer Supplied
- Must meet SAE J517 specifications for 100R series hydraulic hose, see figure for more details

9. Fittings
- Must meet SAE J514, SAE J476, SAE J518, ISO 6149 specifications

Ⓐ

TOWER POSITION CHART:
(AS VIEWED FROM OUTPUT, CURRENTLY SHOWN IN POSITION C)



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	DUAL TOWER	SINGLE TOWER
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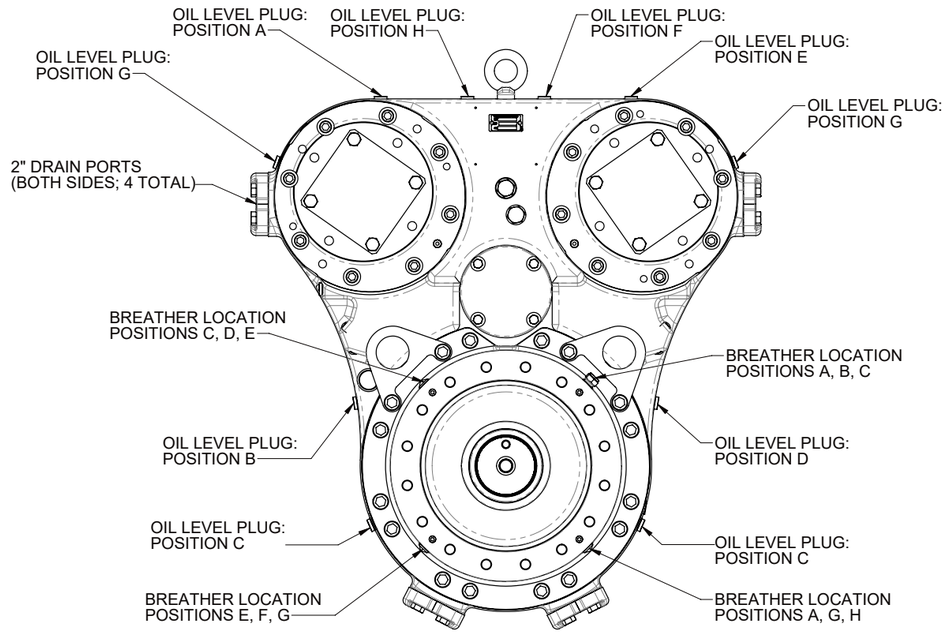
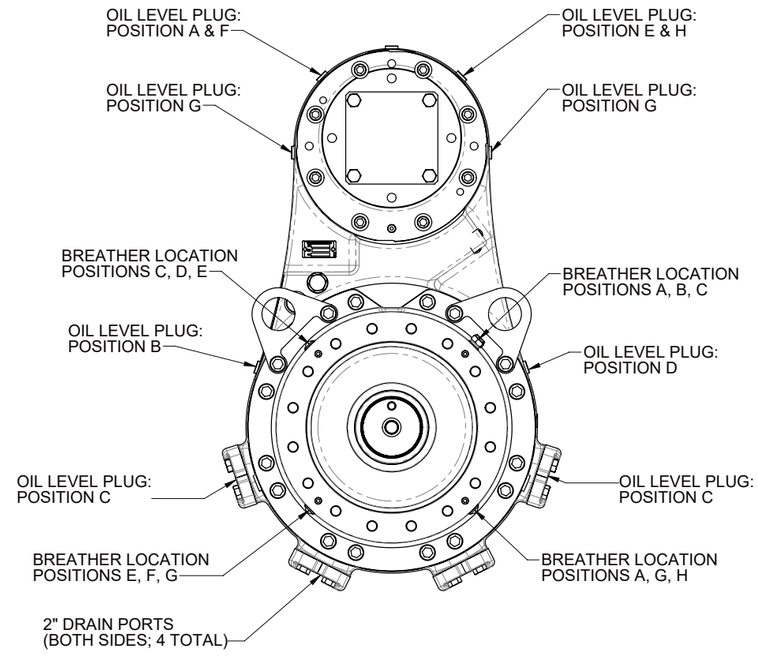
G	2.5 (2.4)	1.5 (1.4)
H	2.5 (2.4)	2.5 (2.4)





REV	CHANGE NO.	DATE
A	ECNWF-103918	09/11/2024

FIRST USE ASSEMBLY:
FIRST USE MODEL:
SIMILAR TO:
WEIGHT: kg
WR²: kg-m²

METRIC

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THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED
MACHINED DIMENSIONS
X ±0.75
X.X ±0.25
X.XX ±0.13
ALL ANGULAR TOLERANCES ±1°
GEOMETRIC TOLERANCING PER ASME Y14.5M 1994

MATERIAL:
HEAT TREAT:
DESCRIPTION: DIAGRAM, PIPING AM080

DATE: 05/02/2019
SCALE: 1:6
DRAWN BY: JEL
CHECKED BY: TS
APPROVED BY: JEL

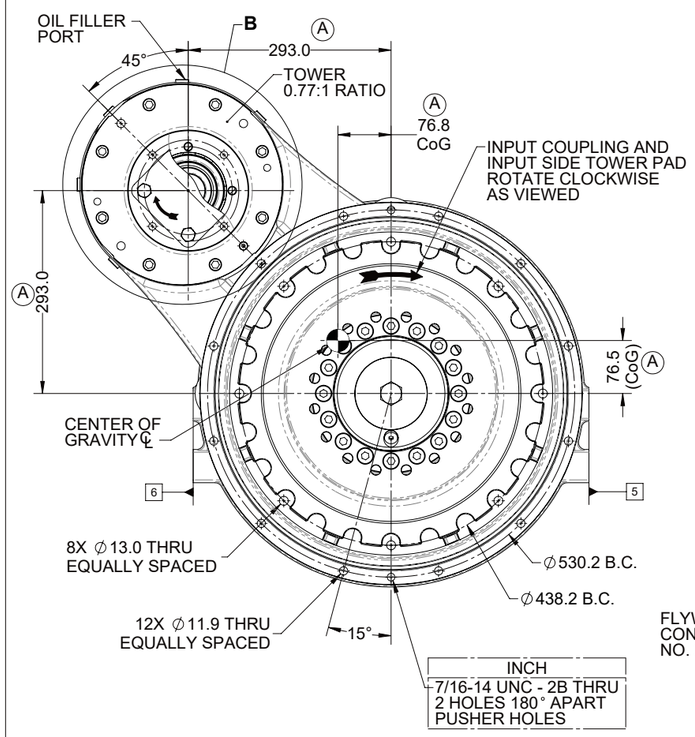
TWIN DISC
RACINE, WI 53403 - USA

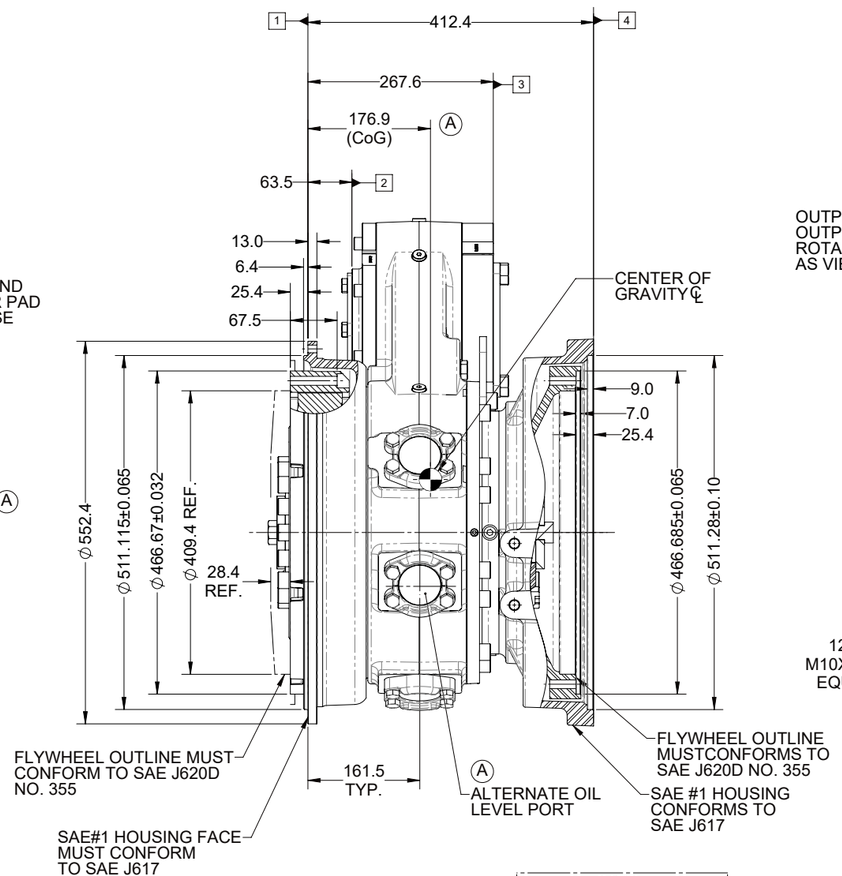
1037680

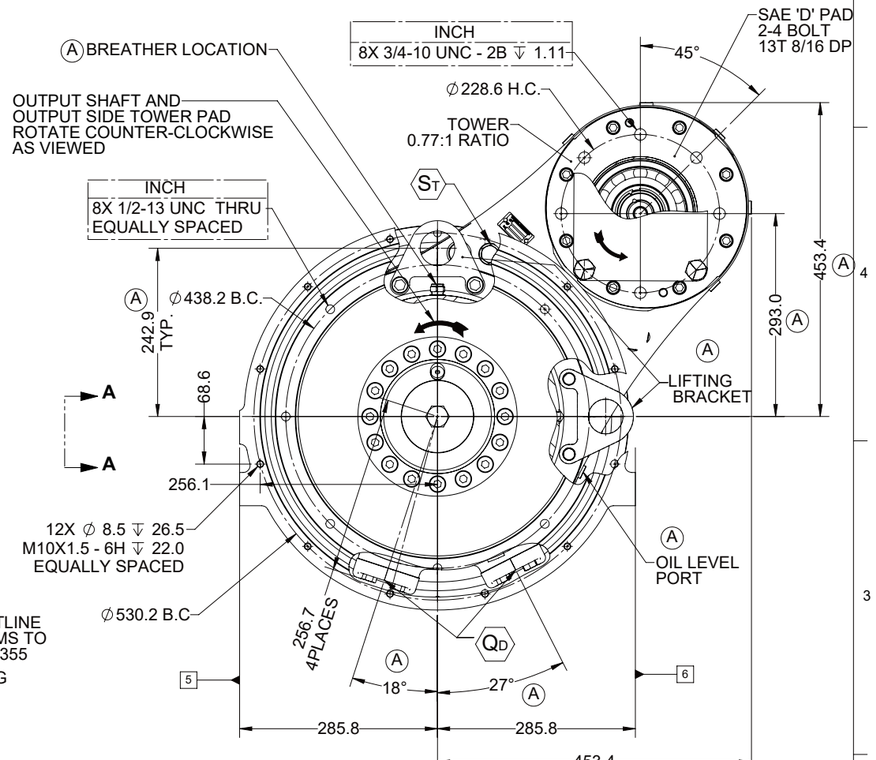
DWG SIZE: A2 | SHEET: 1 OF 1 | REV: A

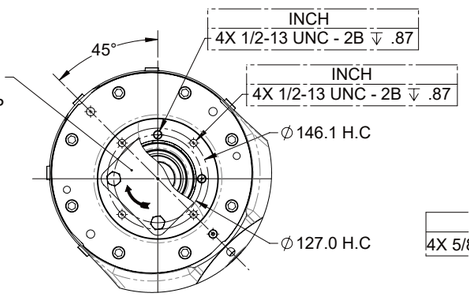
1025420W Rev.B

1 ENGINE FLYWHEEL HOUSING MOUNTING FACE
2 INPUT SIDE PUMP MOUNTING FACE
3 OUTPUT SIDE PUMP MOUNTING FACE
4 OUTPUT FLYWHEEL MOUNTING FACE
5 LEFT MOUNTING BRACKET FACE
6 RIGHT MOUNTING BRACKET FACE

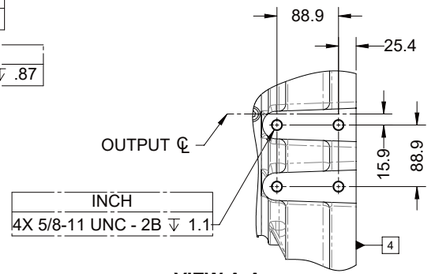




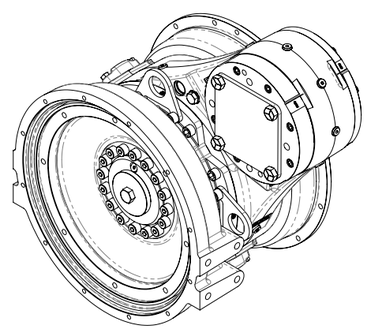




DETAIL B (A)



VIEW A-A
MOUNTING PAD
TYP. OF 2 PLACES



(A)

OIL LEVEL FILL PROCEDURE:

1. REMOVE THE DESIGNATED OIL FILL PLUG
2. ADD 3 QUARTS OF OIL
3. REINSTALL THE OIL FILL PLUG AND TIGHTEN TO 20 ±2 N-m (15 ±2 lbf-ft)
4. REMOVE DESIGNATED OIL LEVEL DRAIN PLUG
5. IF OIL DRAINS FROM OIL LEVEL DRAIN PORT, WAIT UNTIL THE EXCESS OIL HAS STOPPED DRAINING FROM THE PORT, AND THEN INSTALL AND TIGHTEN THE OIL LEVEL DRAIN PLUG TO 20 ±2 N-m (15 ±2 lbf-ft)
6. IF NO OIL DRAINS FROM OIL LEVEL DRAIN PORT, REINSTALL OIL LEVEL DRAIN PLUG, ADD ADDITIONAL OIL AND REPEAT PROCESS FROM STEP 3.

TEST PORTS

SYMBOL	DESCRIPTION	PORT/ STANDARD	DESCRIPTION	CLEARANCE FOR REMOVAL (mm)	ELECTRICAL CONNECTION
Q_D	DRAIN PORTS	M48X2.0 STRAIGHT THD. OR SIZE 51 / ISO 6162 (CODE 61) M12 X 1.75 - Gr.10.9	FLANGE PORT	-	-
S_T	SPEED SENSOR PORT (53 PULSES PER REV.)	5/8" -18 / UNF	FLAT FACE PORT	-	-
	OIL LEVEL PORTS	M48X2.0 STRAIGHT THD. OR SIZE 51 / ISO 6162 (CODE 61) M12 X 1.75 - Gr.10.9	FLANGE PORT	-	-
	OIL FILLER PORTS	M14 X 1.5	FACE SEAL PLUG	12	-

(A)

NOTES:

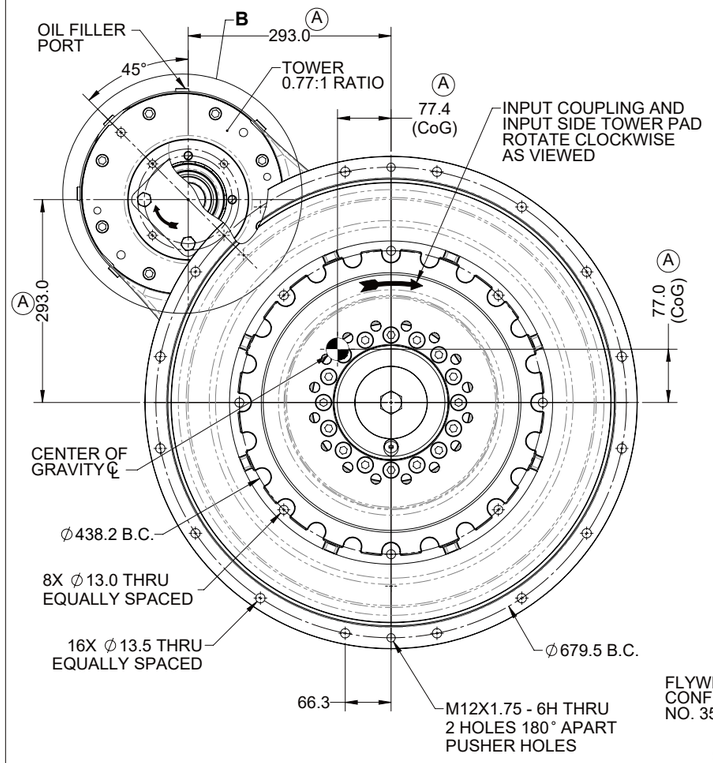
A. ALL POINTS AVAILABLE FOR TESTING ARE CODED ⬡
B. ALL PLUGS AND TEST PORTS ⬡ TO BE TORQUED PER S574 O-RING PORT SPECIFICATIONS
C. REFER TO MANUAL FOR RECOMMENDED OIL, CHECKING AND MAINTENANCE PROCEDURES

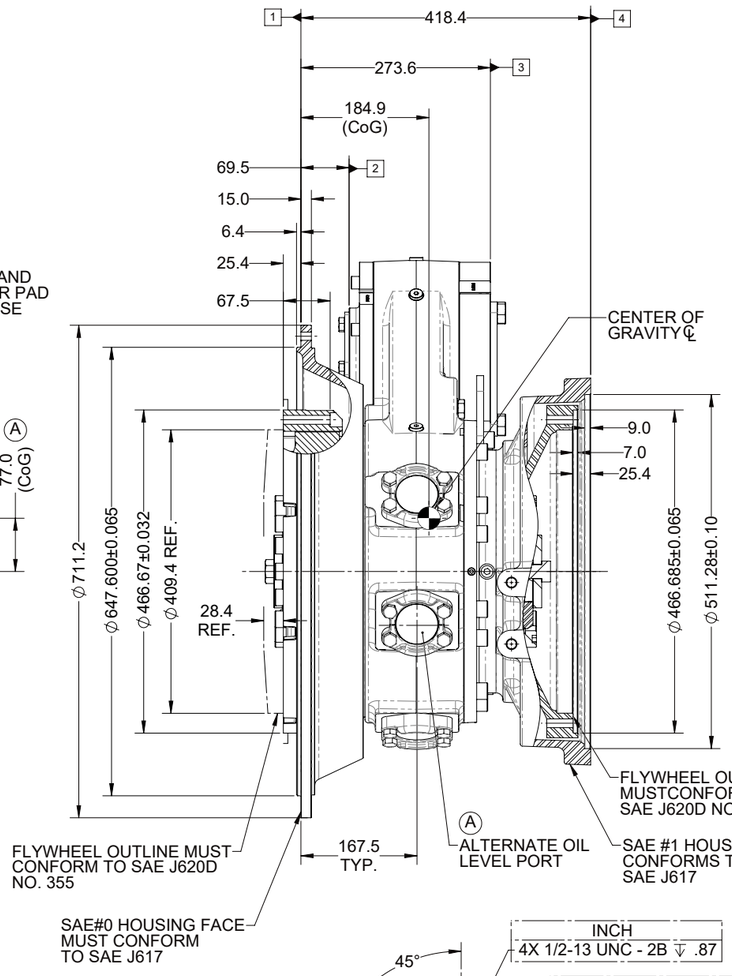
REV.	CHANGE NO.	DATE
A	ECNWF-103918	09/11/2024

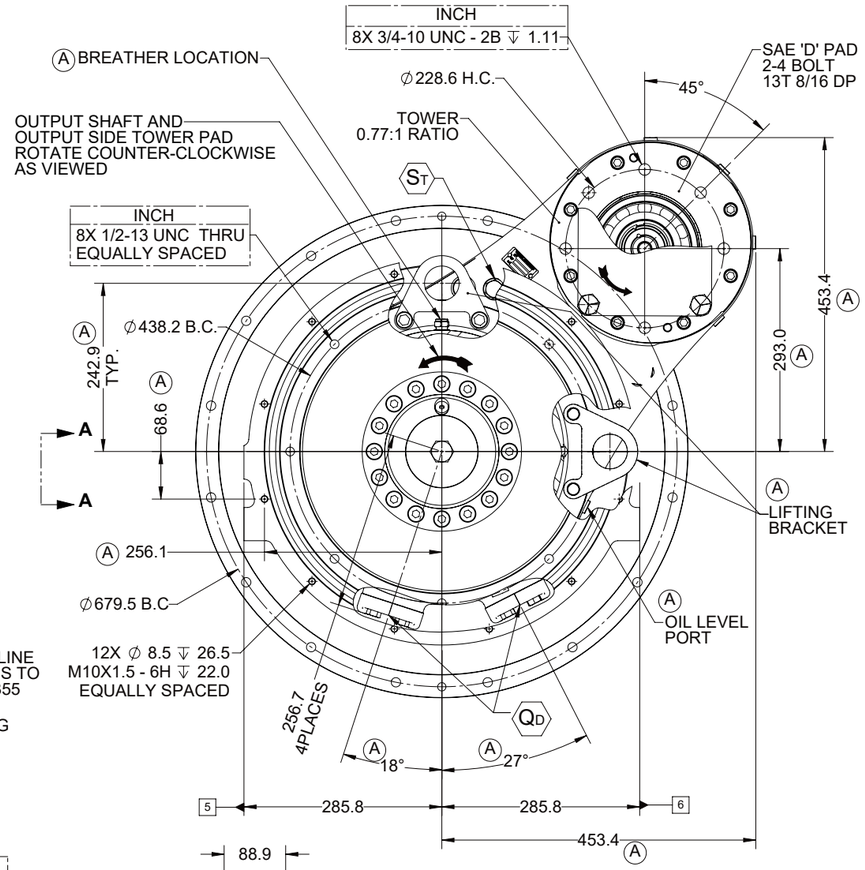
FIRST USE ASSEMBLY:
FIRST USE MODEL:
SIMILAR TO:
WEIGHT: 389 kg
THIRD ANGLE PROJECTION
METRIC
UNLESS OTHERWISE SPECIFIED MACHINED DIMENSIONS X ±0.75 X.X ±0.13 X.XX ±0.03 ALL ANGULAR TOLERANCES ±1° GEOMETRIC TOLERANCING PER ASME Y14.5M 1994
MATERIAL:
HEAT TREAT:
DESCRIPTION: INSTALLATION PUMP DRIVE, AM080
DATE: 06/01/2023
SCALE: 1:4
DRAWN BY: LT
CHECKED BY: MWP
APPROVED BY: ALC
DWG SIZE: A1
SHEET: 1 OF 1
REV: A
TWIN DISC
RACINE, WI 53403 - USA
1029995K

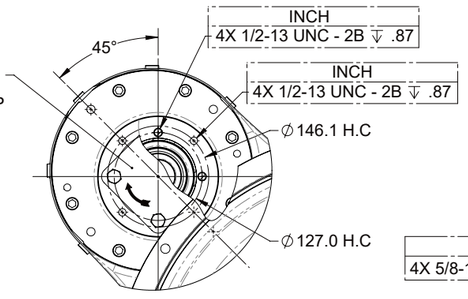
1025420W Rev. A

1 ENGINE FLYWHEEL HOUSING MOUNTING FACE
2 INPUT SIDE PUMP MOUNTING FACE
3 OUTPUT SIDE PUMP MOUNTING FACE
4 OUTPUT FLYWHEEL MOUNTING FACE
5 LEFT MOUNTING BRACKET FACE
6 RIGHT MOUNTING BRACKET FACE

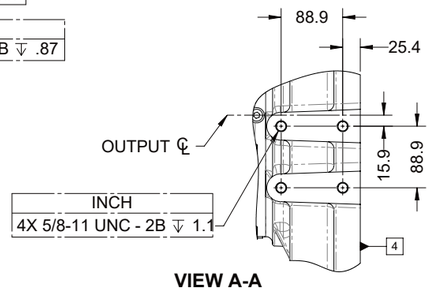




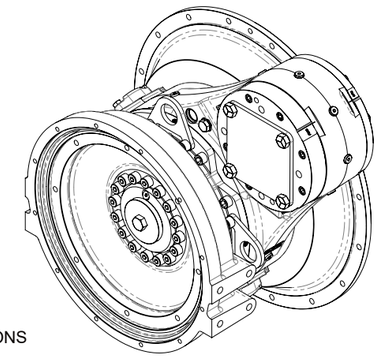




DETAIL B Ⓐ



VIEW A-A
MOUNTING PAD
TYP. OF 2 PLACES



Ⓐ

OIL LEVEL FILL PROCEDURE:

1. REMOVE THE DESIGNATED OIL FILL PLUG
2. ADD 3 QUARTS OF OIL
3. REINSTALL THE OIL FILL PLUG AND TIGHTEN TO 20 ±2 N-m (15 ±2 lbf-ft)
4. REMOVE DESIGNATED OIL LEVEL DRAIN PLUG
5. IF OIL DRAINS FROM OIL LEVEL DRAIN PORT, WAIT UNTIL THE EXCESS OIL HAS STOPPED DRAINING FROM THE PORT, AND THEN INSTALL AND TIGHTEN THE OIL LEVEL DRAIN PLUG TO 20 ±2 N-m (15 ±2 lbf-ft)
6. IF NO OIL DRAINS FROM OIL LEVEL DRAIN PORT, REINSTALL OIL LEVEL DRAIN PLUG, ADD ADDITIONAL OIL AND REPEAT PROCESS FROM STEP 3.

TEST PORTS

SYMBOL	DESCRIPTION	PORT/ STANDARD	DESCRIPTION	CLEARANCE FOR REMOVAL (mm)	ELECTRICAL CONNECTION
QD	DRAIN PORTS	M48X2.0 STRAIGHT THD. OR SIZE 51 / ISO 6162 (CODE 61) M12 X 1.75 - Gr.10.9	FLANGE PORT	-	-
ST	SPEED SENSOR PORT (53 PULSES PER REV.)	5/8" -18 / UNF	FLAT FACE PORT	-	-
	OIL LEVEL PORTS	M48X2.0 STRAIGHT THD. OR SIZE 51 / ISO 6162 (CODE 61) M12 X 1.75 - Gr.10.9	FLANGE PORT	-	-
	OIL FILLER PORTS	M14 X 1.5	FACE SEAL PLUG	12	-

Ⓐ

NOTES:

A. ALL POINTS AVAILABLE FOR TESTING ARE CODED ⬡
B. ALL PLUGS AND TEST PORTS ⬡ TO BE TORQUED PER S574 O-RING PORT SPECIFICATIONS
C. REFER TO MANUAL FOR RECOMMENDED OIL, CHECKING AND MAINTENANCE PROCEDURES

REV.	CHANGE NO.	DATE
A	ECNWF-103918	09/11/2024

FIRST USE ASSEMBLY:
FIRST USE MODEL:
SIMILAR TO:
WEIGHT: 425 kg
WR²: kg-m
THIRD ANGLE PROJECTION
METRIC
UNLESS OTHERWISE SPECIFIED MACHINED DIMENSIONS X ±0.75, X.X ±0.25, X.XX ±0.13, ALL ANGULAR TOLERANCES ±1° GEOMETRIC TOLERANCING PER ASME Y14.5M 1994
MATERIAL:
HEAT TREAT:
DESCRIPTION: INSTALLATION PUMP DRIVE, AM080
DATE: 01/25/2024
SCALE: 1:4
DRAWN BY: DPK
CHECKED BY: MWP
APPROVED BY: ALC
DWG SIZE: A1
SHEET: 1 OF 1
REV: A

TWIN DISC
RACINE, WI 53403 - USA
1029995M

102542OW Rev. A

F E D C B A

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1033752

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