





SIZE <b>A</b>	DWG NO 362A2940	SH 2	REV -
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## GAS TURBINE PACKAGE CONNECTIONS

PURCHASER CONNECTS AT THESE POINTS. ACCESSORY BASE WILL EXPAND FROM ITS FIXED END A MAXIMUM OF .30 INCHES FORWARD AND A MAXIMUM OF .08 INCHES Laterally. TURBINE BASE WILL EXPAND FROM ITS FIXED POINT A MAXIMUM OF .35 INCHES IN EACH DIRECTION AND A MAXIMUM OF .13 INCHES Laterally. ALL DEVICES AND EQUIPMENT MOUNTED ON ACCESSORY AND TURBINE BASES WILL MOVE A PROPORTIONATE AMOUNT. THEREFORE, PURCHASER'S PIPING SHOULD PERMIT THIS EXPANSION AND NOT PUT A STRAIN ON THE MACHINERY. SPRING HANGERS, COMPANION FLANGES, BOLTS, STUDS, NUTS AND GASKETS FOR PURCHASER CONNECTIONS ARE NOT FURNISHED BY GE POWER GENERATION.

IN ADDITION TO THESE CONNECTIONS, FIELD AND BASE INTERCONNECTING PIPING, SOME OF WHICH MAY BE SUPPLIED BY GE POWER GENERATION, MAY AFFECT THE DESIGN OF THE PURCHASER'S PIPING. FOR INFORMATION CONCERNING THESE PIPING LOCATIONS, SEE ML ITEMS A184 (PIPING ARRANGEMENT - FIELD INTERCONNECT), AND 969A (PIPING ARRANGEMENT - BASE INTERCONNECT).

FOR THE FUEL GAS AND WATER WASH SYSTEMS SUPPLIED ON THIS UNIT, THE INSTALLERS INTERCONNECTING PIPING DOWNSTREAM OF THE CUSTOMER'S LAST FILTER/SEPARATOR TO THE PACKAGE CONNECTION ON THE TURBINE OR ACCESSORY MODULE MUST BE AUSTENITIC STAINLESS STEEL.

SITE CONTRACTOR TO CUT OPENINGS IN OFF-BASE ENCLOSURE WALL FOR INSTALLATION OF FIELD RUN PIPING (THESE CONNECTIONS ARE IDENTIFIED WITH AN ASTERISK (\*) NEXT TO THE APPLICABLE CONNECTION). SEE ML ITEM 1634 FOR TYPICAL METHOD OF SEALING PIPE AT ENCLOSURE OPENINGS WITH FLASHINGS (SUPPLIED).

FOR FIELD FLUSH OF LUBE OIL PIPING REFER TO INSTRUCTIONS UNDER ML A125. CLEAN OTHER EXTERNAL PIPING IN ACCORDANCE WITH STEEL STRUCTURE PAINTING COUNCIL STANDARD SSPC-SP-8 (WHICH DEFINES PICKLING OF PIPE).

PURCHASER CONNECTS AT THE POINTS LISTED BELOW. FOR LOCATIONS OF GAS TURBINE PACKAGE CONNECTIONS, SEE ML ITEM 0313, DRAWING 204D1301.

- CA5) 1.00 (1") CS FEMALE NPT - PLUGGED (1 CONN.) - AIR SUPPLY FOR SELF-CLEANING FILTERS. (SH. 2: A-6, C-6)
- CA20) .75 (3/4") 304L SST FEMALE NPT - PLUGGED (2 CONN.) - LOW POINT DRAIN FOR INLET A/B) AIR HEATING PIPING. (SH. 2: A-5, B-6, C-5)
- CW1) .75 (3/4") CS FEMALE NPT - PLUGGED (2 CONN.) - LUBE OIL HEAT EXCHANGER WATER HEAD DRAIN. (SH. 1: A-4, A-5, C-4, C-5)
- CW2) .75 (3/4") CS FEMALE NPT - PLUGGED (2 CONN.) - LUBE OIL HEAT EXCHANGER WATER HEAD VENT. (SH. 1: B-4, B-5, C-4, C-5)

GENERAL ELECTRIC COMPANY  
GREENVILLE, SC



**GE Power Generation**

DRAWN

TERESA A. MILLWOOD

ISSUED

G. HORNER 01-08-10

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- \*CW6) 6.00 (6") 150# CS RAISED FACE FLANGE (1 CONN.) - COOLING WATER INLET TO LUBE OIL COOLER AND TURBINE SUPPORT LEGS. (SH. 1: A-4, C-4)
- \*CW7) 6.00 (6") 150# CS RAISED FACE FLANGE (1 CONN.) - COOLING WATER OUTLET FROM LUBE OIL COOLER AND TURBINE SUPPORT LEGS. (SH. 1: B-4, C-3)
- FG1) 6.00 (6") 300# SST RAISED FACE FLANGE (1 CONN.) - FUEL GAS INLET. (SH. 2: A-6, D-6)
- FG2) 2.00 (2") 300# SST RAISED FACE FLANGE (1 CONN.) - FUEL GAS STRAINER BLOWDOWN. (TO BE VENTED TO A SAFE AREA). (SH. 2: A-6, D-6)
- FG3) 1.00 (1") 304 SST TUBE (1 CONN.) – GAS COMPARTMENT VALVE VENT. (SH. 2: B-6, D-6)
- \*FP1) 2.00 (2") CS FEMALE NPT (1 CONN.) - INITIAL DISCHARGE FOR FIRE PROTECTION SYSTEM, ACCESSORY AND TURBINE COMPARTMENTS. FOR PIPING REQUIREMENTS BETWEEN SKID AND ACCESSORY BASE, SEE NOTES DRAWING ON ML ITEM 0326. (SH. 2: B-7, D-7)
- \*FP2) .50 (1/2") CS FEMALE NPT (1 CONN.) - EXTENDED DISCHARGE FOR FIRE PROTECTION SYSTEM, ACCESSORY AND TURBINE COMPARTMENTS. FOR PIPING REQUIREMENTS BETWEEN SKID AND ACCESSORY BASE, SEE NOTES DRAWING ON ML ITEM 0326. (SH. 2: B-6, D-7)
- FP4) 1.50 (1-1/2") CS FEMALE NPT (1 CONN.) - INITIAL DISCHARGE FOR FIRE PROTECTION SYSTEM LOAD COMPARTMENT AND NO. 3 BEARING TUNNEL. FOR PIPING REQUIREMENTS BETWEEN SKID AND TURBINE BASE, SEE NOTES DRAWING ON ML ITEM 0326. (SH. 2: B-4, D-4)
- FP5) .50 (1/2") CS FEMALE NPT (1 CONN.) - EXTENDED DISCHARGE FOR FIRE PROTECTION SYSTEM LOAD COMPARTMENT AND NO. 3 BEARING TUNNEL. FOR PIPING REQUIREMENTS BETWEEN SKID AND TURBINE BASE, SEE NOTES DRAWING ON ML ITEM 0326. (SH. 2: B-4, D-4)
- FP13) .50 (1/2") CS FEMALE NPT (1 CONN.) – INITIAL DISCHARGE – GENERATOR COLLECTOR COMPARTMENT. (SH. 4: B-3,C-3)
- FP14) .75 (3/4") CS FEMALE NPT (1 CONN.) – EXTENDED DISCHARGE – GENERATOR COLLECTOR COMPARTMENT. (SH. 4: B-3, C-3)
- IE2) 1.50 (1-1/2") GALV CS FEMALE NPT (1 CONN.) - AIR INLET TO GAS TURBINE SELF-CLEANING FILTER COMPARTMENT. (SH. 1: B-6, D-6)
- IE3) 1.00 (1") CS NPT (1 CONN.) - COMPRESSED AIR INLET FOR GENERATOR SELF-CLEANING FILTERS. (SH. 4: B-5, C-5)

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- IE4) 1.00 (1") CS FEMALE NPT VALVE - PLUGGED (1 CONN.) - INLET PLENUM DRAIN. THIS LINE MUST HAVE A SHUT-OFF VALVE AND, IF REQUIRED, BE HEAT TRACED TO PREVENT FREEZING IN THE WINTER. (SEE WATER WASH PIPING SCHEMATIC DIAGRAM, ML ITEM 0442). (SH. 2: A-6, B-6)
- IE23) 6.00 (6") CS MALE NPT – CAPPED (1 CONN.) – EXHAUST STACK RAINWATER DRAIN. (SH. 2: A-3, B-3)
- IH7) .50 (1/2") SST NPT AIR SUPPLY TO VA20-1 FOR CONTROL (1 CONN.) – DRY INSTRUMENT AIR FROM CUSTOMER. (SH. 2: B-6, C-6)
- LO1) 2.00 (2") CS FEMALE NPT - PLUGGED (1 CONN.) - LUBE OIL TANK FILL. (SH. 1: A-5, C-5)
- LO2) 2.00 (2") CS FEMALE NPT - PLUGGED (1 CONN.) - LUBE OIL TANK DRAIN. (SH. 1: A-5, C-5)
- LO3) .75 (3/4") 316 SST FEMALE NPT MANUALLY OPERATED BALL VALVE - PLUGGED (2 CONN.) - LUBE OIL HEAT EXCHANGER SHELL DRAIN (LUBE OIL). (IT IS RECOMMENDED THAT THESE VALVES BE PADLOCKED IN CLOSED POSITION WHEN NOT IN USE). (SH. 1: A-5, C-5)
- LO7) .50 (1/2") CS FEMALE NPT - PLUGGED (1 CONN.) - GAUGE CABINET DRAIN. (SH. 1: B-5, C-5)
- LO8) 1.50 (1-1/2") CS FEMALE NPT - PLUGGED (3 CONN.) - TURBINE BASE SUMP DRAINS, NORMALLY NO FLOW. FLOW OF LUBE OIL, FUEL OIL, OR WATER WOULD OCCUR ONLY IN THE EVENT OF COMPONENT LEAKAGE. (SH. 2: A-4, A-6, C-5, B-6)
- LO13) .75 (3/4") CS FEMALE NPT - PLUGGED (2 CONN.) - DRAIN FROM INSIDE ACCESSORY COMPARTMENT. NOTE: TO PREVENT LEAKAGE OF FIRE PROTECTION MEDIUM THESE DRAINS MUST REMAIN PLUGGED, OR IF A CONTINUOUS DRAIN IS DESIRED, IT MUST BE EQUIPPED WITH A WATER FILLED U-TRAP. NORMALLY NO FLOW. FLOW OF LUBE OIL OR WATER WOULD OCCUR ONLY IN THE EVENT OF COMPONENT LEAKAGE. (SH. 1: B-5, C-5, D-5)
- LO14) .75 (3/4") 316 SST FEMALE NPT MANUALLY OPERATED BALL VALVE - PLUGGED (2 CONN.) - LUBE FLUID FILTER CASING DRAIN. (IT IS RECOMMENDED THAT THESE VALVES BE PADLOCKED IN CLOSED POSITION WHEN NOT IN USE.). (SH. 1: A-4, C-4)
- LO15) 1.50 (1-1/2") CS FEMALE NPT - PLUGGED (1 CONN.) - LUBE FLUID SURGE TANK DRAIN. (SH. 2: A-6, C-6)
- LO16) 1.50 (1-1/2") CS FEMALE NPT - PLUGGED (1 CONN.) - LUBE FLUID AUXILIARY SURGE TANK DRAIN. (SH. 2: A-4, C-4)
- LO17) .50 (1/2") CS SOCKET WELD GATE VALVE (1 CONN.) - NO. 2 BEARING TELLTALE DRAIN. MUST BE OPERATED IN A FULLY OPEN CONDITION AND DRAINED TO SUITABLE COLLECTION OR DISPOSAL RECEPTACLE. THE DRAIN LINE CONNECTION MUST ALLOW FOR GAS VENTING AND GRAVITY OIL DRAIN TO THE RECEPTACLE. (SH. 2: A-5, C-5)

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- PG36) .50 (1/2") SST FEMALE NPT (1 CONN.) – PURGE VALVE CONTROL AIR INLET.  
(SH. 2: A-6, D-6)
- PM01) .375 (3/8") 316 SST COMPRESSION TUBE FITTING (1 CONN.) - PERFORMANCE MONITORING - INLET PRESSURE PROBES. (THIS CONNECTION MUST BE RUN TO CONNECTION BDH IN THE PERFORMANCE MONITORING PACKAGE). (SH. 2: B-6)
- PM02) .375 (3/8") 316 SST COMPRESSION TUBE FITTING (1 CONN.) – PERFORMANCE MONITORING BELLMOUTH PRESSURE. THIS CONNECTION MUST BE RUN TO CONNECTION BDL IN PERFORMANCE MONITORING PACKAGE. (SH. 2: B-6, C-6)
- \*WW1) 1.50 (1-1/2") 150# 304L SST RAISED FACE FLANGE (1 CONN.) - OFF-LINE / ON-LINE COMPRESSOR WATER WASH INLET. THIS LINE MUST BE HEAT TRACED TO PREVENT FREEZING IN THE WINTER, SEE WATER WASH PIPING SCHEMATIC DIAGRAM ML ITEM 0442 FOR HEAT TRACING REQUIREMENTS. (SH. 2: A-7, B-6)
- WW4) 2.00 (2") CS FEMALE NPT (1 CONN.) - TURBINE WATER WASH DRAIN. THIS LINE MUST HAVE A SHUT-OFF VALVE ATTACHED TO THE PURCHASER'S CONNECTION AND, IF REQUIRED, BE HEAT TRACED TO PREVENT FREEZING IN WINTER. SEE WATER WASH PIPING SCHEMATIC DIAGRAM ML ITEM 0442. (SH. 2: A-4, B-4)
- WW6) 1.00 (1") CS FEMALE NPT VALVE (1 CONN.) - COMBUSTION WRAPPER WATER WASH DRAIN, FROM BOTTOM OF COMBUSTION CHAMBER. THIS LINE MUST BE HEAT TRACED TO PREVENT FREEZING IN THE WINTER, IF REQUIRED. REFER TO WATER WASH PIPING SCHEMATIC DIAGRAM, ML ITEM 0442. (SH. 2: A-5, B-6)
- WW10) 1.00 (1") CS FEMALE NPT VALVE (1 CONN.) - WATER WASH DRAIN FROM TURBINE SHELL. THIS LINE MUST BE HEAT TRACED TO PREVENT FREEZING IN THE WINTER, IF REQUIRED. REFER TO WATER WASH PIPING SCHEMATIC DIAGRAM, ML ITEM 0442. (SH. 2: A-5, B-5)
- WW12) .50 (1/2") 316 SST FEMALE NPT GLOBE VALVE - PLUGGED (1 CONN.) - OFF-LINE COMPRESSOR WATER WASH MANIFOLD DRAIN. (SH. 2: A-6, B-7)
- WW13) .50 (1/2") 316 SST FEMALE NPT GLOBE VALVE - PLUGGED (1 CONN.) - ON-LINE COMPRESSOR WATER WASH MANIFOLD DRAIN. (SH. 2: A-6, B-7)

**NOTE:**

THE TOTAL RESULTANT FORCE AND TOTAL RESULTANT MOMENT IMPOSED ON THE TURBINE AT ANY CONNECTION MUST NOT EXCEED THE FOLLOWING:

$$F = (100) \times (D)$$

$$M = (200) \times (D)$$

WHERE F = RESULTANT FORCE IN POUNDS

M = RESULTANT MOMENT IN FT-LBS

D = PIPE SIZE OF THE CONNECTION (I.P.S.) IN INCHES UP TO 8 INCHES IN DIAMETER. FOR SIZES GREATER THAN 8 INCHES IN DIAMETER USE A VALUE OF D EQUAL TO  $(16 + \text{I.P.S.})/3$  INCHES.

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