



SCREW SIZE INCHES	TIGHTENING TORQUE	
	FT.-LBS.	NEWTON-METER
1/2-13	75	102
5/8-11	151	205
3/4-10	266	362
7/8-9	400	544
1-8	500	680
1-1/8-8	500	680
1-1/4-8	500	680
1-1/2-8	500	680

**NOTES:**

131. TORQUES ARE PREDICTED ON DEVELOPING 75% OF PROOF LOADS FOR SAE J429 GRADE 5 SCREWS, EXCEPT FOR THOSE 1" THRU 1-1/2", WHICH ARE BASED ON REASONABLE TORQUES THAT CAN BE FACTORY AND FIELD APPLIED.

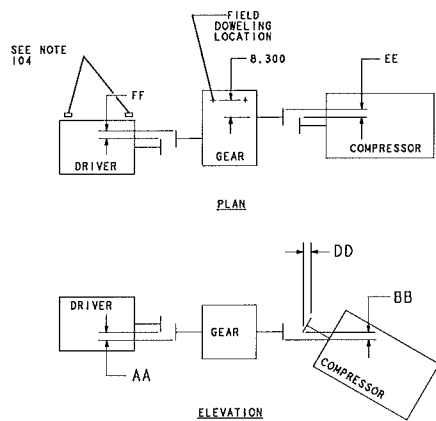
132. SCREWS ARE TO BE INSTALLED DRY.

**DRIVELINE COMPONENT  
BOLTING TORQUE**

ENGLISH = INCHES					
AMBIENT TEMP.	AA	BB	DD	EE	FF
40°F	.0103	.026	.002	.0039	.0251
60°F	.0072	.0258	.002	.0029	.022
80°F	.0041	.0256	.002	.0018	.0188
100°F	.0011	.0253	.002	.0008	.0157
120°F	-.002	.0251	.002	-.0003	.0126

METRIC = mm					
AMBIENT TEMP.	AA	BB	DD	EE	FF
10°C	.222	.657	.051	.086	.597
20°C	.152	.652	.051	.062	.526
30°C	.082	.647	.051	.038	.455
40°C	.011	.643	.051	.014	.384
50°C	-.059	.639	.051	-.01	.313



COMPR. AXIAL SHAFT GROWTH = 0.011" [0.280] AT 50°F [10°C] AMBIENT  
-0.005" [-0.127] AT 104°F [40°C] AMBIENT

**NOTES:**

- 101. FIGURES ARE DISPLAYED AT 68°F [20°C] AMBIENT TEMPERATURE.
- 102. DIAL INDICATOR READING SHOULD BE TWICE SHAFT MISALIGNMENT, EXCEPT TILT.
- 103. A HOT FINAL ALIGNMENT MUST BE MADE WHILE COMPONENTS ARE NEAR OPERATING TEMPERATURE.
- 104. FIGURES ARE BASED ON SECURING MOTOR AND COMPRESSOR WITH HORIZONTAL JACKING SCREWS, GEAR WITH DOWELS WHERE SHOWN. MISALIGNMENT MEASURES FROM RIM OF COUPLING HUBS. TOLERANCE ±.001.

**COLD MISALIGNMENT**

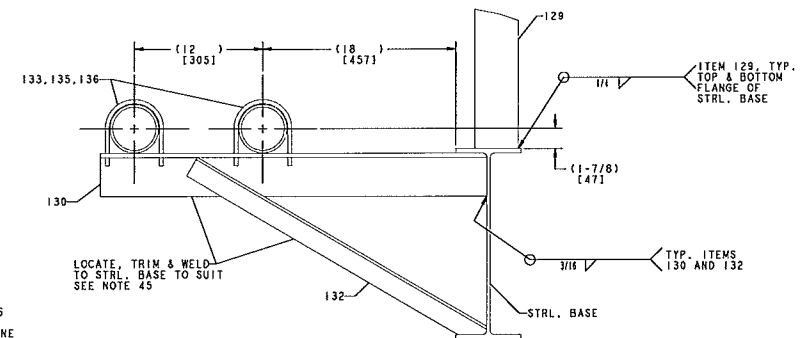
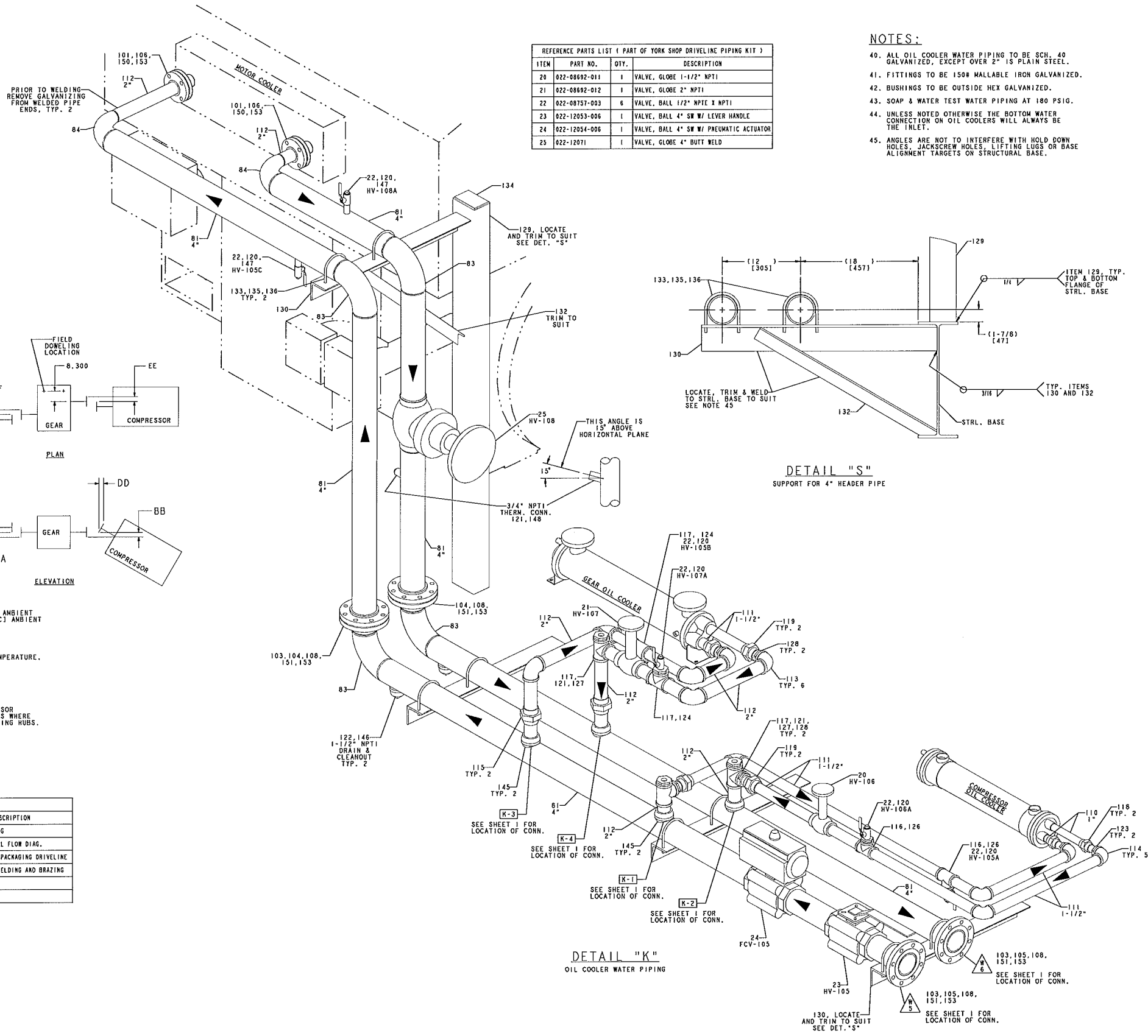
YORK REFERENCE DRAWINGS			
DWG. NO.	DESCRIPTION	DWG. NO.	DESCRIPTION
071-25017-000	COMPONENTS RIGGING	081-17976-000	COMPR. ERECTING
071-10969-000	BOLT TORQUE INSTRUCTION	081-17944-000	COMPR. LUBE OIL FLOW DIAG.
076-78525-000	FLOW DIAG. LEGEND	077-25857-000	INSTRUCTIONS, PACKAGING DRIVELINE
077-31585-000	REFRIG. & WATER FLOW DIAG.	099-02818-000	INSTRUCTION, WELDING AND BRAZING
077-32303-000	UNIT, TITAN, QW-5090		

APPROX. OPERATING WEIGHTS		
	LBS.	[KG]
COMPR.	28,000	12,701
MOTOR	26,800	12,156
SPEED INCREASER	4,100	1,850
DRIVE BASE	11,850	5,375
MISC.	4,070	1,846
<b>TOTAL</b>	<b>74,820</b>	<b>33,938</b>

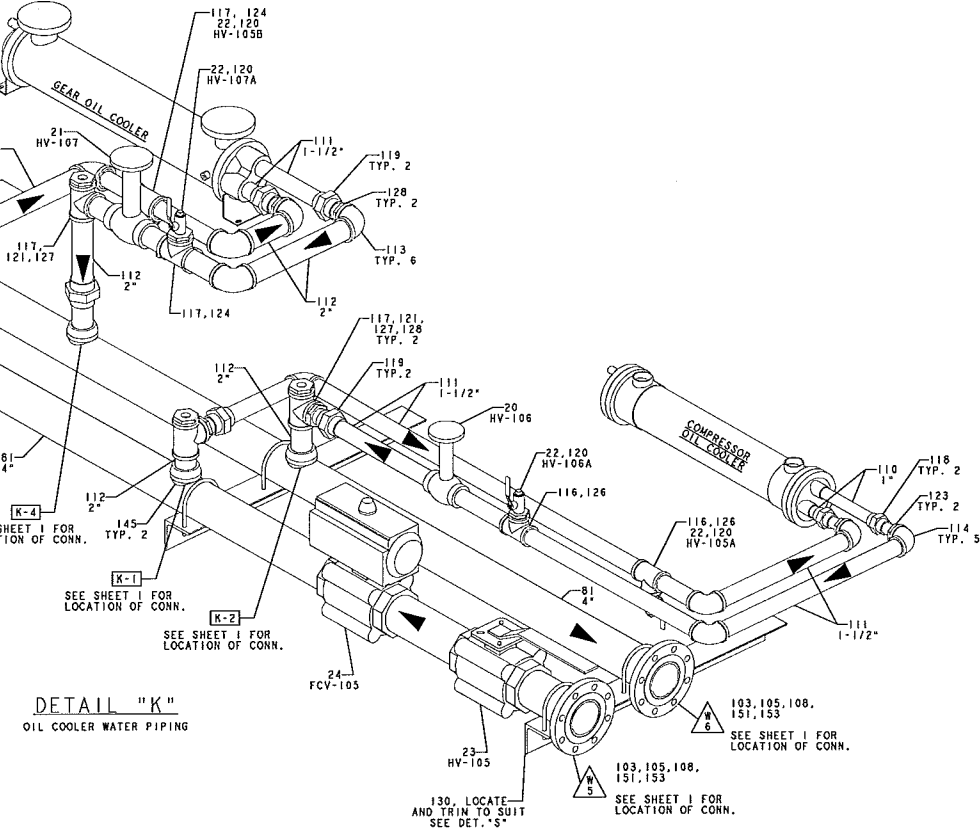
REFERENCE PARTS LIST (PART OF YORK SHOP DRIVELINE PIPING KIT)			
ITEM	PART NO.	QTY.	DESCRIPTION
20	022-08692-011	1	VALVE, GLOBE 1-1/2" NPTI
21	022-08692-012	1	VALVE, GLOBE 2" NPTI
22	022-08757-003	6	VALVE, BALL 1/2" NPTI X NPTI
23	022-12053-006	1	VALVE, BALL 4" SW W/ LEVER HANDLE
24	022-12054-006	1	VALVE, BALL 4" SW W/ PNEUMATIC ACTUATOR
25	022-12071	1	VALVE, GLOBE 4" BUTT WELD

**NOTES:**

- 40. ALL OIL COOLER WATER PIPING TO BE SCH. 40 GALVANIZED, EXCEPT OVER 2" IS PLAIN STEEL.
- 41. FITTINGS TO BE 150# MALLEABLE IRON GALVANIZED.
- 42. BUSHINGS TO BE OUTSIDE HEX GALVANIZED.
- 43. SOAP & WATER TEST WATER PIPING AT 180 PSIG.
- 44. UNLESS NOTED OTHERWISE THE BOTTOM WATER CONNECTION ON OIL COOLERS WILL ALWAYS BE THE INLET.
- 45. ANGLES ARE NOT TO INTERFERE WITH HOLD DOWN HOLES, JACKSCREW HOLES, LIFTING LUGS OR BASE ALIGNMENT TARGETS ON STRUCTURAL BASE.



**DETAIL "S"**  
SUPPORT FOR 4" HEADER PIPE



**DETAIL "K"**  
OIL COOLER WATER PIPING

NOTE: DIMENSIONS INDICATED THUS [ ] ARE IN MILLIMETERS ALL OTHERS ARE IN FEET AND/OR INCHES

**YORK INTERNATIONAL CORPORATION**  
YORK, PA 17405

REV. DATE	EC. NO.	DR.	CHK.	ENG.
REVISE "EE" VALUE IN COLD MISALIGNMENT CHART ON SHEET 2	001-2520	RJP	RJP	

SCALE: 1/8" = 1'-0"

DWG. UNIT	INTERNATIONAL	REVISED DATE	18-OCT-2010
DRIVELINE	00-5130	REVISED BY	J.B. BUTTELER
CASE NO.	66935	DRIVING NUMBER	077-32079-000
REV. DATE	21-OCT-2010	SCALE	1/8" = 1'-0"

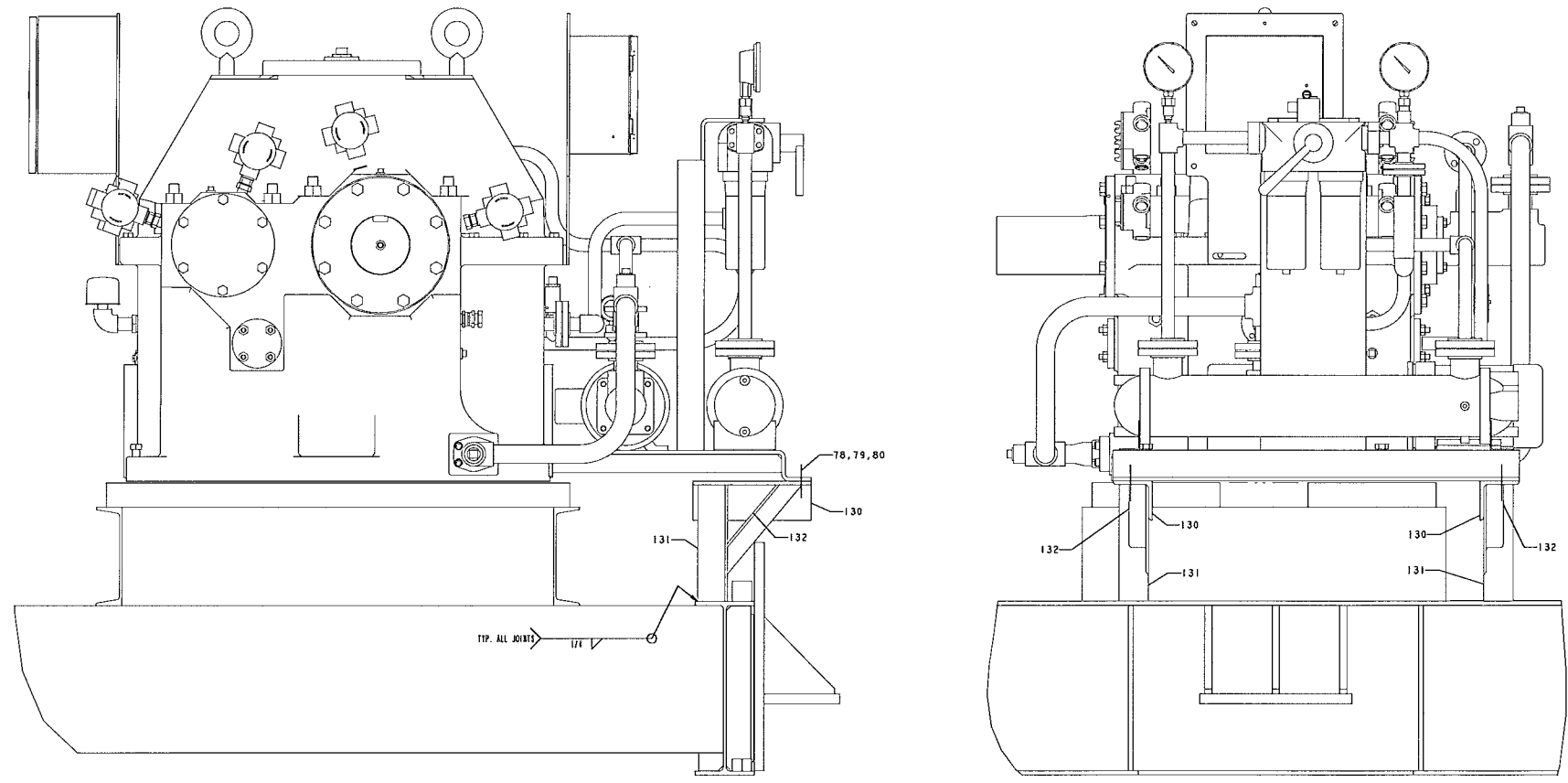
REV.	DATE	EC. NO.	DR.	CHK.	ENG.
REVISE "EE" VALUE IN COLD MISALIGNMENT CHART ON SHEET 2	00-5130	001-2520	RJP	RJP	

NOTES TO SHOP:

- THIS DRIVELINE IS TO BE SHIPPED COMPLETELY ASSEMBLED AS SHOWN. PIPE CPLG'S. AND PIPE TAPS TO BE PLUGGED FOR TESTING AND SHIPPING.
- PIPING AND COMPONENTS ARE TO BE PROPERLY BRACED AND SUPPORTED FOR OPERATION AND SHIPPING. TEMPORARY, REMOVABLE SHIPPING SUPPORTS TO BE STENCILED "SHIPPING SUPPORT".
- PIPE IS DESIGNATED BY NOM. SIZE AND WALL AS FOLLOWS: (EXCEPT AS NOTED)  
 3/4" AND SMALLER SCH. 80  
 1" THRU 1 1/2" SCH. 40  
 12" THRU 22" .375" W.L., DWP = 300 PSIG MAX.  
 24" AND 26" .375" W.L., DWP = 261 PSIG MAX., .500 W.L., DWP = 262 THRU 300 PSIG  
 28" AND 30" .375" W.L., DWP = 226 PSIG MAX., .500 W.L., DWP = 227 THRU 300 PSIG
- TUBING IS DESIGNATED AS FOLLOWS: STEEL- O.D. STL., COPPER- O.D., STAINLESS STEEL- O.D. SST.
- USE WELD TYPE FITTINGS AS FOLLOWS: (EXCEPT WHERE NOTED)  
 2" AND SMALLER- SOCKET WELD REDUCERS- CONCENTRIC  
 2-1/2" AND LARGER- BUTT WELD ELBOWS- LONG RADIUS
- USE SCREWED FITTINGS AS FOLLOWS: (EXCEPT WHERE NOTED)  
 FITTINGS- FORGED STEEL, BUSHINGS- STEEL OUTSIDE HEX
- USE ASME FLANGES WHERE NOTED, AND/OR WHERE REQUIRED FOR VALVES, COMPRESSOR CONN., ETC., AS FOLLOWS: (EXCEPT WHERE NOTED)  
 2" AND SMALLER- SOCKET WELD 2-1/2" AND LARGER- SLIP-ON  
 FLANGE BOLT HOLES SHALL STRADDLE E' S.
- CUSTOMER CONNECTIONS (INCLUDING ANCHOR BOLT HOLES) SHALL HAVE A LOCATION TOLERANCE OF ±1/4". FLANGE FACES SHALL BE WITHIN 1/8" PER 12" OF THE PLANE INDICATED ON THE DRAWING.
- ON COMPONENTS SUCH AS COMP. GEARS, MOTORS OR TURBINES, GAUGES SHOULD BE REPIPED AND THERMOMETERS SHOULD BE ROTATED TO A POSITION WHERE THEY CAN BE EASILY READ.
- PIPING FABRICATION, ASSEMBLY, TEST AND INSPECTION TO BE IN ACCORDANCE WITH ASME B31.5 CODE. SEE DWG. 099-02818C FOR WELDING PROCEDURES.
- ITEMS INDICATED THUS  $\circ$  APPEAR ON MISC. MAT'L. KIT FOR FIELD ASSEMBLY.
- PREPARE SURFACE AND PAINT SYSTEM COMPONENTS PER INSTRUCTIONS ON SALES ORDER, EXCEPT PANEL IS PAINTED BY VENDOR. SEAL WELDING IS NOT REQUIRED.
- AREAS DIFFICULT TO PAINT AFTER ASSEMBLY ON DRIVELINE SUCH AS FLANGE FACES (EXCEPT GASKET SURFACE), BOLT HOLES, AREAS BETWEEN COMPONENTS ON PIPE AND SUPPORTS, UNDERSIDE OF BASE MOUNTED COMPONENTS, ETC., SHALL BE PAINTED PRIOR TO ASSEMBLY ON SYSTEM.
- $\circ$   $\frac{3-.001}{111}$  ALL PIPE AND ANGLE SUPPORTS TO BASE AND SHELL SUPPORTS TO SHELLS.
- ALL MULTI-STAGE COMPRESSORS MUST HAVE 1/8" OF SHIMS BEFORE MOUNTING AND ALIGNING THE REMAINING DRIVELINE COMPONENTS.
- MULTI-STAGE TURBO COMP. UNITS:  
 SHIM DRIVELINE AND ALIGN SHAFTS PER COLD ALIGNMENT TABLE USING JET LUBE 464-14934-000 ON THE COMPRESSOR QUILL SHAFT LARGE THREADS (NUT TO QUILL, NUT TO HUB AND NUT TO PINION) ONLY. DO NOT LUBRICATE THE CLAMPING SURFACES OF THE DISC AND CLAMP RINGS.  
 MULTI-STAGE TURBO COMP. UNITS WITH RIVERHAWK COUPLING:  
 SHIM DRIVELINE AND ALIGN SHAFTS PER COLD ALIGNMENT TABLE. INSURE THAT SHAFTS AND HUB BORES ARE OIL FREE AND DRY BY CLEANING WITH DENATURATED ALCOHOL. INSTALL COUPLING PER RIVERHAWK INSTRUCTIONS. DO NOT LUBRICATE THE COMPRESSOR SHAFT, DRIVER SHAFT OR COUPLING HUB BORES.  
 ALL EXTRA SHIMS TO BE SHIPPED LOOSE WITH UNIT. FOR QUANTITY AND LOCATION OF ADJUSTING LUGS 066-77431, JACKSCREWS 021-18957 AND JAM NUTS 021 00594 SHOP TO CONTACT CONTRACT ENGINEERING. (BULL GEAR FLOAT TO BE .50" TO .060".

NOTES TO SHOP (CONT.):

- SHIM THE DRIVE BASE LEVEL USING THE MACHINED TARGET PADS PRIOR TO MOUNTING AND ALIGNING COMPRESSOR AND DRIVE COMPONENTS. THIS MAY BE DONE USING MACHINIST LEVEL OR OPTICAL METHODS, AT MANUFACTURING ENGINEERS OPTION.  
 USE JACKING SCREWS FOR LEVELING. USE SLOTTED SHIMS AND PLACE AROUND JACK SCREWS. DO NOT ALLOW ANY LOAD ON JACK SCREWS, REMOVE JACK SCREWS PRIOR TO MACHINING AND ASSEMBLY OF DRIVELINE.  
 AFTER ASSEMBLY OF DRIVELINE, RE-CHECK LEVEL BY USING BASE TARGETS. STAMP ANY DEVIATION ON TOP OF EACH TARGET TO THE NEAREST HALF A HUNDRETH OF A FOOT IN DECIMAL INCHES FORWARD (NOTE: ONE HUNDRETH FOOT = .12 INCH). A MINUS READING INDICATES A RISING TREND AT THE BASE. RE-CHECK NOT REQUIRED FOR DRIVELINES SHIPPED LESS GEARS AND/OR DRIVERS.
- REMOVE HIGH SPEED COUPLING AND SHIP LOOSE. DISASSEMBLE LOW SPEED COUPLING AND TAPE FOR SHIPMENT. REPLACE COUPLING GUARDS FOR SHIPMENT.  
 SHIPPING REQUIREMENTS FOR RIVERHAWK COUPLING:  
 REMOVE COUPLING CENTER MEMBERS ONLY. DO NOT REMOVE HUBS. DISASSEMBLE AT LARGER DIA. FLANGES TOWARD COMPRESSOR AND GEAR OR DRIVER. DO NOT DISASSEMBLE SMALLER FLANGES (BOTH PARS ARE PART OF REMOVED CENTER MEMBER). PACKAGE CENTER MEMBER AND FASTENERS AND SHIP LOOSE. REPLACE COUPLING GUARD FOR SHIPMENT.
- FOR LOCATION AND QUANTITY OF PUBLICITY NAMEPLATE 029-13216B, CONTACT CONTRACT ENGINEERING.
- RE-ROUTE WATER AND/OR OIL PIPING OR TUBING AS REQ'D. TO SUIT FINAL CONFIGURATION OF MAJOR COMPONENTS & PRE-PIPED COMPONENT PIPING.  
 DO NOT BLOCK COMPONENTS REQUIRING SERVICE OR REMOVAL SUCH AS OIL COOLER TUBE SERVICE AREA, HEATER REMOVAL AREA, VENTS, DRAINS, INSTRUMENT CONN., ETC.  
 DO NOT EXCEED OVERALL SHIPPING DIMENSIONS.
- SUPPORT WATER AND OIL PIPING AS REQ'D. LOCATE SUPPORTS TO SUIT. DO NOT BLOCK SERVICE OR REMOVAL AREAS. USE ITEMS PROVIDED ON DRIVELINE BILL OF MATERIAL AS FOLLOWS:  
 FOR WATER AND OIL PIPING OR TUBING UP TO 4 INCH. 2" PIPE USE HYDRA-200B CHANNEL & ANCHOR CLAMPS. FOR WATER PIPING OVER 2", USE 3" ANGLE & "U"-BOLTS W/ LK WASH. & NUTS.
- WHEN MOUNTING GEAR AND/OR DRIVER LOW SPEED COUPLING HUB, THE FULL HEIGHT OF THE SHAFT KEYS MUST BE NO LONGER THAN THE COUPLING HUB. REMAINING EXPOSED KEY LENGTH MUST BE STEPPED DOWN TO MATCH SHAFT DIAMETER. FAILURE TO STEP KEY COULD RESULT IN UNBALANCE AND VIBRATION PROBLEMS.
- REFER TO BOLT TORQUE INSTRUCTION DRAWING (SEE YORK REFERENCE DRAWINGS) FOR ALL FLANGE BOLT TORQUE REQUIREMENTS.  
 FOR DRIVELINE COMPONENT BOLTING SEE TABLE.
- SEE BILL OF MAT'L. 377-32079-000 FOR DRIVELINE MATERIAL.
- DRIVELINE TO BE PACKAGED FOR SHIPMENT PER INSTRUCTIONAL DRAWING (SEE YORK REFERENCE DRAWINGS).
- USE LOCTITE SEALANT GRADE 565 OR 567 FOR WATER PIPING AND FITTING THREADED JOINTS, TEMPORARY PLUGS, TEMPERATURE AND PRESSURE INSTRUMENT THREADED JOINTS.  
 USE LOCTITE SEALANT GRADE 577 FOR OIL PIPING AND FITTING THREADED JOINTS.  
 USE LOCTITE SEALANT GRADE 577 FOR STAINLESS STEEL PIPE AND FITTING THREADED JOINTS AND STAINLESS STEEL TO CARBON STEEL PIPE AND FITTING THREADED JOINTS.  
 REFER TO ESG STANDARD N-365 FOR ADDITIONAL INFORMATION.



DETAIL "N"

REV.	DATE	EC. NO.	BY	CHK.	ENG.
C	04-MAY-2011	001-059	JSP		
REVISION: "EC" MAKE IN COLD ALIGNMENT CHART ON SHEET 2					

ALL DIMENSIONS UNLESS OTHERWISE SPECIFIED IN PARAGRAPHS ARE IN INCHES DO NOT SCALE DIMENSIONS IN QUANTITIES IN PARENTHESES ARE QUANTITIES IN PARENTHESES ARE QUANTITIES IN PARENTHESES ARE QUANTITIES IN PARENTHESES PROJECT IS NOT PART OF DRAWING IS NOT TO BE SHIPPED WITHOUT THE SIGNATURE OF THE INTERNATIONAL CORPORATION	<b>YORK INTERNATIONAL CORPORATION</b> YORK, PA 17405 TRUSSABLE INTERNATIONAL DRG. UNIT: INCHES ENG. STD. PART NO. REFERENCE: 131A DATE: 14-OCT-2010 DRAWING NUMBER: 077-32079-000 CASE NUMBER: 66935 DATE: 27-OCT-2010 SCALE: 1:80 SHEET 3 OF 3
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