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OASIS Velocity Standard Details Version 03

It is the customer's responsibility to ensure that all appropriate design and construction personnel receive and thoroughly review this document along with their site specific drawing. This document contains information which is critical to the proper design and construction of a suite for the FUJIFILM Healthcare OASIS Velocity system. The information contained herein is to be used in conjunction with the site specific drawing provided by FUJIFILM Healthcare Logistics and Services Planning Department. Contact the FUJIFILM Healthcare Logistics and Services Planning Department with questions regarding this guide.

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NOTE : ALL DRAWINGS, ILLUSTRATIONS AND SKETCHES ARE SHOWN DIMENSIONLESS
NOTE: THE INDICATION OF "(MRI)" SCAN ROOM" REFERS TO THE "RF SHIELDED ROOM"

OASIS Velocity				
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TYPICAL PLANNING PROCESS

SITE SELECTION AND EVALUATION (4 WEEKS)

- A)

SITE SELECTION (1 WEEK)

SALES:

SUBMITS COMPLETED/PARTIALLY COMPLETED SITE SELECTION SURVEY WITH CUSTOMER INFORMATION

PROVIDES A SCALED DRAWING OR A DIMENSIONED SKETCH

REQUESTS EVALUATION ASSISTANCE FROM SITE PLANNING

SITE PLANNING:

RECORDS DATA AND ASSIGN OPPORTUNITY

FORWARDS STANDARD DETAILS TO CUSTOMER AS REQUIRED.

PREPARES A PRELIMINARY EQUIPMENT LAYOUT WITH CLEARLY IDENTIFIED ISO-CENTER

REVIEWS PRELIMINARY DATA FOR SITING CONCERNS

SCHEDULES A SITE VISIT WITH THE CUSTOMER, SALES PERSON

ARRANGES FOR SITE TESTING BY FUJIFILM HEALTHCARE LOGISTICS AND SERVICES PERSONNEL

B)

SITE EVALUATION (1 WEEK)

SITE PLANNING:

VISITS SITE AND VERIFIES PREVIOUSLY SUBMITTED INFORMATION

PREPARES A SITE EVALUATION REPORT WITH RECOMMENDATIONS AND FORWARDS IT TO THE SALES PERSON TO PRESENT TO THE CUSTOMER

CONFIRMS SUITE DIMENSIONS, MODIFY AS NEEDED

ASSISTS CUSTOMER / CONTRACTOR IN IDENTIFYING STORAGE AREA TO BE DESIGNATED FOR CLEAN AND SECURE STORAGE OF COVERS AND ANCILLARY EQUIPMENT AT TIME OF DELIVERY

COORDINATES AND COMPLETES SITE TESTING

DISCUSSES CONCERNS WITH THE CUSTOMER (AND DESIGN TEAM / CONTRACTOR IF AVAILABLE)

ASSIST IN IDENTIFYING POSSIBLE ALTERNATE LOCATIONS IF APPROPRIATE

REVIEW STANDARD DETAILS WITH CUSTOMER (AND DESIGN TEAM / CONTRACTOR IF AVAILABLE)

NOTE:

ALL TESTING MUST BE DONE DURING PERIODS OF TYPICAL ACTIVITY IN THE SURROUNDING AREA

ACTIVITY IN THE IMMEDIATE AREA OF THE PROBE MUST BE RESTRICTED DURING THE TEST

THERE ARE LIMITATIONS TO THE AMOUNT OF INTERFERENCE THAT THE OASIS Velocity SYSTEM CAN CORRECT FOR. IF THE INTERFERENCE(S) EXCEED CORRECTABLE LEVELS, THE FOLLOWING MAY BE REQUIRED.

a)

DETERMINE AND ELIMINATE SOURCE OF INTERFERENCE

b)

INSTALL MAGNETIC SHIELDING AND/OR COMPENSATION UNIT

c)

SELECT NEW SITE

C)

INFORMATION CONSOLIDATION (1 WEEK)

SITE PLANNING:

REVISES PRELIMINARY DRAWING/SKETCH AS NEEDED

SUBMITS TEST RESULTS AND CONFIRMED SITE DATA TO TECH SUPPORT FOR REVIEW

PREPARES SITE EVALUATION REPORT AND VIA TELEPHONE, DISCUSS ACTIONS AND RECOMMENDATIONS WITH SALES PERSON

CUSTOMER REVIEW AND PRELIMINARY PLANS (VARIES)

SITE EVALUATION REPORT

SALES:

REVIEWS THE REPORT WITH THE CUSTOMER (SITE PLANNING IS AVAILABLE VIA TELEPHONE IF NECESSARY)

REVIEWS REVISED LAYOUT WITH THE CUSTOMER

RETURNS CUSTOMER APPROVED LAYOUT AND REPORT TO SITE PLANNING

SITE DRAWING AND DETAILS

SITE PLANNING:

PREPARES A FINAL LAYOUT AND FOLLOWS UP ON THE SITE CONCERNS. THAT MAY INCLUDE:

REQUESTING A MAGNETIC SHIELD DESIGN FOR FRINGE FIELD CONTROL

REQUESTING A MAGNETIC SHIELD DESIGN TO CONTROL INTERFERENCE

PROVIDING THE CUSTOMER WITH A CONTACT TO ADRESS VIBRATION ISSUES

ON SITE MEETING (SCHEDULED BY CUSTOMER)

SALES AND SITE PLANNING:

MEET WITH THE CUSTOMER AND THEIR DESIGN TEAM TO:

REVIEW AND FINALIZE THE EQUIPMENT LAYOUT

REVIEW STANDARD DETAILS

ADDRESS OUTSTANDING QUESTIONS OR CONCERNS

IDENTIFY PRELIMINARY DELIVERY SCHEDULE

PRE-CONSTRUCTION (VARIES)

ARCHITECT PREPARES CONSTRUCTION DRAWINGS

INPUT MUST BE COORDINATED WITH VARIOUS CONSULTANTS

FUJIFILM HEALTHCARE

ENGINEERS (STRUCTURAL, HVAC, ELECTRICAL)

RF SHIELDING VENDOR (REQUIREMENTS VARY WITH DIFFERENT VENDORS)

FUJIFILM HEALTHCARE LOGISTICS AND SERVICES

REVIEW OF ARCHITECTURAL DRAWINGS

ARCHITECT MUST SEND DOCUMENTS TO FUJIFILM HEALTHCARE LOGISTICS AND SERVICES PLANNING DEPARTMENT

NOTE:

THIS IS A REVIEW AND NOT AN APPROVAL. FUJIFILM HEALTHCARE LOGISTICS AND SERVICES ACCEPTS NO LIABILITY FOR ERRORS OR OMISSIONS. IT IS THE RESPONSIBILITY OF THE CUSTOMER AND THEIR DESIGN TEAM TO PREPARE THE SUITE TO MEET THE GUIDELINES PRESENTED IN THIS DOCUMENT.

PRE-CONSTRUCTION (CONT.)

SELECTION OF CONTRACTOR

THE DRAWINGS GO OUT TO BID AND A GENERAL CONTRACTOR WILL BE CHOSEN BY THE CUSTOMER. THE CUSTOMER/ARCHITECT MUST PROVIDE SITE PLANNING WITH A CONTACT AND TELEPHONE NUMBER. THE ARCHITECT OR GENERAL CONTRACTOR IS RESPONSIBLE FOR SECURING THE BUILDING PERMITS DURING THIS TIME.

PRE-CONSTRUCTION MEETING (SCHEDULED BY CUSTOMER / ARCHITECT)

PLANS ARE REVIEWED AND OUTSTANDING QUESTIONS ARE ADDRESSED. A CONSTRUCTION SCHEDULE SHOULD BE AGREED UPON AT THIS MEETING AND A DELIVERY DATE IDENTIFIED.

SITE CONSTRUCTION (6-8 WEEKS)

ON SITE EVALUATION

FUJIFILM HEALTHCARE (LOCAL) PROJECT MANAGER:

VISITS SITE ON A ROUTINE BASIS TO VERIFY PROGRESS

ADVISES SITE PLANNING OF SITE STATUS AND ANY CONCERNS

ADDRESSES CONCERNS WITH ARCHITECT OR CONTRACTOR AS NEEDED

PRIOR TO DELIVERY

CUSTOMER CONTRACTED RIGGER PERFORMS ON-SITE INSPECTION 1-4 WEEKS PRIOR TO DELIVERY TO VERIFY OFFLOAD CONDITIONS.

CUSTOMER/CONTRACTOR INSTALLS CHILLER UNIT, COMPLETES INSTALLATION AND SCHEDULES CHILLER STARTUP PRIOR TO DELIVERY DATE.

FINISH FLOORING MUST BE COMPLETELY INSTALLED. IT IS THE CUSTOMER/ CONTRACTOR'S RESPONSIBILITY TO PROVIDE A PROTECTIVE COVERING (MASONITE IS RECOMMENDED) DURING THE INSTALLATION. IF FLOORING IS NOT INSTALLED PRIOR TO DELIVERY, IT MAY NOT BE LAID UNTIL AFTER THE OASISVelocity INSTALLATION IS COMPLETE. FLOORING INSTALLED AFTER THE INSTALLATION, MUST BE TRIMMED AROUND THE BOTTOM OF THE SYSTEM COVERS AND MAY NOT BE SLID UNDER THEM. THE MAGNET WILL BE AT FIELD PERMANENTLY.

THE CUSTOMER OR THEIR AUTHORIZED REPRESENTATIVE IS RESPONSIBLE FOR ENSURING THE PRE-DELIVERY CHECKLIST IS FILLED OUT AND ALL ITEMS ARE EITHER COMPLETED OR SCHEDULED FOR COMPLETION PRIOR TO DELIVERY OF THE SYSTEM. THE CHECKLIST MUST BE SUBMITTED TO FUJIFILM HEALTHCARE LOGISTICS AND SERVICES 14 DAYS PRIOR TO THE SCHEDULED SYSTEM DELIVERY. IF THE CHECKLIST ITEMS ARE NOT COMPLETED AS REQUIRED, THE DELIVERY MAY HAVE TO BE DELAYED.

NOTE:

THE OASIS Velocity SYSTEM IS DELIVERED PRE-FILLED WITH CRYOGENS. THIS REQUIRES THAT THE CHILLER AND ELECTRICAL POWER BE OPERATIONAL AND READY FOR CONNECTION TO THE OASIS Velocity SYSTEM TO AVOID A POTENTIAL AND COSTLY HELIUM BOIL-OFF.

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NOTE: THE INDICATION OF "(MRI)" SCAN ROOM" REFERS TO THE "RF SHIELDED ROOM"

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GENERAL SITING CRIETRIA

SITE SELECTION

- COORDINATION WITH THE ARCHITECT, ENGINEER, CONTRACTOR AND FUJIFILM HEALTHCARE LOGISTICS AND SERVICES PLANNING DEPARTMENT SHOULD BEGIN EARLY IN THE SITE PLANNING PROCESS.
- FOR PROPER EVALUATION OF A SITE, A SET OF DRAWINGS OF THE PROPOSED OASIS Velocity LOCATION AND THE SURROUNDING AREA, ACCOMPANIED BY A COMPLETED SITE SELECTION SURVEY AND CUSTOMER MASTER DATA, SHOULD BE SENT TO FUJIFILM HEALTHCARE LOGISTICS AND SERVICES PLANNING DEPARTMENT FOR REVIEW.
- THE FOLLOWING ITEMS SHOULD BE DISCUSSED WITH THE FUJIFILM HEALTHCARE SERV PLANNING DEPARTMENT FOR A THOROUGH EVALUATION OF THE PROPOSED LOCATION.
 - LOCATION OF ANY MEDICAL IMAGING EQUIPMENT (CT, X-RAY, MAMMOGRAPHY, ULTRASOUND, NUCLEAR EQUIPMENT) OR COMPUTER EQUIPMENT IMMEDIATELY ADJACENT TO OR ABOVE / BELOW THE PROPOSED MRI SCAN ROOM.
 - LOCATION OF FRINGE FIELDS, PARTICULARLY THE 0.1 mT FIELD OF ANY EXISTING OR FUTURE MRI SYSTEM.
 - LOCATION OF ANY LARGE FERROUS MATERIAL (STRUCTURAL STEEL BEAMS, PIPES, DOORS, COLUMNS, ETC.) WITHIN 3 m IN ALL DIRECTIONS OF THE PROPOSED MAGNET ISOCENTER.
 - LOCATION OF EXISTING OR FUTURE AIR CONDITIONING UNITS, AIR HANDLERS, CHILLERS, CONDENSERS, OR ELECTRICAL SERVICE (50 AMPS OR HIGHER) WITHIN 6m OF PROPOSED MAGNET ISOCENTER.
 - LOCATION OF ELECTRICAL SERVICE (200 AMP OR HIGHER), ANY ELECTRICAL OR MECHANICAL ROOMS, OR ANY ELEVATORS WITHIN 12 m OF THE PROPOSED MAGNET ISOCENTER.
 - LOCATION OF ANY HIGH VOLTAGE LINES IN THE AREA LESS THAN 60 m FROM PROPOSED MAGNET ISOCENTER.
 - LOCATION OF ANY VEHICULAR TRAFFIC, INCLUDING PARKING, WITHIN 12 LINEAR METER OF THE PROPOSED MAGNET ISO-CENTER (NO MOVING STEEL WITHIN THE 0,1 mT FIELD)
 - LOCATION OF ANY LARGE MOVING FERROUS OBJECTS (TRAINS, SUBWAYS, LOADING DOCK, ETC.) IN THE AREA.
 - LOCATION OF ANY ITEMS THAT COULD POTENTIALLY CAUSE VIBRATION AT THE SITE TO EXCEED THE OASIS Velocity VIBRATION SPECIFICATION (OASIS Velocity VIBRATION SPECIFICATION: LESS THAN -70 db (g) AT 0 TO 70 Hz IN THE FREQUENCY DOMAIN. A VIBRATION TEST IS REQUIRED TO VERIFY SITE CONDITIONS.
 - THE ABILITY OF THE SELECTED LOCATION TO MEET THE VIBRATION AND INTERFERENCE REQUIREMENTS FOR AN MRI SUITE INTO THE FORESEEABLE FUTURE (TYPICALLY 8-10 YEARS)
 - SITE MUST MEET FUJIFILM MAGNETIC FLUCTUATION SPECIFICATIONS FOR BOTH AC AND DC INTERFERENCE.

FLOOR SPACE

THE FUJIFILM HEALTHCARE OASIS Velocity SYSTEM HAS BEEN SPECIFICALLY DESIGNED TO BE SITED WITHIN AN EXISTING FACILITY. THE STANDARD SYSTEM CONSISTS OF 9 COMPONENTS, (EXCLUDING THE OUTDOOR CHILLER) WHICH CAN BE EASILY SITED WITHIN RECOMMENDET SPACE 65m ² (MINIMUM SPACE 55m²).

PLANNING

- TO MAXIMIZE THE PERFORMANCE OF THE OASIS Velocity MRI SYSTEM, CAREFUL PLANNING SHOULD TAKE PLACE FROM THE INITIAL SITE SELECTION STAGE, THROUGH DESIGN AND CONSTRUCTION, AND THROUGHOUT THE FINAL DELIVERY AND INSTALLATION PROCESS. PROPER PLANNING WILL HELP TO ENSURE HIGH SYSTEM PERFORMANCE STANDARDS, COMFORTABLE PATIENT HANDLING, AN EFFICIENT WORKING ENVIRONMENT, AND SUFFICIENT STORAGE SPACE. IT IS THE RESPONSIBILITY OF THE CUSTOMER'S DESIGN PROFESSIONALS TO ENSURE THAT THE FACILITY WILL COMPLY WITH BOTH RECOMMENDED AND GOVERNING REGULATIONS IN REGARD TO PATIENT PRIVACY AND SAFETY ISSUES.
- IN GENERAL, THE FOLLOWING SHOULD BE CONSIDERED WHEN DESIGNING A MRI SUITE:

- THE 0,5 mT FIELD SHOULD BE CONTAINED WITHIN THE MRI SCAN ROOM OR ACCESS RESTRICTIONS AND SIGNAGE MUST BE IN PLACE AS REQUIRED BY LOCAL REGULATIONS.
- THE MRI SCAN ROOM SHOULD BE LOCATED NEAR THE EXTERIOR OF THE BUILDING WHEN POSSIBLE TO FACILITATE DELIVERY. REFER TO THE RIGGING AND DELIVERY PAGE FOR ADDITIONAL DETAILS.
- A MINIMUM 1200mm x 2100mm FLAT ACCESS PATH INTO THE OASIS Velocity SITE MUST BE PROVIDED FOR THE DELIVERY OF CRYOGEN DEWARS. THIS PATH WILL BE USED THROUGH THE LIFE OF THE SYSTEM AS PART OF ITS ROUTINE MAINTANCE.
- ALL DOORS MUST BE A MINIMUM OF 1200mmm WIDE x 2100mm HIGH (1200mm CLEAR OPENING STOP TO STOP). THE DOOR MUST BE ABLE TO BE OPENED IN SUCH A MANNER THAT A STRAIGHT PATHWAY THROUGH THE DOOR FRAME IS NOT OBSTRUCTED IN ANY WAY BY THE DOOR'S HANDLE, PUSH BAR, HINGES, OTHER ACCESSORIES OR THE DOOR SLAB ITSELF.
- FULL HELIUM DEWARS AND OTHER SERVICE EQUIPMENT(RAMP POWER SUPPLY, GARDIENT LOADER) CAN WEIGHT UP APPROX. 360 KG. DEWARS AND OTHER SIMILARLY HEAVY COMPONENTS WILL OCCASIONALLY BE REQUIRED TO SERVICE THE SYSTEM OVER ITS LIFETIME. CONSIDERATION SHOULD BE GIVEN TO SELECTING FLOORING MATERIAL IN THE SCAN ROOM AND ALONG ALL ACCESS PATHS THAT WILL NOT BE AFFECTED BY THE POINT LOADS GENERATED BY SMALL WHEELS ON SUCH COMPONENTS BEING ROLLED ACROSS IT.
- CONVENIENCE OUTLETS MUST BE LOCATED IN THE MRI SCAN ROOM AND THROUGHOUT THE SUITE FOR SERVICE.
- IT IS THE CUSTOMER'S RESPONSIBILITY TO MEET THE FUJIFILM HEALTHCARE SPECIFICATIONS REGARDING THE ELECTRICAL SERVICE TO THE SYSTEM. IN REVIEWING POWER FOR THE SUITE, CONSIDERATION SHOULD BE GIVEN TO THE OPERATION OF THE SUPPORT FUNCTIONS. REFER TO THE ELECTRICAL SECTION OF THIS GUIDE FOR ADDITIONAL SPECIFICATIONS.
- THE ROOMS MUST BE SUFFICIENTLY SIZED TO ACCOMMODATE WORK ACTIVITIES AND SERVICE ACCESS FOR ALL EQUIPMENT.

OPERATIONS

- STRONG VISUAL CONTACT BETWEEN THE OPERATOR AND THE PATIENT MUST BE MAINTAINED.
- SUFFICIENT AND CONVENIENT WORK SURFACES AND STORAGE MUST BE INCLUDED IN AND NEAR THE MRI SCAN AND CONTROL ROOMS. REMOTE MONITORS SHOULD BE CONSIDERED IN THE CONTROL ROOM.
- A SINK SHOULD BE LOCATED NEARBY, BUT MAY NOT BE LOCATED IN THE MRI SCAN ROOM UNLESS REQUIRED BY CODE.
- THE ENVIRONMENT WITHIN THE SCAN SUITE MUST BE MAINTAINED 24 HOURS PER DAY, 7 DAYS PER WEEK. REFER TO THE ENVIRONMENTAL SECTION OF THIS GUIDE FOR SPECIFICATIONS REGARDING ALLOWABLE RANGES FOR TEMPERATURE AND HUMIDITY.

PATIENT COMFORT AND HANDLING

TO FACILITATE PATIENT HANDLING AND PROVIDE FOR PATIENT SAFETY, THE FOLLOWING SHOULD BE CONSIDERED IN THE DESIGN OF THE MRI SUITE:

- THE PATH FOR PATIENT ACCESS INTO THE MRI SCAN ROOM SHOULD BE ABLE TO ACCOMMODATE A STRETCHER OR GURNEY.
- THERE SHOULD BE SUFFICIENT AREA AROUND THE PATIENT TABLE IN THE MRI SCAN ROOM FOR COMFORTABLE PATIENT HANDLING
- ANCILLARY FUNCTIONS (DRESSING ROOMS, TOILETS, HOLDING AREAS, PREP ROOMS, ETC.) SHOULD BE LOCATED NEAR THE MRI SCAN ROOM.
- THE OPERATOR SHOULD HAVE DIRECT ACCESS TO THE PATIENT.

MR MAGNETIC FIELD

- AS WITH ALL MRI SYSTEMS, A MAJOR CONCERN IN PLANNING IS ACCOMMODATING THE SYSTEM'S MAGNETIC FIELD. THIS FIELD WILL AFFECT MAGNETICALLY SENSITIVE INSTRUMENTS AND CAN BE AFFECTED BY FERROMAGNETIC MATERIALS IN THE SURROUNDING AREA. THE SIZE OF THE FRINGE FIELD IS DETERMINED BY THE STRENGTH AND TYPE OF THE MAGNET.
- MAGNETIC SHIELDING CAN BE DESIGNED TO REDUCE THE DISTANCE THE mT FIELDS EXTEND FROM THE OASIS Velocity GANTRY OR TO DAMPEN FLUCTUATIONS CREATED BY THE ENVIRONMENT SURROUNDING THE SCAN ROOM. CONTACT FUJIFILM HEALTHCARE LOGISTICS AND SERVICES PLANNING DEPARTMENT FOR FURTHER INFORMATION.
- THE 0,5 mT FIELD SHOULD BE CONTAINED WITHIN THE MRI SCAN ROOM OR ACCESS RESTRICTIONS AND SIGNAGE MUST BE IN PLACE AS REQUIRED BY APPLICATE STANDARD IEC 60601-1-2 / EN 60601-1-2 AND IEC 60601-2-33 / EN 60601-2-33 IN THE CURRENTLY VALID VERSION.

COMMUNICATIONS

TELEPHONES WITH ACCESS TO AN OUTSIDE LINE MUST BE LOCATED IN THE CONTROL ROOMS TO FACILITATE APPLICATIONS / SERVICE SUPPORT.

A DATA PORT WITH A BROAD BAND 100/1 G BASE T LINE CONNECTION TO THE INTERNET MUST BE LOCATED AT THE OPERATOR CONSOLE AREA. THIS CONNECTION MAY BE THROUGH THE SITE'S NETWORK PROVIDED THAT THE OASIS Velocity IS ADRESSABLE VIA THE INTERNET.

IN ORDER TO MAINTAIN A TIMELY INSTALLATION SCHEDULE, THE FOLLOWING INFORMATION MUST BE SENT TO: LOCAL PROJECT COORDINATOR PRIOR TO THE DELIVERY OF THE OASIS Velocity SYSTEM.

- MANUFACTURER AND SOFTWARE REVISION LEVEL FOR THE PACS SYSTEM
- MANUFACTURER, MODEL AND SOFTWARE REVISION LEVEL FOR THE DICOM PRINTER
- MANUFACTURER AND SOFTWARE REVISION LEVEL FOR RIS/MODALITY WORKLIST SERVER
- NAME AND TELEPHONE NUMBER FOR THE SITE'S NETWORK ADMINISTRATOR.

FUJIFILM HEALTHCARE SENTINEL REMOTE

FUJIFILM HEALTHCARE SENTINEL REMOTE IS USED TO MONITOR; ACCES AND REMOTELY DIAGNOSE THE OASIS Velocity MRI SYSTEM: FOR A COMPLETE AND UP TO DATE DESCRIPTION OF ALL OF THE SENTINEL REMOTES FUNCTIONS AND FEATURES; CONTACT A FUJIFILM HEALTHCARE SALES REPRESENTATIVE.

SECURITY - SENTINEL SERVERS ARE INSTALLED AT EXCLUSIVE DATA CENTERS THAT ARE MONITORED 24/7 BY SECURITY CAMERAS AND REQUIRE BIOMETRIC IDENTIFICATION FOR ENTRY.

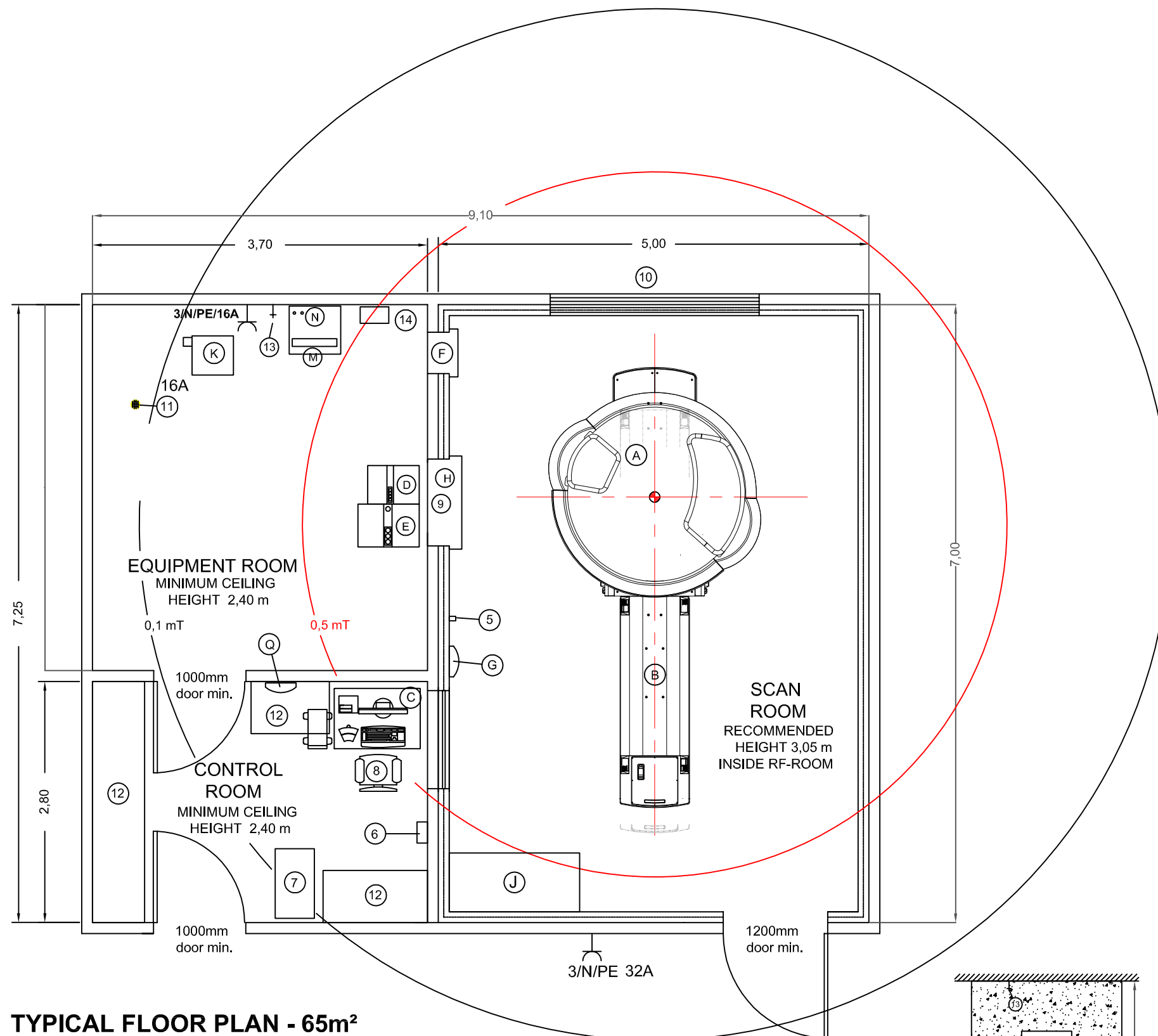
- COMMUNICATION IS ENCRYPTED USING SSL (SECURE SOCKET LAYERING) TO PROVIDE SECURITY
- POLLING BETWEEN THE MRI SYSTEM AND THE SENTINEL SERVER IS PERFORMED REGULARLY. ONLY DEVICES THAT COMPLETE TWO WAY AUTHENTICATION ARE ABLE TO COMMUNICATE WITH THE OASIS Velocity SYSTEM.
- THE OASIS Velocity SYSTEM WILL ATTEMPT TO AUTHENTICATE ONLY WHEN IT HAS INITIATED THE COMMUNICATION.

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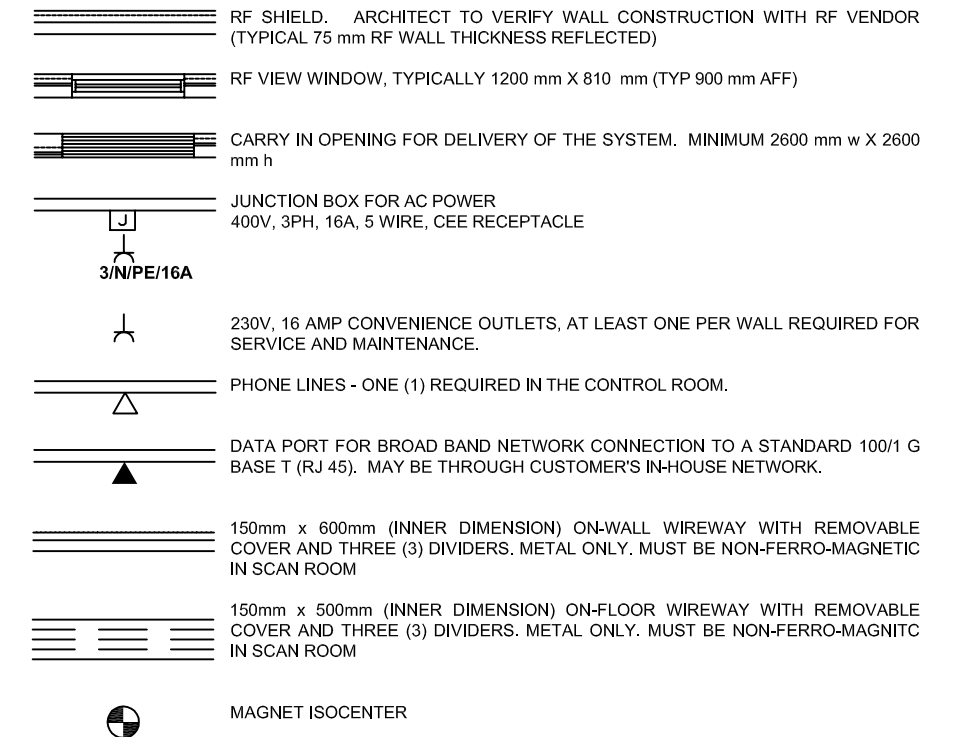
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REPRESENTATIVE SUITE LAYOUT



LEGEND



EQUIPMENT BY FUJIFILM

- | | |
|----------------------------|---|
| (A) OASIS Velocity GANTRY | (H) FILTER PANEL |
| (B) PATIENT TABLE | (K) HELIUM COMPRESSOR |
| (C) OPERATOR'S WORKSTATION | (M) SENSE UNIT (INSTALLATION ON HEAT EXCHANGER) |
| (D) IRCP CABINET | (N) HEAT EXCHANGER |
| (E) GPA CABINET | (Q) MAGNET ALARM BOX (ERDU 2) |
| (F) MCU3 FILTER PANEL | |
| (G) REMOTE SWITCH (ERDU 1) | |

EQUIPMENT/ACCESORIES BY OTHERS

- | | |
|-----------------------------|-------------------------------|
| ⑤ OXYGEN PROBE | ⑪ FLOOR DRAIN |
| ⑥ OXYGEN MONITOR | ⑫ CASEWORK |
| ⑦ LASER IMAGER | ⑬ HOSE BIBB |
| ⑧ CHAIR + TABLE | ⑭ AC POWER PANEL |
| ⑨ SIX (6) 60 mm WAVE GUIDES | ⑮ min. 300mm OVERHEAD WIREWAY |
| ⑩ DELIVERY ACCESS PANEL | ⑯ COIL STORAGE CABINET |
| | ⑰ OUTDOOR CHILLER |

NOTE: - SOME EQUIPMENT/ACCESSORIES BY OTHERS MAY NOT BE SHOWN ON TYPICAL LAYOUTS

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OASIS Velocity- Rpresentative suite layout				
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MINIMUM SUITE LAYOUT

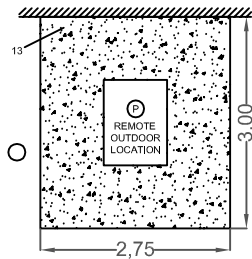
- 400V, 16A, 3PH, 5 WIRE, CEE RECEPTACLE FOR USE WITH RAMP-UP TOOL TO INITIALIZE MAGNETIC FIELD. THE OASIS Velocity SYSTEM DRAWS ONLY MINIMAL POWER DURING INITIALIZATION OF FIELD. THE RAMP-UP TOOL LOAD SHOULD NOT BE INCLUDED WHEN CALCULATING TOTAL LOAD ON PANEL FROM WHICH THE OASIS Velocity MRI SYSTEM DRAWS ITS POWER 400V, 16A, 3PH, 5 WIRE, CEE RECEPTACLE FOR USE WITH HEAT EXCHANGER.
- IN ORDER TO ENSURE ADEQUATE CLEARANCE TO INSERT THE TRANSFER LINE INTO THE HELIUM DEWARs A 700 mm x 700 mm AREA WITH A MINIMUM CLEAR HEIGHT OF 4,50 m MUST BE PROVIDED IN EITHER THE MRI SCAN ROOM OR ITS IMMEDIATE VICINITY. THIS CLEARANCE MAY BE OBTAINED VIA THE REMOVAL OF A DROP-IN CEILING TILE. UNDER NORMAL OPERATING CONDITIONS, AFTER THE INITIAL MAGNET FILL, HELIUM REPLENISHMENT OCCURS ONLY ONCE EVERY 12-24 MONTHS.
- A CLEAN AND SECURE STORAGE AREA OF APPROXIMATELY 50m² (8mx6m) REQUIRED FOR SYSTEM COVERS, TOOLS AND ANCILLARY EQUIPMENT AT THE TIME OF DELIVERY. THIS AREA SHOULD BE NEAR AND HAVE CONVENIENT ACCESS FROM THE OASIS Velocity SUITE. THIS STORAGE AREA IS TYPICALLY EMPTIED OF FUJIFILM HEALTHCARE MATERIALS BY THE END OF THE FIRST WEEK OF THE SYSTEM INSTALLATION. ADDITIONALLY, SECURE STORAGE, EITHER INDOOR OR OUTDOOR, WILL BE NEEDED FOR UP TO SIX (6) HELIUM DEWARs DURING THE FIRST TWO WEEKS AFTER DELIVERY. A LEVEL ACCESS PATH FROM THIS STORAGE AREA TO THE MRI SCAN ROOM IS REQUIRED. TO PROVIDE FOR PASSAGE OF THE GANTRY COVERS, **ANY DOORS BETWEEN THE MRI SCAN ROOM AND THE STORAGE AREA MUST BE A MINIMUM WIDTH OF 1200mm.**
- ALL DOORS IN THE DEWAR AND SERVICE EQUIPMENT DELIVERY PATH MUST BE A MINIMUM OF 1200mm w X 2100mm h CLEAR STOP TO STOP. THE DOORS MUST BE ABLE TO OPEN IN SUCH A MANNER THAT A STRAIGHT PATHWAY THROUGH THE DOOR FRAME IS NOT OBSTRUCTED IN ANY WAY BY THE HANDLE, PUSH BAR, HINGES OR OTHER ACCESSORIES OR THE DOOR SLAB ITSELF.
- ALL DOORS THAT ARE PART OF THE TRANSPORT ROUTE, MUST HAVE A MINIMUM WIDTH OF 1100mm, DUE TO THE SIZE OF GRADIENT LOADER AND COILS.
- CUSTOMER'S ARCHITECT IS RESPONSIBLE FOR VERIFYING ALL POWER AND HVAC SPECIFICATIONS FOR EQUIPMENT NOT SUPPLIED BY FUJIFILM HEALTHCARE.
- THIS DRAWING IS NOT FOR CONSTRUCTION PURPOSES. CUSTOMER IS RESPONSIBLE FOR HIRING QUALIFIED DESIGN PROFESSIONALS TO PREPARE CONSTRUCTION DOCUMENTS. CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS.
- FUJIFILM HEALTHCARE RESERVES THE RIGHT TO HOLD THE APPROVAL OF A SITE PENDING AN ON-SITE REVIEW AND APPROPRIATE QUALIFICATION TESTING BY FUJIFILM HEALTHCARE PERSONNEL.
- CONSTRUCTION DRAWINGS ARE TO BE SUBMITTED TO THE FUJIFILM HEALTHCARE LOGISTICS AND SERVICES PLANNING DEPARTMENT FOR REVIEW PRIOR TO CONSTRUCTION.
- THESE DRAWINGS ARE THE PROPERTY OF FUJIFILM HEALTHCARE AND ARE NOT FOR CONSTRUCTION PURPOSES. THE DRAWINGS IN THESE STANDARD DETAILS ARE TO BE USED BY THE CUSTOMER'S DESIGN PROFESSIONALS TO PREPARE APPROPRIATE CONSTRUCTION DOCUMENTS. FUJIFILM HEALTHCARE LOGISTICS AND SERVICES RESERVES THE RIGHT TO REFUSE TO INSTALL ANY OR ALL EQUIPMENT WHEN THE ROOM PREPARATION DOES NOT MEET SPECIFICATIONS. THE CURRENT STANDARD DETAILS MAY BE OBTAINED ON LINE AT <https://global.fujifilm.com/en>. CONTACT THE FUJIFILM HEALTHCARE LOGISTICS AND SERVICES PLANNING DEPARTMENT FOR ACCESS THOSE DOCUMENTS.

- THE LAYOUTS ON THESE PAGES ARE REPRESENTATIVE OF A TYPICAL AND MINIMUM SIZE OASIS Velocity SUITE. FINAL SUITE CONFIGURATION IS DEPENDENT ON PHYSICAL SITE CONDITIONS AND MAY VARY FROM THOSE SHOWN. CONTACT THE FUJIFILM HEALTHCARE LOGISTICS AND SERVICES PLANNING DEPARTMENT FOR ASSISTANCE.

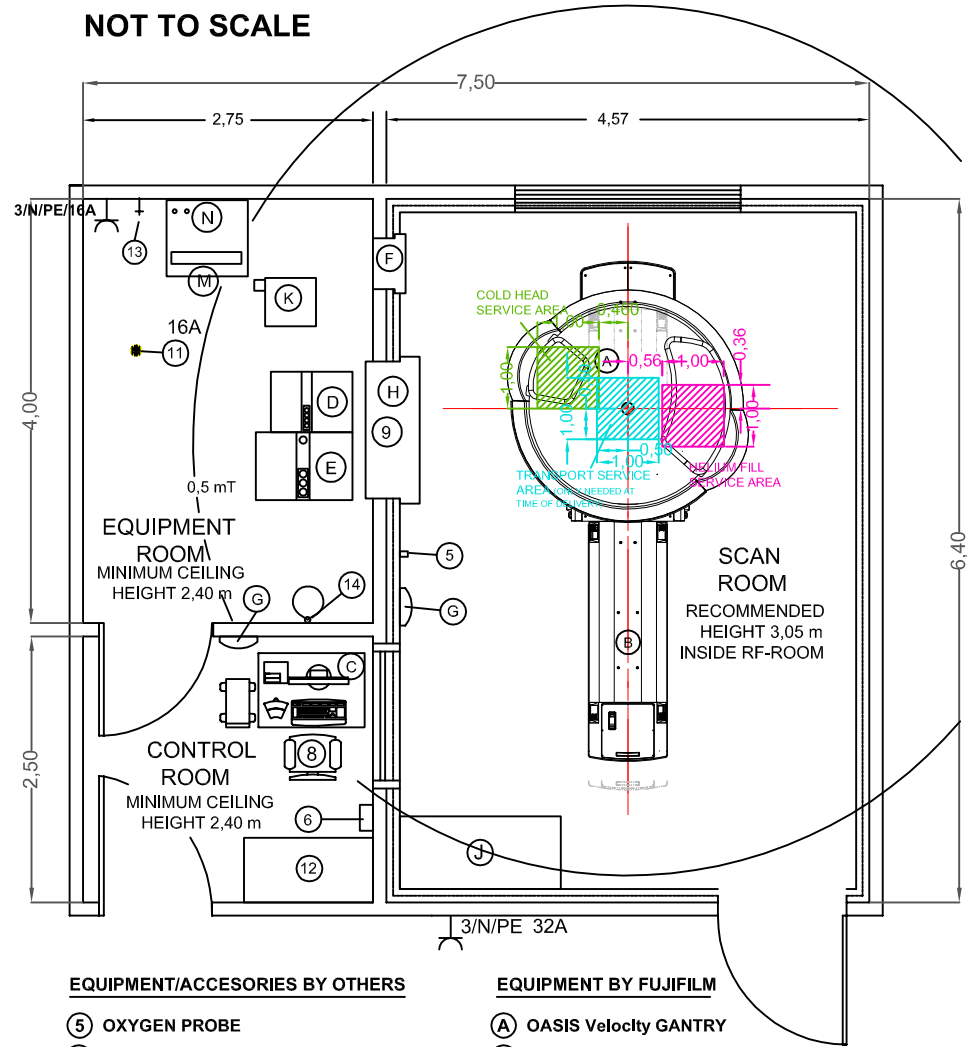
LEGEND

- RF SHIELD. ARCHITECT TO VERIFY WALL CONSTRUCTION WITH RF VENDOR. (TYPICAL 150 mm RF WALL THICKNESS REFLECTED.)
- RF VIEW WINDOW, TYPICALLY 1210 mm w X 910 mm h (900 AFFL)
- EQUIPMENT ACCESS PANEL FOR DELIVERY OF THE SYSTEM. MINIMUM 2,60 m w X 2,60 m h.
- JUNCTION BOX FOR AC POWER.
- 400V, 32A, 3PH, 5 WIRE, CEE RECEPTACLE FOR USE WITH HEAT EXCHANGER
- 400V, 32A, 3PH, 5 WIRE, CEE RECEPTACLE FOR USE WITH MAGNET POWER SUPPLY
- 230V, 16 AMP CONVENIENCE OUTLETS, AT LEAST ONE PER WALL REQUIRED FOR SERVICE AND MAINTENANCE.
- PHONE LINES - ONE (1) REQUIRED IN EQUIPMENT ROOM AND ONE (1) REQUIRED IN THE CONTROL ROOM.
- DATA PORT FOR BROAD BAND NETWORK CONNECTION TO A STANDARD 1G BASE-T LINE. MAY BE THROUGH CUSTOMER'S IN-HOUSE NETWORK.
- 150 mm X 600 mm (INNER DIMENSIONS) ON-WALL WIREWAY WITH REMOVABLE COVER AND THREE (3) DIVIDERS. METAL ONLY. MUST BE NON-FERROMAGNETIC IN SCAN ROOM.
- 150 mm X 500 mm (INNER DIMENSIONS) ON-FLOOR WIREWAY WITH REMOVABLE COVER AND THREE (3) DIVIDERS. METAL ONLY. MUST BE NON-FERROMAGNETIC IN SCAN ROOM.
- MAGNET ISOCENTER

NOTE:
SOME EQUIPMENT/ACCESSORIES BY OTHERS MAY NOT BE SHOWN ON TYPICAL LAYOUTS



TYPICAL FLOOR PLAN - 50m²
NOT TO SCALE



EQUIPMENT/ACCESSORIES BY OTHERS

- 5 OXYGEN PROBE
- 6 OXYGEN MONITOR
- 7 LASER MANAGER
- 8 CHAIR & TABLE
- 9 SIX (6) 60MM WAVE GUIDES
- 10 DELIVERY ACCESS PANEL
- 11 FLOOR DRAIN
- 12 CASEWORK
- 13 HOSE BIBB
- 14 HELIUM TANK RESTRAINT
- 15 mIn. 30mm OVERHEAD WIREWAY
- P OUTDOOR CHILLER

EQUIPMENT BY FUJIFILM

- A OASIS Velocity GANTRY
- B PATIENT TABLE
- C OPERATOR'S WORKSTATION
- D IRCP UNIT
- E GPA UNIT
- F MCU FILTER PANEL
- G REMOTE SWITCH (ERDU 1)
- H IRCP FILTER PANEL
- K HELIUM COMPRESSOR
- M SENSE UNIT (INSTALLATION ON HEAT EXCHANGER)
- N HEAT EXCHANGER
- Q MAGNET ALARM BOX (ERDU 2)

NOTE : ALL DRAWINGS, ILLUSTRATIONS AND SKETCHES ARE SHOWN DIMENSIONLESS

NOTE: THE INDICATION OF "(MRI) SCAN ROOM" REFERS TO THE "RF SHIELDED ROOM"

OASIS Velocity - Minimum suite layout					
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02	cover, pg. 08, 16	2023-02-09	ss/sb		
01	cover, pg. 14, 18	2022-10-04	ss/sb		
00	preliminary release	2021-12-06	ss/sb		
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GENERAL SUITE CRITERIA

- CARE MUST BE TAKEN TO ENSURE THE OPERATOR'S WORKSTATION, IRCP CABINET, GRADIENT AMPLIFIER, AND HELIUM REFRIGERATOR ARE LOCATED MORE THAN 2620mm FROM THE MAGNET ISOCENTER.
- SOME COMPONENTS ARE FIXED IN PLACE. CARE MUST BE TAKEN TO ENSURE SUFFICIENT SERVICE AREA IS PROVIDED.
- CLEAR ACCESS TO THE FILTER PANEL AND POWER PANEL MUST BE MAINTAINED IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE AND LOCAL CODES.
- POWER CONDITIONERS/UPS UNITS AND CHILLERS ARE POTENTIAL SOURCES OF INTERFERENCE. THESE SHOULD BE REMOTELY LOCATED AND MOUNTED ON VIBRATION DAMPENING PADS AS REQUIRED.
- THE TYPICAL FLOOR PLAN REFLECTS THE MINIMUM DIMENSIONS REQUIRED TO HOLD THE 0,5 mT FIELD WITHIN THE MRI SCAN ROOM. A MRI SCAN ROOM SMALLER THAN THAT SHOWN OR WITH THE MAGNET IN A DIFFERENT LOCATION WILL REQUIRE MAGNETIC SHIELDING TO CONTAIN THE 0,5 mT FIELD.
- CUSTOMER PROVIDED COMPONENTS (i.e. LASER IMAGER) SHOWN IN THE TYPICAL LAYOUT CAN GREATLY AFFECT THE ACCEPTABILITY OF YOUR PLANS AND THE SYSTEM OPERATION. COMPONENT SELECTIONS AND THEIR PLACEMENT MUST BE VERIFIED WITH SITE PLANNING PRIOR TO FINALIZATION OF THE DESIGN.
- CONSTRUCTION MATERIALS (CEILING GRID, LIGHTS, STUDS, ETC.) SHOULD BE CHOSEN TO MINIMIZE THE FERROUS MATERIALS IN THE MRI SCAN ROOM.
- A MINIMUM FINISHED CEILING HEIGHT FOR SERVICE IS *2850 mm CLEAR IN THE MRI SCAN ROOM AND 2400 mm IN ALL OTHER ROOMS.
- FUJIFILM HEALTHCARE WILL NOT PROVIDE A COIL STORAGE CABINET. THE CUSTOMER MAY CHOOSE TO HAVE CUSTOM STORAGE AND CASEWORK DESIGNED.
- A 100/1 G BASE T (RJ 45) NETWORK CONNECTION WITH ACCESS TO THE INTERNET IS REQUIRED AT THE OPERATOR CONSOLE. THIS INTERNET ACCESS MAY BE THROUGH THE CUSTOMER'S EXISTING NETWORK OR PACS SYSTEM.
- AN INTERCOM BETWEEN THE OPERATOR AND PATIENT IS PROVIDED INTERNALLY AS PART OF THE OASIS Velocity SYSTEM. A FACILITY INTERCOM, IF DESIRED, SHOULD BE LINKED ONLY TO THE CONTROL ROOM.
- DUE THE RISK OF STATIC SHOCK AND ISSUES REGARDING DUST, CLEANLINESS, AND SERVICEABILITY, CARPET SHOULD NOT BE USED IN THE MRI SUITE.
- COMPUTER FLOORING MAY BE USED AS AN ALTERNATIVE TO WIREWAYS IN THE EQUIPMENT ROOM. THIS PROVIDES ADDITIONAL FLEXIBILITY IN EQUIPMENT PLACEMENT. THE UNDER FLOOR SPACE MAY ALSO BE USED AS A SUPPLY PLENUM FOR THE HVAC SYSTEM.
- A TABLE AND A CHAIR FOR THE OPERATOR'S WORKSTATION IS TYPICALLY NOT PROVIDED WITH THE SYSTEM. CUSTOM CASEWORK WITH A BUILT-IN DESK FOR THE MONITOR AND KEYBOARD IS HIGHLY RECOMMENDED TO IMPROVE WORK AREA FUNCTIONALITY, ADD STORAGE SPACE AND ENHANCE SUITE AESTHETICS.
- A MINIMUM 1200 mm W X 2100 mm H FLAT ACCESS PATH MUST BE DESIGNED INTO THE SUITE FOR DELIVERY OF THE CRYOGEN DEWARS. THIS PATH WILL BE USED THROUGHOUT THE LIFE OF THE SYSTEM AS PART OF ITS ROUTINE MAINTENANCE.
- AN ANTISTATIC FLOOR FINISH IS REQUIRED (ACCORDING TO EN 14041)

*suspended ceiling; inner faraday height should be 3050mm or more.

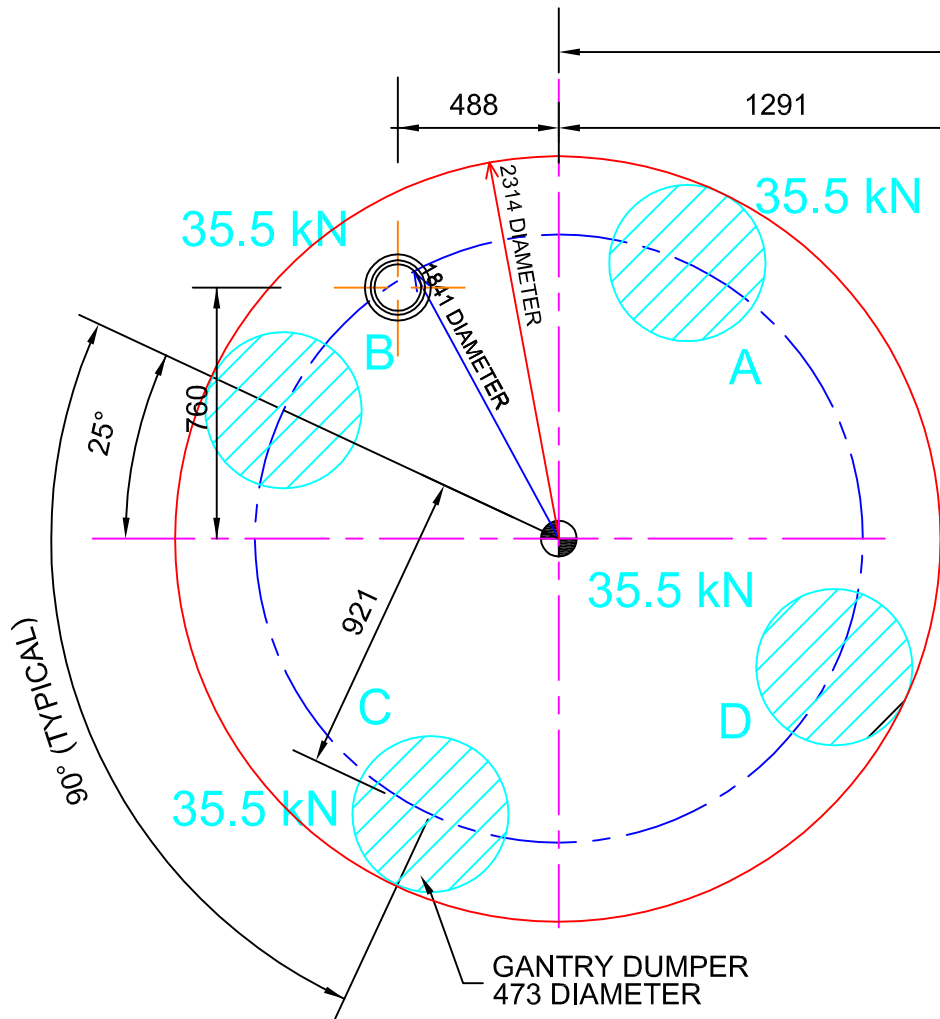
OASIS Velocity EQUIPMENT LEGEND					
	COMPONENT	WIDTH (mm)	DEPTH (mm)	HEIGHT (mm)	WEIGHT (Kg)
A	GANTRY / (MAGNET)	2535	2730	2400	14.200* / (12.800)
B	PATIENT TABLE	830	2520	509-897	750****
C	OPERATORS CONSOLE **	1200	750	750	34
	PC UNIT	198	580	442	28
	SWITCH UNIT	460	86	57	
	MONITOR***	552.5	233	368-499	
	KEYBOARD	441	149	33	
D	IRCP UNIT	597	800	1890	456.5
E	GPA UNIT	665	865	1880	495
F	MCU3	576	387	584	24,5
G	REMOTE SWITCH (ERDU 1)	124	99	124	0.2
H	FILTER BOX / SCAN ROOM	920	165	1550	85
H	FILTER BOX / EQUIPMENT R.	820	491	1445	130
J	COIL CABINET	1340	600	1177	23
K	HELIUM COMPRESSOR	450	588	591	120
M	SENSE UNIT	604	171	1152	40.5
N	HEAT EXCHENAGER	800	750	820	134
Q	MAGNET ALARM BOX (ERDU 2)	201	99	195	0.5

* MAGNET WITH 70% HELIUM FILL LEVEL AND GRADIENT COIL SYSTEM AND COVERS
** TABLE FOR OPERATING CONSOLE IS NOT INCLUDED
*** LCD MONITO MAY CHANGE DEPENDING ON SPECIFICATION
**** INCLUDES MAXIMUM PATIENT WEIGHT - CAPACITY 300KG (WHEN OPERATED MANUALLY)

NOTE : ALL DRAWINGS, ILLUSTRATIONS AND SKETCHES ARE SHOWN DIMENSIONLESS
NOTE: THE INDICATION OF "(MRI) SCAN ROOM" REFERS TO THE "RF SHIELDED ROOM"

OASIS Velocity - General suite criteria					
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FLOOR LOADING STRUCTURAL



GANTRY / PATIENT TABLE FEET

- A-D: each 35.5 kN / 3620kg (20.3 N/cm²)
- E ; F: each 0.65 kN / 66.3kg (2.17N/cm²)
- G; I ; J: 0.8kN / 81.6kg (2.13N/cm²)
- H: 0.8kN / 81.6kg (2.83N/cm²)

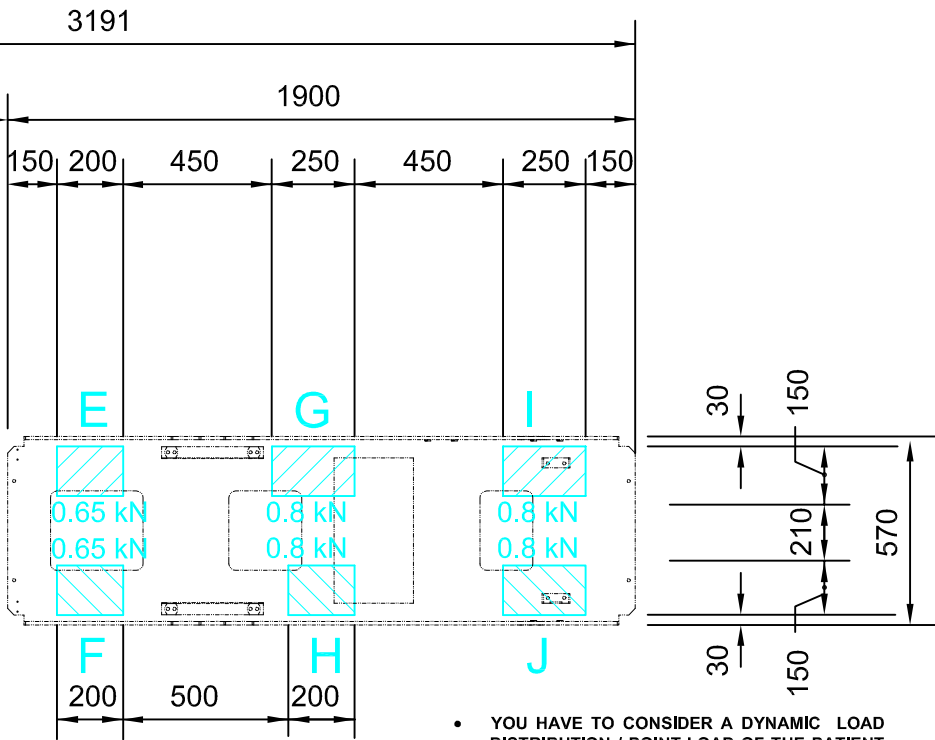
(PATIENT WEIGHT IS NOT INCLUDED)

WEIGHT DISTRIBUTION			
COMPONENT	METER	WEIGHT	TOTAL
GANTRY	A,B,C,D	4x3550 kg	14.200 kg**
TABLE	E,F		450 kg*
	G,H,I,J		

THIS CHART AND DRAWING SHOULD BE USED IN CONJUNCTION WITH THE FINAL APPROVED FLOOR PLAN FOR PROPER PLANNING AND DESIGN

* THE WEIGHT OF THE PATIENT TABLE DOES NOT INCLUDE THE MAXIMUM ALLOWABLE WEIGHT OF THE PATIENT (300 KG WHEN MANUALLY OPERATED)

** THE WEIGHT OF THE GANTRY DOES NOT INCLUDE THE COIL AND THE 100% HELIUM FILLING (Σ1200kg)



- YOU HAVE TO CONSIDER A DYNAMIC LOAD DISTRIBUTION / POINT-LOAD OF THE PATIENT TABLE
- 4.5 kN PATIENT TABLE WEIGHT (E,F,G,H,I,J WITHOUT PATIENT WEIGHT)

STRUCTURAL NOTES

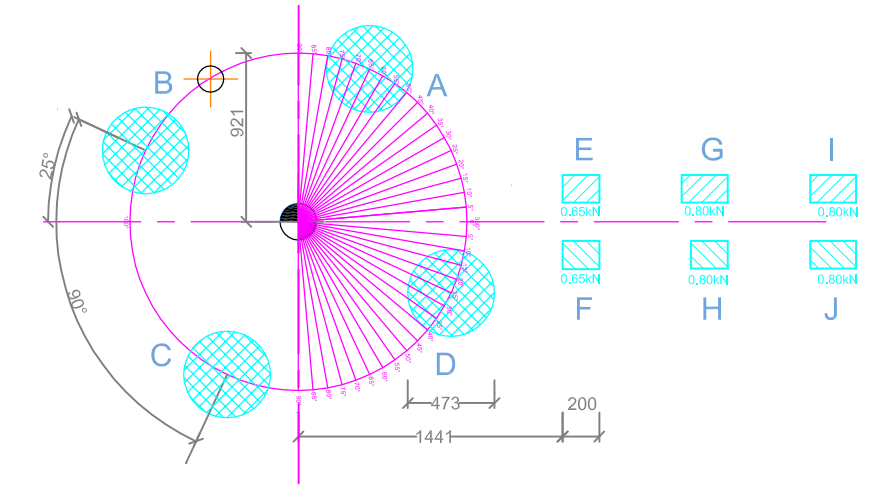
ALL STRUCTURAL SUPPORT IS THE CUSTOMER'S RESPONSIBILITY. A QUALIFIED PROFESSIONAL MUST REVIEW BOTH THE SCAN ROOM SLAB AND THE DELIVERY ROUTE TO ENSURE THE FOLLOWING FUJIFILM HEALTHCARE SPECIFICATIONS ARE MET:

- THE SCAN ROOM SHOULD BE SLAB ON-GRADE WHENEVER POSSIBLE. WHEN THE FLOOR IS NOT SLAB ON GRADE, THE STRUCTURAL SUPPORT MUST BE DESIGNED TO LIMIT VIBRATION AS NOTED BELOW.
- THE FLOOR SLAB MUST BE DESIGNED TO BEAR THE WEIGHT OF THE GANTRY DISTRIBUTED THROUGH THE FOUR (4) FEET AS SHOWN.
- THE MAXIMUM AMOUNT OF FERROUS REINFORCEMENT MATERIALS ALLOWED WITHIN 1,15m OF ISO-CENTER IS 23kg/m² AND 1,30m OF ISO-CENTER IS 54kg/m² LOCATED AT A MINIMUM OF 100mm BELOW THE TOP OF THE SCAN ROOM FLOOR SLAB. REINFORCEMENT OR OTHER STEEL STRUCTURE IN EXCESS OF THIS AMOUNT MUST BE SUBMITTED TO FUJIFILM FOR REVIEW.
- AN ISOLATED FLOOR SLAB FOR THE SCAN ROOM IS RECOMMENDED BY FUJIFILM HEALTHCARE. DUE TO UNFORESEEN FUTURE CONDITIONS, THE SCAN ROOM SLAB SHOULD BE ISOLATED VERTICALLY FROM THE MAIN BUILDING SLAB. VIBRATIONS ABSORBENT MATERIAL SHOULD BE PLACED ALONG THE JOINT BETWEEN THE SLABS.
- THE SLAB MUST BE DESIGNED TO ENSURE THAT THE FOLLOWING VIBRATION CRITERIA ARE MET NOW AND IN THE FORESEEABLE FUTURE.
 - AMBIENT VIBRATIONS SHOULD BE LESS THAN -70db (g) AT 20 TO 70 Hz.
 - TRANSIENT VIBRATIONS MEASURED IN THE TIME DOMAIN SHOULD NOT EXCEED BASELINE PLUS OR MINUS 2,000 MICRO-G'S

- ALL VIBRATION INDUCING COMPONENTS IN THE AREA OF THE MAGNET SHOULD BE MOUNTED WITH VIBRATION ISOLATORS OR OTHER MEANS OF VIBRATION ISOLATION / DAMPENING.
- FUJIFILM HEALTHCARE LOGISTICS AND SERVICES WILL PERFORM TESTING AT THE SELECTED SITE TO IDENTIFY THE EXISTING CONDITIONS. IF THE SITE FAILS TO MEET THE FUJIFILM HEALTHCARE SPECIFICATIONS, THE FOLLOWING IS REQUIRED:
 - ESCALATE TESTING TO A VIBRATION/STRUCTURAL ENGINEER.
 - SELECT AN ALTERNATE SITE.
- THE SCAN ROOM FLOOR MUST BE FLAT AND LEVEL TO 1,00mm +/- OVER 1000mm IN THE ENTIRE AREA OF THE MAGNET AND PATIENT TABLE.
- REFER TO DELIVERY AND RIGGING PAGE FOR ANCILLARY EQUIPMENT WEIGHTS.

NOTE: FUJIFILM HEALTHCARE LOGISTICS AND SERVICES WILL PERFORM AN INITIAL VIBRATION TEST FOR THE CONVENIENCE OF THE CUSTOMER AT THE SAME TIME THAT THE MAGNETIC FLUCTUATION TEST IS PERFORMED, THIS WILL HELP TO IDENTIFY SITES WHERE A CONCERN ABOUT VIBRATION EXISTS IF THERE IS A CONCERN, THE CUSTOMER WILL NEED TO HAVE A QUALIFIED CONSULTING/ENGINEERING FIRM THAT SPECIALIZES IN VIBRATION CONTROL PERFORM A SEPARATE TEST AND PROVIDE A REPORT WITH RECOMMENDATIONS FOR REMEDIATION THROUGH THE SLAB/ FOUNDATION DESIGN. YOUR SITE PLANNER CAN PROVIDE YOU WITH A LIST OF QUALIFIED FIRMS.

THE TEST THAT FUJIFILM HEALTHCARE LOGISTICS AND SERVICES (AND THE INDEPENDENT CONSULTING/TEST FIRM IF REQUIRED) PERFORMS CAN ONLY MEASURE EXISTING CONDITIONS. AS MODIFICATIONS ARE MADE TO THE BUILDING IN THE FUTURE (ADDITION OR EXCHANGE OF HVAC EQUIPMENT, CHILLERS, ETC.), THE CHANGES MUST BE REVIEWED TO ENSURE THAT ANY COMPONENT THAT MAY INDUCE VIBRATION IS PROPERLY MOUNTED ON SHOCK ABSORBING MOUNTS TO PREVENT POTENTIAL INTERFERENCE.



NOTE : ALL DRAWINGS, ILLUSTRATIONS AND SKETCHES ARE SHOWN DIMENSIONLESS

NOTE: THE INDICATION OF "(MRI) SCAN ROOM" REFERS TO THE "RF SHIELDED ROOM"

OASIS Velocity - Floor loading structural				FUJIFILM Value from Innovation
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00	preliminary release	2021-12-06	ss/sb	
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RF SHIELDING

A RADIO FREQUENCY (RF) SHIELD IS REQUIRED FOR THE OPERATION OF THE OASIS Velocity SYSTEM AND IS NOT PROVIDED BY FUJIFILM HEALTHCARE. THIS SIX (6) SIDED SHIELD IS REQUIRED FOR ALL MRI SYSTEMS. COORDINATION WITH THE SHIELDING VENDOR IS OF THE UTMOST IMPORTANCE. CONTACT FUJIFILM HEALTHCARE LOGISTICS AND SERVICES PLANNING DEPARTMENT FOR A LIST OF RF VENDORS. THE FOLLOWING IS A LISTING OF SOME OF THE DESIGN REQUIREMENTS AND CRITERIA WHICH MUST BE CONSIDERED.

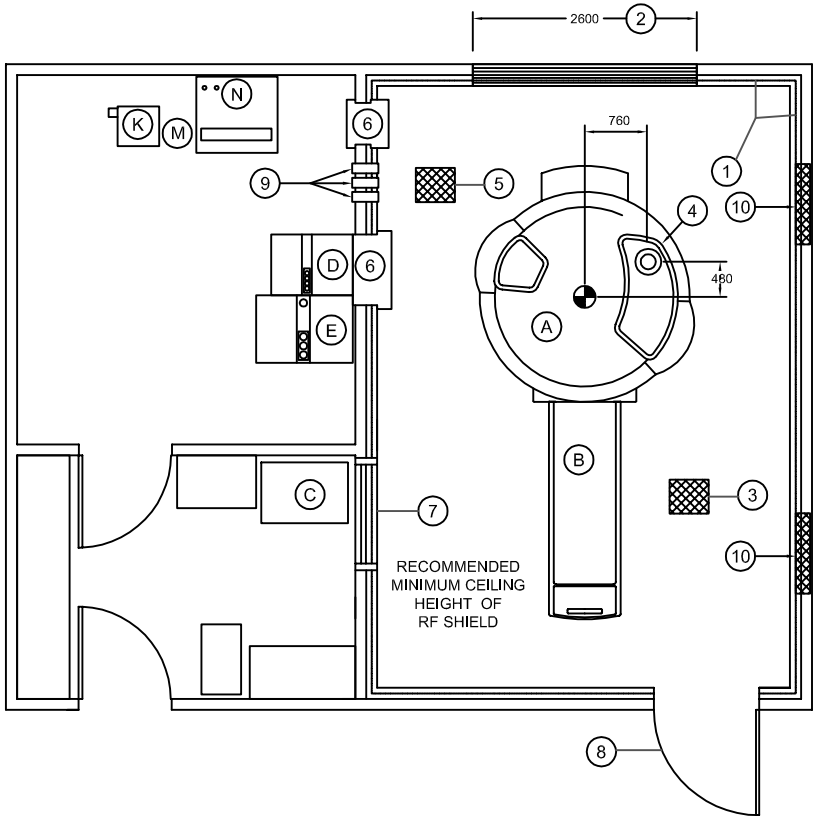
THE RF SHIELDED ROOM MUST HAVE AN INSULATION RESISTANCE OF MORE THAN 1000 OHMS (AS MEASURED WITH A 500 V-DC MEGGER), WITH RESPECT TO THE BUILDING GROUNDING FACILITY AND OTHER EQUIPMENT INSTALLED IN THE BUILDING.

- THE RF SHIELD MUST PROVIDE 90 dB ATTENUATION OR BETTER FROM 1.0-100 MHz.
- IF A SPRINKLER SYSTEM IS REQUIRED, THE DESIGN AND CONSTRUCTION MUST BE COORDINATED WITH THE RF VENDOR TO ENSURE ITS ISOLATION FROM THE SHIELDING. FUJIFILM HEALTHCARE RECOMMENDS THAT ANY PORTION OF THE SPRINKLER SYSTEM THAT PENETRATES THE RF SHIELD BE DRY. FINAL DESIGN APPROVAL AND ACCEPTANCE IS THE RESPONSIBILITY OF THE RF VENDOR.
- SMOKE DETECTORS CAN'T BE INSTALLED IN THE RF SHIELDED ROOM.
- SINKS AND OTHER PLUMBING FIXTURES SHOULD BE AVOIDED IN THE MRI SCAN ROOM UNLESS REQUIRED BY CODE. IF A SINK IS REQUIRED, THE PLUMBING MATERIALS, ROUTING AND INSTALLATION MUST BE COORDINATED BETWEEN THE PLUMBING CONTRACTOR AND RF SHIELDING VENDOR TO ENSURE THAT THE INTEGRITY OF THE RF SHIELD IS MAINTAINED.
- THE RF VENDOR WILL BE RESPONSIBLE FOR PROVIDING THE FOLLOWING:
 - a. INSTALLATION OF THE FUJIFILM HEALTHCARE FILTER PANEL
 - b. SUPPLY AND INSTALL AN RF DOOR (1200mm w X 2100mm h TYP.)
 - c. SUPPLY AND INSTALL AN RF WINDOW (1200mm w X 810mm h TYP.)
 - d. SUPPLY AND INSTALL WAVEGUIDES FOR HVAC SUPPLY AND RETURN DUCTS
 - e. SUPPLY AND INSTALL SIX (6) WAVEGUIDES FOR FUJIFILM HEALTHCARE WATER AND HELIUM LINES. FOUR (4) LOCATED FLOOR LEVEL FOR WATER LINES AND TWO (2) LOCATED ABOVE THE MCU PANEL FOR HELIUM LINES WHERE INDICATED ON CUSTOMER SITE PECIFIC DRAWING.
 - f. SUPPLY AND INSTALL WAVEGUIDE FOR THE EMERGENCY EXHAUST VENT
 - g. SUPPLY AND INSTALL WAVEGUIDE TO SERVE AS A PRESSURE RELIEF
 - h. SUPPLY AND INSTALL HIGH PERFORMANCE EMI ELECTRICAL FILTERS FOR ELECTRICAL OUTLETS AND LIGHTING
 - i. SUPPLY AND INSTALL A CRYOGEN VENT PIPE (WAVEGUIDE) WITH NON-CONDUCTIVE HARDWARE (I.E. NUTS, BOLTS, WASHERS). THE COMPONENTS MUST BE NON-FERROUS STAINLESS STEEL AND MAINTAIN THE RF ROOM INTEGRITY.
 - j. SUPPLY, INSTALL AND TEST HIGH PERFORMANCE ELECTRICAL FILTERS AND WAVEGUIDES FOR NON-FUJIFILM HEALTHCARE EQUIPMENT
 - k. INITIAL AND FINAL RF SHIELD VERIFICATION TESTS
 - l. DETAILED RF SHIELD INSTALLATION DRAWINGS FOR APPROVAL BY ARCHITECT OR CONTRACTOR
 - m. ENSURE FILTER FOR OXYGEN MONITOR REMOTE PROBE (SUPPLIED BY CUSTOMER) IS INSTALLED PER MONITOR MANUFACTURER SPECIFICATIONS (IF OPTIONAL OXYGEN MONITOR IS TO BE INSTALLED)
 - n. A 2600mm w X 2600mm h ACCESS PANEL IN THE CEILING OF THE SHIELD FOR DELIVERY OF THE SYSTEM
 - o. REINSTALLATION OF THE ACCESS PANEL AND PERFORMING A FINAL TEST OF COMPLETED ROOM THE DAY OF DELIVERY
 - p. MAGNETIC SHIELDING AS DIRECTED BY CUSTOMER AND TO SPECIFICATIONS PROVIDED BY FUJIFILM HEALTHCARE
 - q. VERIFICATION THAT THE FINISH SUB-FLOOR OF THE RF SHIELD (SCAN ROOM) MEETS FUJIFILM's SPECIFICATION FOR LEVELNESS AND FLATNESS IN THE AREA OF THE GANTRY AND PATIENT TABLE

- THE RF SHIELDING VENDOR MUST BE CONTACTED FOR ADDITIONAL WALL PENETRATIONS, WAVE GUIDES AND/OR EMI FILTERS AS REQUIRED IF A SOUND SYSTEM IS DESIRED (SOUND SYSTEM IS AVAILABLE FROM HMSE AS AN OPTION)
- WHEN POSSIBLE, THE CONCRETE SLAB SHOULD BE RECESSED TO ACCOMMODATE THE RF SHIELD'S FLOOR THICKNESS. THIS AMOUNT WILL VARY BY VENDOR. IF THE SLAB CANNOT BE RECESSED, A SMALL RAMP THAT EXTENDS OUT FROM THE DOOR THRESHOLD IS REQUIRED.
- METHODS OF RF SHIELDED ROOM CONSTRUCTION VARY. THE VENDOR SHOULD BE SELECTED PRIOR TO THE FINAL PLANNING OF THE ROOM. CONTACT FUJIFILM HEALTHCARE LOGISTICS AND SERVICES PLANNING DEPARTMENT FOR A LIST OF VENDORS EXPERIENCED WITH FUJIFILM MRI SYSTEMS.
- IF OXYGEN OR OTHER MEDICAL GAS LINES ARE DESIRED IN THE MRI SCAN ROOM, THE PENETRATIONS MUST BE INTEGRATED INTO THE RF SHIELD AND OCCUR WITHIN 1200mm OF THE FILTER PANEL. CONSULT WITH THE RF SHIELD VENDOR
- ADDITIONAL AND OPTIONAL CONCERNS SUCH AS (OUTSIDE WINDOWS, EXTRA DOORS, ETC. SHOULD BE DISCUSSED WITH THE RF VENDOR AND REVIEWED BY FUJIFILM HEALTHCARE LOGISTICS AND SERVICES PRIOR TO FINALIZATION OF THE PLANS.
- IF NECESSARY, IT IS THE CUSTOMERS RESPONSIBILITY TO COORDINATE SUITE CONSTRUCTION, THE RF VENDOR AND DELIVERY TIMING TO ACCOMMODATE AN INDIRECT DELIVERY PATH.

- ① RF SHIELD-FOUR (4) WALLS, CEILING AND FLOOR REQUIRED TO PROVIDE 90dB ATTENUATION FROM 1,0 - 100MHz. TYPICAL 127mm WALL THICKNESS SHOWN, WILL VARY WITH VENDOR.
- ② WALL OPENING: 2600mm w X 2600mm h CLEAR OPENING REQUIRED. LOCATION MAY VARY.
- ③ WAVE GUIDE FOR EMERGENCY EXHAUST VENT FAN. SIZED BY ARCHITECT, PROVIDED BY RF VENDOR. LOCATION MAY VARY.
- ④ CRYOGEN VENT (QUENCHPIPE). CONNECTED TO GANTRY AS PART OF THE DELIVERY PROCESS.
- ⑤ WAVEGUIDE TO SERVE AS PRESSURE RELIEF. SIZE AND LOCATION MAY VARY. SIZED BY ARCHITECT
- ⑥ FILTER PANEL FOR SYSTEM INTERCONNECTION. PROVIDED BY HCE AND INSTALLED BY RF VENDOR PRIOR TO FINAL ROOM TEST.
- ⑦ RF WINDOW: 1200mm w X 810mm h (TYP.), MOUNTED AT 900mm AFFL
- ⑧ RF DOOR: 1200mm w X 2100mm h (TYP.)
- ⑨ SIX (6) WAVE GUIDES PROVIDED AND INSTALLED BY RF VENDOR. FOUR (4) LOCATED IN LOWEST SECTION OF WIREWAY AND TWO (2) LOCATED ABOVE MCU PANEL. MOUNTED FLUSH ON SCAN ROOM SIDE OF WALL
- ⑩ WAVEGUIDE FOR HVAC SUPPLY AND RETURN DUCTS. SIZE AND LOCATION MAY VARY.

NOTE: VERIFY ALL ROUGH-IN OPENINGS WITH RF VENDOR.



- Ⓐ GANTRY
- Ⓑ PATIENT TABLE
- Ⓒ OPERATOR'S WORKSTATION
- Ⓓ RFIP UNIT
- Ⓔ GPA UNIT
- Ⓚ HE COMPRESSOR
- Ⓜ SENSE UNIT (INSTALLATION ON TOP OF HEAT EXCHANGER)
- Ⓝ HEAT EXCHANGER

NOTE : ALL DRAWINGS, ILLUSTRATIONS AND SKETCHES ARE SHOWN DIMENSIONLESS

NOTE: THE INDICATION OF "(MRI) SCAN ROOM" REFERS TO THE "RF SHIELDED ROOM"

OASIS Velocity - RF shielding				
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GENERAL PROPOSAL INSTALLATION DRAWINGS

08

ENVIRONMENTAL

HVAC NOTES

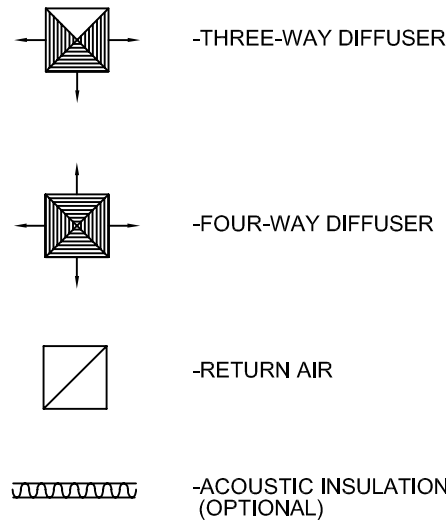
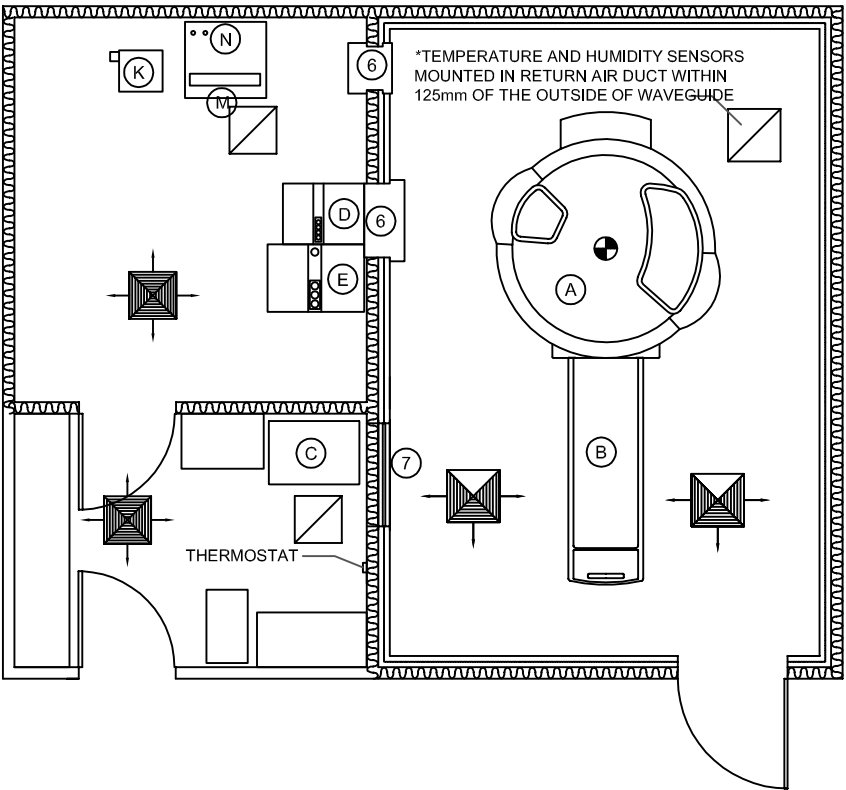
- THE MRI SCAN ROOM TEMPERATURE MUST BE MAINTAINED BETWEEN 20°-24° DEGREES C WITH A MAXIMUM ALLOWABLE FLUCTUATION OF 3,0 DEGREES PER HOUR
- ALL ROOMS MUST BE MAINTAINED AT 45%-60% OR 20%-60% RELATIVE HUMIDITY, AS SHOWN IN THE CHART BELOW, NON-CONDENSING.
- CHANGES TO THE SCAN ROOM TEMPERATURE WILL AFFECT THE SYSTEM IMAGING. THE ENVIRONMENT MUST BE MAINTAINED AT ALL TIMES (24HRS/DAY; 7 DAYS/WEEK)
- THERMOSTATS MAY NOT BE USED IN THE MRI SCAN ROOM. A REMOTE SENSOR IN THE RETURN AIR DUCT OUTSIDE OF THE RF SHIELD MUST BE UTILIZED FOR CONTROLLING THE MRI SCAN ROOM ENVIRONMENT. THE THERMOSTAT SHOULD BE LOCATED IN THE CONTROL AREA OUTSIDE 0,5 mT AREA
- IT IS THE RESPONSIBILITY OF THE HVAC DESIGNER TO ENSURE THERE IS ADEQUATE AIRFLOW ACROSS THE REMOTE MRI SCAN ROOM SENSOR TO MAINTAIN PROPER ENVIRONMENTAL CONDITIONS.
- AC UNITS, CONDENSERS, AND AIR HANDLERS MUST BE LOCATED OUTSIDE OF 0,1 mT AREA FROM MAGNET ISOCENTER AS SHOWN ON THE SITE SPECIFIC DRAWING AND SHOULD BE MOUNTED ON VIBRATION ISOLATORS.
- A FLEXIBLE, NON-CONDUCTIVE BOOT PROVIDED BY THE HVAC CONTRACTOR MUST BE USED TO CONNECT DUCTWORK TO THE EXTERIOR SIDE OF HVAC WIVEGUIDES
- DUCTWORK AND DIFFUSER GRILLS WITHIN THE MRI SCAN ROOM MUST BE NON-FERROMAGNETIC.
- CARE SHOULD BE TAKEN TO ENSURE THE SUPPLY AIR IS DIRECTED AWAY FROM THE GANTRY AND PATIENT TABLE. DIFFUSER PLACEMENT SHOULD BE DESIGNED TO ENSURE EVEN AIR DISTRIBUTION.
- IF A FLOOR MOUNTED COMPUTER ROOM HVAC SYSTEM IS USED, PLEASE NOTIFY FUJIFILM HEALTHCARE SERVICES PLANNING DEPARTMENT TO ENSURE ADEQUATE SERVICE SPACE IS AVAILABLE FOR THIS UNIT AS WELL AS THE OASIS Velocity NENTS IN THE EQUIPMENT ROOM.
- COMPUTER FLOORING IN THE EQUIPMENT ROOM MAY BE USED FOR A SUPPLY PLENUM.
- IT IS THE CUSTOMER'S RESPONSIBILITY TO ENSURE THAT A PROPER ENVIRONMENT IS CONTINUOUSLY MAINTAINED FOR THE OASIS Velocity SYSTEM. THE CHART BELOW MUST BE USED BY THE ARCHITECT/ENGINEER DESIGNING THE HVAC SYSTEM. CUSTOMER SUPPLIED AND OPTIONAL COMPONENTS MUST BE IDENTIFIED. THE HVAC DESIGNER IS RESPONSIBLE FOR VERIFYING THE LOADS BASED ON

LOCATION	COMPONENT	HEAT DISSIPATION		TEMPERATURE GRADIENT	dB LEVEL (MAX.)	RELATIVE HUMIDITY
		kW/h	kcal/h			
SCAN ROOM	Ⓐ OASIS Velocity GANTRY	2,955	2541	20°C - 24°C MAXIMUM CHANGE 2,5° PER HOUR	112	45%-60%
	Ⓑ PATIENT TABLE					
	Ⓔ FILTER BOX					
CONTROL ROOM	Ⓒ OPERATOR'S WORKSTATION	1,35	1157	18°C - 26°C MAXIMUM CHANGE		20%-60%
EQUIPMENT ROOM	Ⓓ IRCP	10,93	9,32	18°C - 26°C MAXIMUM CHANGE 2,5° PER HOUR	55	20%-60%
	Ⓔ GPA UNIT					
	Ⓕ MCU3					
	Ⓚ HELIUM COMPRESSOR				86	20%-60%
	Ⓜ SENSE UNIT					
	Ⓝ HEAT EXCHANGER					
	Ⓔ FILTER BOX					

ACTUAL UNITS TO BE USED OTHER LOADS (i.e., PEOPLE, LIGHTS, OUTSIDE CONDITIONS, ETC.) MUST ALSO BE CONSIDERED IN THE DESIGN. ALTHOUGH THE DESIGN OF THE HVAC SYSTEM IS THE RESPONSIBILITY OF THE CUSTOMER, FUJIFILM HEALTHCARE STRONGLY SUGGESTS THE USE OF A ZONED SYSTEM DUE TO THE LARGE VARIANCE OF HEAT LOADS FROM ROOM TO ROOM.

ACOUSTICAL NOTES

- SIMILAR TO OTHER MR IMAGING SYSTEMS, THE OASIS Velocity PRODUCES NOISE LEVELS (WHILE SCANNING) THAT ARE GENERALLY CONSIDERED UNACCEPTABLE FOR A NORMAL OFFICE ENVIRONMENT. DAILY PERMISSIBLE NOISE EXPOSURE LEVELS SHOULD BE CONSIDERED WHEN PLANNING A FACILITY. THE ADJACENT CHART PROVIDES THE MAXIMUM NOISE LEVELS CREATED DURING THE SCAN PROCESS.
- ACOUSTICAL DAMPENING FOR BOTH THE SCAN AND EQUIPMENT ROOM IS HIGHLY RECOMMENDED FOR THE COMFORT OF OCCUPANTS OF SURROUNDING AREAS INCLUDING THE TECHNICIAN. SOUND INSULATION IN THE WALLS AND THE ADDITION OF ACOUSTICAL DAMPENING PANELS TO THE SCAN ROOM WALLS ARE TWO MEANS OF LIMITING NOISE TRANSMISSION. SCAN ROOM SOUND PANELS SHOULD BE CONSTRUCTED OF NON-FERROUS MATERIALS (WOOD FRAMES, VELCRO HANGING SYSTEMS). THE ARCHITECT MAY WISH TO CONSULT AN ACOUSTICAL ENGINEER FOR ADDITIONAL METHODS OF SOUND DAMPENING.
- IF SURFACE MOUNTED ACOUSTIC PANELS ARE SPECIFIED IN THE SCAN ROOM, FUJIFILM HEALTHCARE RECOMMENDS THAT FINAL FIELD MEASUREMENTS BE DELAYED UNTIL AFTER THE FILTER PANELS HAVE BEEN INSTALLED TO ENSURE PROPER FITMENT. THE EXTEND OF WALL COVERAGE MAY VARY FROM THAT SHOWN ABOVE DEPENDENT ON LAYOUT, PANEL CONSTRUCTION AND AMOUNT OF ACOUSTIC DAMPENING DESIRED.
- SOME RF SHIELDING VENDORS OFFER OPTIONS THAT INTEGRATE SOUND REDUCTION MATERIALS INTO THE RF SHIELD ITSELF. CONTACT THE RF SHIELDING VENDOR FOR FURTHER INFORMATION.



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NOTE: THE INDICATION OF "(MRI) SCAN ROOM" REFERS TO THE "RF SHIELDED ROOM"

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CHILLER REQUIREMENTS

THE OASIS Velocity MRI SYSTEM REQUIRES CHILLED WATER FOR COOLING OF THE CRYOGEN COMPRESSOR, GRADIENT AMPLIFIER AND COILS. WITH EACH OASIS Velocity SYSTEM FUJIFILM HEALTHCARE WILL PROVIDE A HEAT EXCHANGER UNIT LOCATED IN THE OASIS Velocity EQUIPMENT ROOM. COOLING WATER IS TO BE PROVIDED TO THE OASIS Velocity HEAT EXCHANGER AND MRI SYSTEM.

OPTION 1: CUSTOMER SUPPLIED CHILLED WATER SOURCE, I.E. BUILDING CHILLED WATER SYSTEM

CONTACT THE FUJIFILM HEALTHCARE LOGISTICS AND SERVICES PLANNING DEPARTMENT FOR ADDITIONAL DETAILS.

CUSTOMER / GENERAL CONTRACTOR RESPONSIBILITIES:

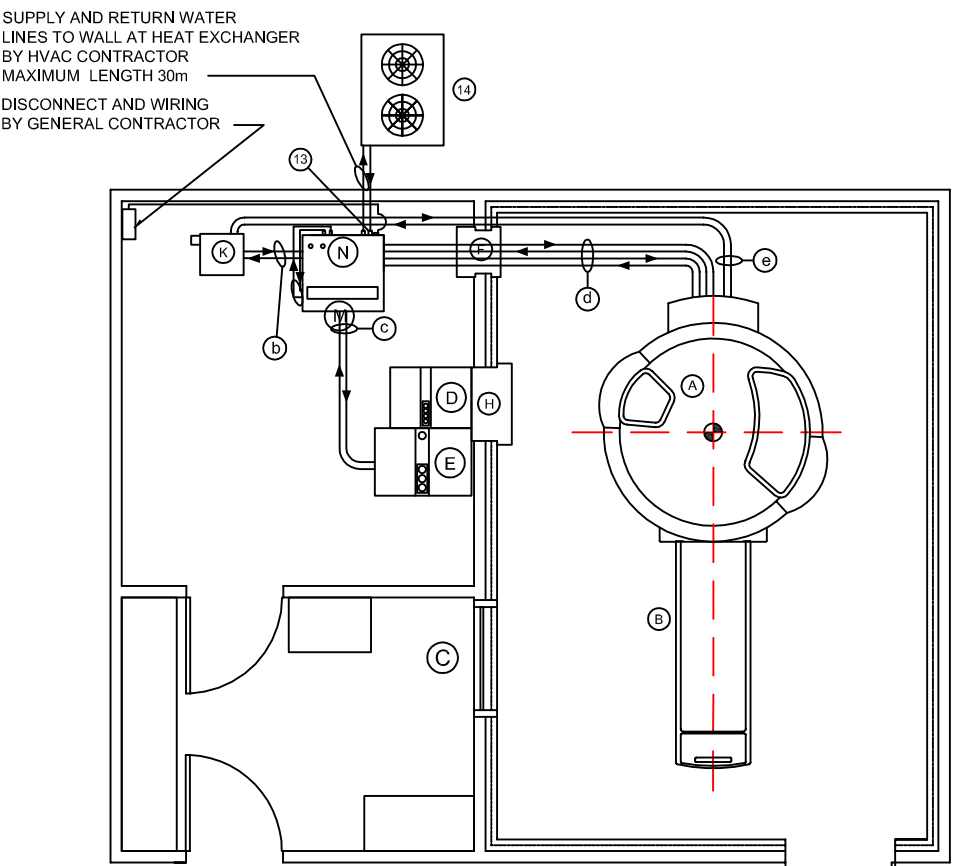
- IDENTIFY AN OUTDOOR LOCATION FOR THE CHILLER AND PAD.
- RECEIVE AND UNLOAD CHILLER SYSTEM AT DESIRED LOCATION AND SET IT IN PLACE AT THE SITE
 - CHILLER CAN BE DELIVERED TO MRI SITE OR CONTRACTOR FACILITY, IF DELIVERED TO LOCATION OTHER THAN MRI SITE, CONTRACTOR IS RESPONSIBLE FOR TRANSPORTING EQUIPMENT TO FINAL LOCATION
 - WHEN CHILLER IS DELIVERED, CONTRACTOR IS RESPONSIBLE FOR PROVIDING NECESSARY EQUIPMENT TO OFF LOAD IT FROM THE TRUCK AND MOVING THE UNIT INTO PLACE. A FORKLIFT W/ A MINIMUM CAPACITY OF 2.5 TONS AND EXTENDED LENGTH FORKS IS REQUIRED TO PROPERLY OFFLOAD, LIFT AND MOVE THE CHILLER.

- PROVIDE AND INSTALL ELECTRICAL POWER AS REQUIRED FOR THE CHILLER.
- PROVIDE AND INSTALL A HOSE BIBB AND FLOOR DRAIN IN THE EQUIPMENT ROOM.
- PROVIDE ANY FACILITY CONSTRUCTION / UPGRADE REQUIRED FOR CHILLER INSTALLATION
- PROVIDE SUB-CONTRACTOR(S) TO PERFORM INSTALLATION OF THE CHILLER INCLUDING ALL PLUMBING, WIRING AND STARTUP ITEMS.
- INSTALL, FILL, TEST AND HAVE CHILLER OPERATIONAL PRIOR TO THE DELIVERY OF THE OASIS Velocity SYSTEM.
- PROVIDE AND INSTALL A TEMPERATURE GAUGE, PRESSURE GAUGE AND FLOW METER.
- PROVIDE AND INSTALL A 3000MM LONG LOOP REINFORCED HOSE BETWEEN SUPPLY AND RETURN OUTLETS IN EQUIPMENT ROOM TO ALLOW FOR START-UP AND NO LOAD TESTING OF CHILLER.

FUJIFILM HEALTHCARE RESPONSIBILITIES

- COORDINATE WITH THE CUSTOMER / CONTRACTOR TO ARRANGE DELIVERY DATE AND ADDRESS FOR THE CHILLER AT THE APPROPRIATE TIME DURING THE CONSTRUCTION PHASE OF THE PROJECT.
- PROVIDE AND INSTALL ALL PLUMBING AND CONNECTIONS BETWEEN THE HEAT EXCHANGER AND THE OASIS Velocity MRI SYSTEM.

- SENSE UNIT TO HELIUM COMPRESSOR
- GRADIENT POWER AMPLIFIER LOOP
- GRADIENT COIL LOOP
- HELIUM LINES
- RF POWER AMPLIFIER LOOP

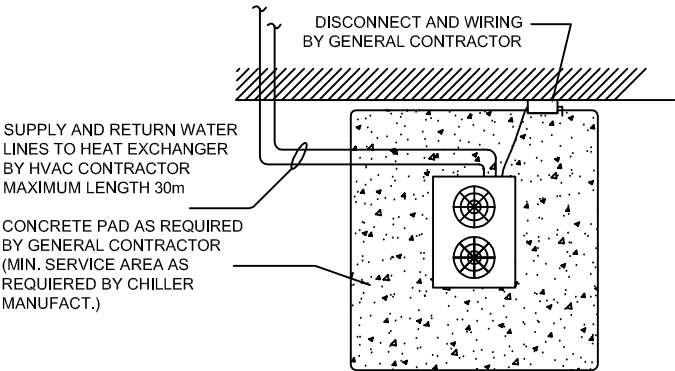


CHILLER CONNECTION SCHEMATIC NOT TO SCALE

NOTE: RUNS SHOWN ARE SCHEMATIC ONLY AND DO NOT INDICATE ACTUAL CONNECTION POINTS

OUTDOOR CHILLER PLAN

NOT TO SCALE



EQUIPMENT BY FUJIFILM HEALTHCARE

- (A) OASIS Velocity GANTRY
- (B) PATIENT TABLE
- (C) OPERATOR'S WORKSTATION
- (D) IRCP UNIT
- (E) GPA UNIT
- (F) MCU3
- (H) FILTER PANEL
- (K) HE COMPRESSOR
- (M) SENSE UNIT (INSTALLATION ON TOP OF HEAT EXCHANGER)
- (N) HEAT EXCHANGER

- (b) HE COMPRESSOR
- (c) GC - AMPLIFIER LOOP
- (d) GRADIENT COIL LOOP
- (e) HE - PRESSURE LINE

EQUIPMENT/ACCESORIES BY OTHERS

- (13) CHILLER INTERFACE (SEE PG.11)
- (14) CHILLER (OUTDOOR)

NOTE: SOME EQUIPMENT/ACCESORIES BY OTHERS MAY NOT BE SHOWN ON TYPICAL LAYOUTS

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NOTE: THE INDICATION OF "(MRI)" SCAN ROOM" REFERS TO THE "RF SHIELDED ROOM"

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CHILLER INSTALLATION SPECIFICATIONS

CHILLER CHECKLIST REQUIREMENTS

THE START UP OF THE CHILLER MUST BE PERFORMED BY AN AUTHORIZED AGENT OF CHILLER COMP. IN ORDER TO ENSURE IT IS DONE PROPERLY AND TO MAINTAIN THE FACTORY WARRANTY. HAVING THE CHILLER INSTALLED AND OPERATIONAL WHEN THE FUJIFILM OASIS Velocity ARRIVES ON SITE IS ESSENTIAL FOR A SUCCESSFUL DELIVERY BECAUSE IT IS SHIPPED WITH ITS CRYOSTAT PRE-COOLED (FILLED WITH CRYOGENS). THE FOLLOWING STEPS MUST BE PERFORMED IN ORDER TO ENSURE THAT THE CHILLER IS READY FOR CONNECTION TO THE OASIS Velocity.

CUSTOMER/ INSTALLING CONTRACTOR RESPONSIBILITIES

- INSTALL ALL WATER PIPING RUNS AND COMPONENTS USING THE FOLLOWING GUIDELINES:
 - CARE MUST BE TAKEN TO MAINTAIN THE INTERNAL CLEANLINESS OF THE PIPE. EXCESSIVE PARTICLES IN THE WATER SYSTEM CAN REDUCE THE EFFICIENCY OF, OR CAUSE DAMAGE TO THE SYSTEM. CARE SHOULD BE TAKEN TO MAINTAIN THE INTERNAL CLEANLINESS OF THE PIPING.
 - INSTALL TYPE "L" HARD COPPER PIPING IN AS SHORT AND DIRECT A PATH AS POSSIBLE TO MINIMIZE THE PRESSURE DROP ACROSS THE PIPING.
 - INSTALL PIPE VIBRATION ISOLATORS AT THE CHILLER ON BOTH SUPPLY AND RETURN LINES.
 - INSTALL A DRAIN AT THE BASE OF EVERY RISE TO ALLOW FOR COMPLETE DRAINAGE OF PIPING.
 - INSTALL AIR VENTS AT ALL HIGH POINTS IN THE SYSTEM TO ELIMINATE AIR FROM THE SYSTEM.
 - PROPERLY SUPPORT ALL PIPING WHERE REQUIRED.
 - INSTALL HEAT TRACE ON ALL PIPING EXPOSED TO LOW AMBIENT TEMPERATURES (1°C OR BELOW) AND COVER WITH A SUITABLE THICKNESS OF CLOSED-CELL, UV RESISTANT INSULATION. ROUTE POWER FOR HEAT TRACE FROM A SEPARATELY FUSED DISCONNECT. IDENTIFY DISCONNECT AS HEAT TRACE POWER SOURCE WITH A WARNING THAT POWER MUST NOT BE TURNED OFF EXCEPT WHEN UNIT IS BEING SERVICED.
 - PROPERLY SLEEVE AND INSULATE PIPE PENETRATIONS THROUGH ALL ROOF AND / OR WALL PENETRATIONS TO PROTECT PIPE FROM POTENTIAL DAMAGE.
 - PROVIDE AND INSTALL A 3600mm LONG LOOP OF 32mm REINFORCED HOSE BETWEEN SUPPLY AND RETURN OUTLETS IN EQUIPMENT ROOM TO ALLOW FOR START-UP AND NO LOAD TESTING OF CHILLER.
- PROVIDE AND INSTALL A BALL VALVE ON BOTH THE SUPPLY AND RETURN LINES AT THE HEAT EXCHANGER UNIT TO ALLOW ISOLATION FOR SERVICE OR UNIT REPLACEMENT IF NECESSARY. THE CHILLER INCLUDES FACTORY INSTALLED ISOLATION VALVES AT BOTH THE SUPPLY AND RETURN CONNECTIONS.
- PROVIDE AND INSTALL A PRESSURE GAUGE 1 (0-7 bar) AND A TEMPERATURE GAUGE 2 (0-60° C) ON THE SUPPLY SIDE BETWEEN THE BALL VALVE AND HEAT EXCHANGER TO MEASURE SUPPLY PRESSURE AND TEMPERATURE AT THE UNIT.
- PROVIDE AND INSTALL A TEMPERATURE GAUGE 2 (0-60°C) AND AN IN-LINE FLOW 3 METER (68 L/MIN) ON THE RETURN SIDE BETWEEN THE HEAT EXCHANGER AND BALL VALVE TO MEASURE RETURN TEMPERATURE AND FLOW. PROVIDE A MOVEABLE SLEEVE OVER THE FLOW METER TO PREVENT EXPOSURE TO LIGHT WHEN METER IS NOT BEING READ. PROLONGED EXPOSURE TO LIGHT MAY PROMOTE BIOLOGICAL GROWTH IN THE WATER LINES.
- COMPLETE THE INSTALLATION OF THE CHILLER PER THE REQUIREMENTS IN THE INSTRUCTION MANUAL PROVIDED WITH THE SYSTEM.

THE CHILLER MUST BE INSTALLED AND STARTED NO LATER THAN 60 DAYS AFTER DELIVERY. FAILURE TO DO SO WILL RESULT IN ADDITIONAL EXPENSE TO THE END USER FOR MANDATORY REPLACEMENT OF PUMP SEALS.

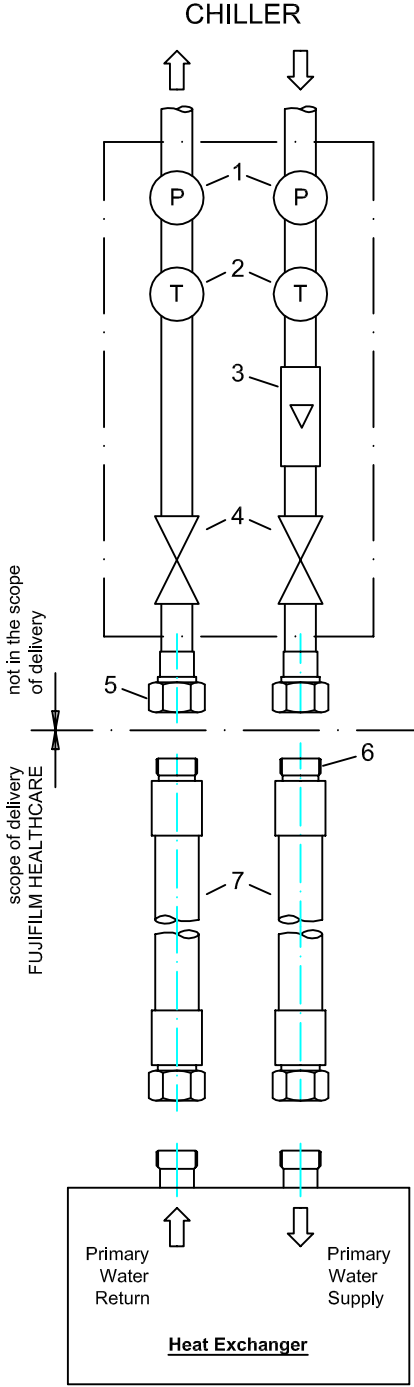
- CLOSE ISOLATION VALVES ON CHILLER AND FLUSH PIPING WITH CITY WATER UNTIL STREAM BECOMES CLEAR. FLUSH FOR AN ADDITIONAL 20 MINUTES. CLOSE DRAIN AND PERFORM LEAK CHECK FOR A MINIMUM OF 30 MINUTES AT CITY WATER PRESSURE. IT IS RECOMMENDED TO FILL THE SYSTEM THROUGH A WATER METER TO HELP ESTABLISH THE CORRECT QUANTITY OF GLYCOL SOLUTION REQUIRED AT FILL. OPEN ALL DRAINS (INCLUDING DRAINS INSTALLED AT THE BASE OF EVERY RISE) AND DRAIN ALL PIPING RUNS. USE COMPRESSED DRY AIR OR DRY NITROGEN TO DRY PIPING PRIOR TO CHARGING SYSTEM WITH GLYCOL SOLUTION.
- FILL ENTIRE WATER PIPING LOOP WITH A MIXTURE OF PROPYLENE GLYCOL (35% BY VOLUME) AND PORTABLE DISTILLED WATER. PURGE ALL AIR FROM THE LINES. **DO NOT USE AUTOMOTIVE ANTIFREEZE. USE OF AUTOMOTIVE ANTIFREEZE WILL DAMAGE SYSTEM.** THE USE OF AN EXTERNAL PUMP MAY BE REQUIRED TO PROPERLY FILL THE SYSTEM WITH GLYCOL SOLUTION. IF CITY WATER IS USED IN PLACE OF POTABLE DISTILLED WATER, IT MUST BE RUN THROUGH A DE-IONIZATION FILTER. DO NOT ENERGIZE CHILLER. DO NOT USE THE PUMP ON THE CHILLER TO FILL THE SYSTEM.
- PROVIDE ADDITIONAL PROPYLENE GLYCOL (40% BY VOLUME) AND DISTILLED WATER MIXTURE FOR USE BY START-UP AGENT TO TOP OFF SYSTEM WHEN NO LOAD START-UP IS PERFORMED. ADDITIONAL GLYCOL/WATER MIXTURE (APPROXIMATELY 20L) WILL ALSO BE REQUIRED FOR USE BY FUJIFILM WHEN THE MAGNET IS DELIVERED.
- POWER MUST BE APPLIED TO CHILLER A MINIMUM OF 24 HOURS PRIOR TO FIRST OPERATION TO PROPERLY HEAT COMPRESSOR CRANK CASE. POWER IS ALSO REQUIRED TO PROPERLY COMPLETE CHILLER INSTALLATION CHECKLIST.

CHILLER ANTI-FREEZE

IT IS CRITICAL THAT THE CHILLER BE FILLED WITH A PROPER MIXTURE PROPYLENE GLYCOL ANTI-FREEZE AND DISTILLED WATER (40% PROPYLENE GLYCOL BY VOLUME). AN IMPROPERLY MIXED SOLUTION WILL HAVE A NEGATIVE IMPACT ON THE EFFICIENCY OF THE CHILLER.

CHILLER SPECIFICATIONS

HEAT LOAD 37 kW
OUTLET TEMP. 6°C - 8°C
REC: FLOW VOLUME: 68L/MIN. ≈ 4,1 m³/h
FLUID DELIVERY PUMP PRESSURE 10 bar
CALCULATED PRESSURE LOSS IN HEAT EXCHANGER: 0,5 bar
MAX. ALLOWED ANTI FREEZE 40%



- Legend
- 1 Pressure gauge
 - 2 Temperature gauge
 - 3 Flow meter/limiter
 - 4 Shut off valve
 - 5 G 1 1/2" Swivel nut connector
 - 6 G 1 1/2" Thread connector
 - 7 Hose set 3m

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NOTE: THE INDICATION OF "(MRI)" SCAN ROOM" REFERS TO THE "RF SHIELDED ROOM"

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AIR CONDITIONING

THESE AIR CONDITIONING CONFIGURATIONS ARE BASED ON HEAT OUTPUT OF THE EQUIPMENT LISTED IN ENCLOSED SPECIFICATIONS. THESE VALUES DO NOT INCLUDE PEOPLE, LIGHTS AND HEAT GENERATED BY ADJECENT ROOMS OR SUN LIGHT. NOTE DOWN ANY VARIATIONS OF EQUIPMENT LOCATION FOR YOUR SITE WHEN CALCULATING YOUR COOLING REQUIREMENTS FOR EACH ROOM. THE TEMPERATURE AND HUMIDITY VALUES SHOULD BE RECORDED BY A THERMO-HYDROGRAPH TO ENSURE THAT THE DATA REQUIRED IS AVAILABLE FOR THOUBLESHOOTING.

NOTE
THE AIR CONDITIONING AND VENTILATIONS SYSTEMS MUST BE PLANNED ACCORDING TO:
EN 16798-3 INTERNATIONAL REGULATIONS OR LOCAL/COUNTRY/HOSPITAL SPECIFICATIONS

HEAT DISSIPATION:

SCAN ROOM (AIR)	TECHNICAL ROOM (AIR)	CONTROL ROOM (AIR)	CHILLER
2,955 kWh	10,93 kWh	1,35 kWh	max. 37 kW

TEMPERATURE / HUMIDITY

ROOM DESCRIPTION	TEMPERATURE RANGE	HUMIDITY
SCAN ROOM	20 -24 ° C (2,5 °C / h)	45 - 60 %
TECHNICAL ROOM	18 -26 ° C (2,5 °C / h)	20 - 60 %
CONTROL ROOM	18 -26 ° C	20 - 60 %

SCAN ROOM

THE CONDITIONED AIR MUST ENTER THE SCAN ROOM VIA RF FILTER ELEMENTS THROUGH AIR GRIDS. A SLIGHT OVERPRESSURE IS REQUESTED TO AVOID PENETRATION OF DUST. FILTER CLASS MINIMUM EU 5 ACCORDING TO LOCAL SPECIFICATIONS FOR SUPPLY AIR (IN HOSPITAL 2 STEP FILTER (EU 5/EU 7) REQUESTED ACCORDING TO REGULATION SUCH AS DIN, EN, FEDERAL STANDARD, GHOST, ECT.) FOR FAN MOTOR SELECTION OF AIR HANDLING UNIT, A MINIMUM OF 100 pa EXTERNAL PRESSURE LOSS INSIDE THE RF CABIN TO THE RF FILTER ELEMENTS IS REQUESTED.
THE EXCHANGE RATE IN THE SCAN ROOM DEPENDS ON THE ROOM SIZE AND THE COOLING CAPACITY AND SHOULD BE MINIMUM 800m³/h.
THE AIR FLOW AT THE SUSPENDED CEILING MUST BE DISTRIBUTED VIA AIR DIFFUSERS EVENLY TO ENSURE A COMFORTABLE SITUATION.
IT IS RECOMMENDED THAT THE AC SYSTEM BE FITTED TO PROVIDE WARNING OF MALFUNCTIONS, SINCE EXCESSIV OVER OR UNDER TEMPERATURES OR OUT OF SPECIFICATION OF RELATIVE HUMIDITY MIGHT CAUSE DAMAGE OF THE EQUIPMENT (OPTICAL/ACOUSTICAL WARNING DEVICES). 800m³/h MUST BE REMOVED FROM THE SCAN ROOM VIA RF FILTER ELEMENTS THROUGH AIR GRIDS.
DUE TO THE USE OF HELIUM IN THE MAGNET ROOM 100% FRESH/EXHAUST AIR RECOMMENDED, NO RE-CIRCULATION AIR.
MAXIMUM ROOM TEMPERATURE DEVIATIONS SHOULD BE LESS THAN 2,5°C/h.

EMERGENCY VENTING SYSTEM

IT IS RECOMMENDED TO INSTALL AN EMERGENCY VENTING SYSTEM IN THE SCAN ROOM THAT IS ACTIVATED WHEN ROOM OXYGEN LEVEL LESS THAN 19%. THIS SYSTEM MUST BE ABLE TO REMOVE THE VOLUME OF EXAMINATION ROOM 15 TIMES PER HOUR OR MORE AND VENT THIS OUTSIDE THE BUILDING. ADDITIONAL SEPERATE RF FILTER NECESSARY. POSSIBLE NEGATIVE PRESSURE IN THE MAGNET ROOM DUE TO EXHAUST AIR MUST BE AVOIDED BY SUFFICIENT SUPPLY AIR.
THE UNIT CAN BE ACTIVATED AUTOMATICALLY BY THE OXYGEN MONITOR SYSTEM. IT MUST BE POSSIBLE TO ACTIVATE THE SYSTEM MANUALLY IN CASE OF HELIUM REFILLING.

CONTROL ROOM

IT IS THE RESPONSIBILITY OF THE CUSTOMER TO DEFINE COMFORTABLE CONDITIONS FOR PATIENT AND STAFF VIA AC SYSTEM WITH REFERENCE TO THE LISTED SPECIFICATIONS.

TECHNICAL ROOM

THE AIR CONDITIONING MUST BE DESIGNED WITH AIRFLOW THROUGH THE SYSTEM CABINETS TO AVOID HOT SPOTS OR INSUFFICIENT COOLING IN THE TECHNICAL ROOMS THE CABINET PLACEMENT (LAYOUT) TO BE CONSIDERED FOR INSTALLATION OF AC UNITS.
THE VARIABLE HEAT DISSIPATION (PEAK LOAD/STANDBY OPERATION) REQUESTED AC SYSTEM WITH SUFFICIENT CAPACITY CONTROLS ACCORDING LISTED SPECIFICATION.
A SLIGHT OVERPRESSURE IS REQUESTED TO AVOID PENETRATION OF DUST. IT IS RECOMMENDED THAT THE AC SYSTEM BE FITTED TO PROVIDE WARNING OF MALFUNCTIONS, SINCE EXCESSIVE OVER OR UNDER TEMPERATURES, OR OUT OF SPECIFICATION OF RELATIVE HUMIDITY, MIGHT CAUSE DAMAGE TO THE EQUIPMENT (OPTICAL / ACOUSTICAL WARNING DEVICES).

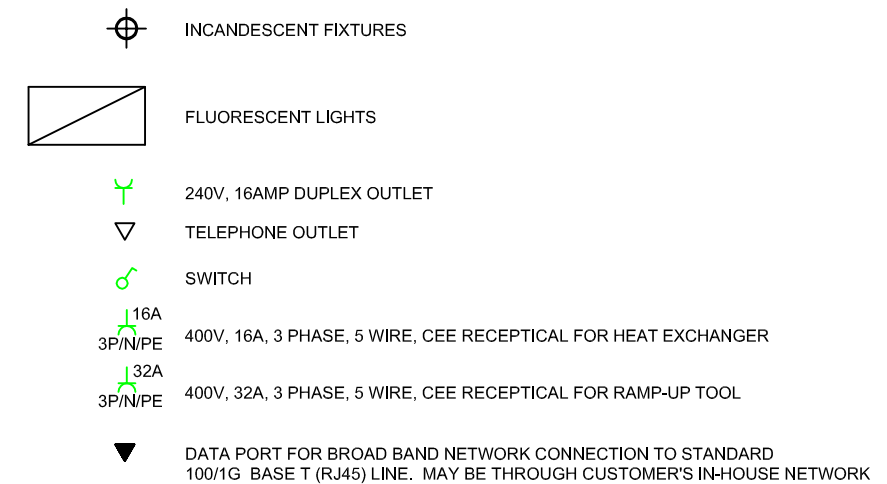
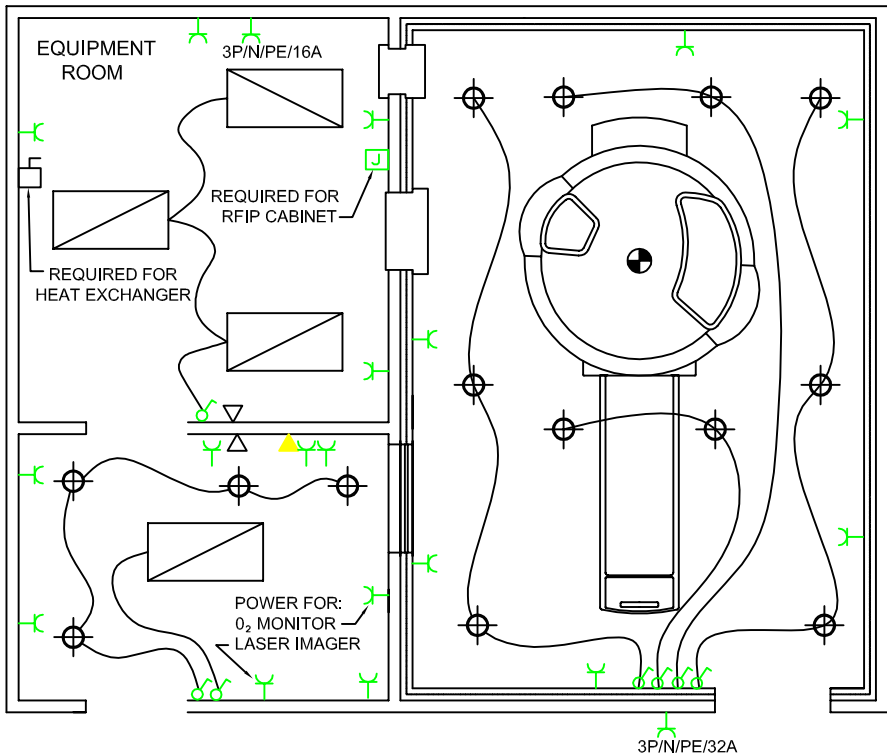
CHILLER SYSTEM

CHILLED WATER SUPPLY REQUESTED FOR GRADIENT COIL, GRADIENT CABINET AND HELIUM COMPRESSOR FOR COLD HEAD. THE HELIUM COMPRESSOR REQUIRES CHILLED WATER 24 h/365d.

NOTE : ALL DRAWINGS, ILLUSTRATIONS AND SKETCHES ARE SHOWN DIMENSIONLESS
NOTE: THE INDICATION OF "(MRI) SCAN ROOM" REFERS TO THE "RF SHIELDED ROOM"

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ELECTRICAL - LIGHTNING



LIGHTING NOTES

THE LIGHTING IN THE SUITE SHOULD BE DESIGNED TO ALLOW MULTIPLE LEVELS OF BRIGHTNESS. THE FOLLOWING POINTS MUST BE REVIEWED TO ENSURE THE PROPER DESIGN OF THE LIGHTING AND ELECTRICAL SYSTEMS FOR THE SUITE.

- RECESSED CANS AND/OR WALL SCONCES ARE SUGGESTED. WHILE MRI SPECIFIC UNITS ARE HIGHLY RECOMMENDED FOR THE SCAN ROOM, STANDARD INCANDESCENT LIGHT FIXTURES MAY BE USED AS WELL, BUT, FERROMAGNETIC MATERIAL SHOULD BE AS MINIMAL AS POSSIBLE. REMOVABLE ACCESSORIES (GRILLES, BAFFLES, ETC.) MUST BE NON-FERROMAGNETIC.
- THE USE OF LED LIGHTING AND SPECIFICALLY MRI COMPATIBLE LIGHT FIXTURES IS HIGHLY RECOMMENDED FOR THE SCAN ROOM. THERE ARE SEVERAL BENEFITS WHEN USING MRI SPECIFIC LIGHTING FIXTURES AND LED LAMPS. WHEN CONFIGURING LIGHTING SCHEMES UTILIZING L.E.D. LIGHTING, CARE MUST BE TAKEN TO ENSURE THE NUMBER OF FIXTURES AND THEIR LOCATION WILL PROVIDE THE LUMEN LEVELS DESIRED.
 - a. UTILIZATION OF EITHER OR BOTH OF THESE PRODUCTS WILL HELP ELIMINATE POTENTIAL SOURCES OF NOISE ARTIFACTS CAUSED BY ITEMS WITHIN THE MRI SCAN ROOM.
 - b. STANDARD INCANDESCENT BULBS (INCLUDING THOSE WITH A ROUGH USAGE RATING) TEND TO BURN OUT RAPIDLY IN A MRI ENVIRONMENT. LED's HAVE A SIGNIFICANTLY LONGER LIFE (UP TO 100,000 HRS), GREATLY REDUCING MAINTENANCE COSTS FOR RE-LAMPING.
 - c. ENERGY USAGE WITH LED LIGHTING IS SUBSTANTIALLY REDUCED IN COMPARISON WITH INCANDESCENT BULBS.
- WALL SCONCES MAY BE HELPFUL WHEN THE CEILING HEIGHT IS A CONCERN OR TO OBTAIN LOW LEVEL AMBIENT LIGHT.
- CARE SHOULD BE TAKEN WHEN LOCATING LIGHT FIXTURES. LIGHTS SHOULD NOT BE POSITIONED DIRECTLY ABOVE THE MAGNET OR THE PATIENT TABLE.
- TRACK LIGHTING IS NOT PERMITTED IN THE SCAN ROOM.
- FLUORESCENT LIGHTS (INCLUDING LONG LIFE COMPACT FLUORESCENT BULBS) ARE NOT PERMITTED IN THE SCAN ROOM. USE ONLY INCANDESCENT OR MRI RATED LED LIGHTING. REDUCED INCANDESCENT BULB LIFE CAN BE EXPECTED DUE TO THE PULSING OF THE MAGNETIC FIELD IN THE SCAN ROOM. IF USING INCANDESCENT LIGHTS, ROUGH USAGE BULBS ARE RECOMMENDED. FLUORESCENT LIGHTS IN THE CONTROL AND EQUIPMENT ROOMS SHOULD NOT BE ON WHEN SCANNING.
- AC DIMMERS ARE NOT PERMITTED IN THE MRI SUITE (SCAN, CONTROL AND EQUIPMENT ROOMS). A MULTI-SWITCH DESIGN SHOULD BE USED TO ADJUST LIGHTING LEVELS.
- LIGHTING CIRCUITS MUST NOT CREATE A PERIPHERAL LOOP AROUND THE MAGNET. THIS WILL CAUSE INTERFERENCE TO THE SYSTEM WHEN IMAGING.
- EQUIPMENT ROOM LIGHTING SHOULD BE A MINIMUM OF 40 LUMENS/SQ.-METER.
- THE ELECTRICAL POWER FOR THE LIGHTING AND RECEPTACLES IN THE SUITE IS TO BE DERIVED FROM THE MRI SUB PANEL AND SHARE A COMMON GROUND (SEE THE ELECTRICAL SHEETS FOR FURTHER DETAILS). THE ELECTRICAL CONTRACTOR MUST COORDINATE BOTH THE NUMBER AND LOCATION OF EMI FILTERS WITH THE RF VENDOR.

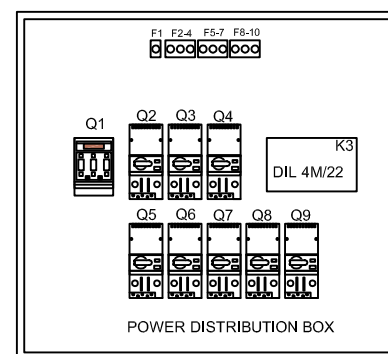
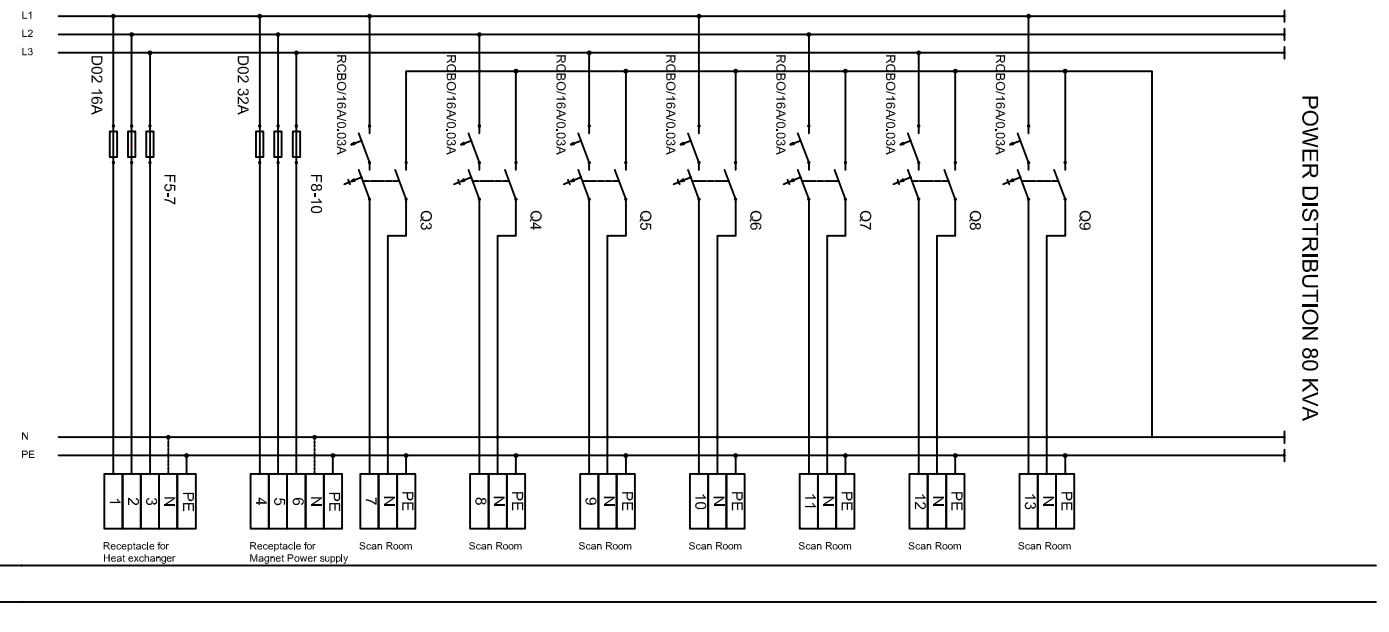
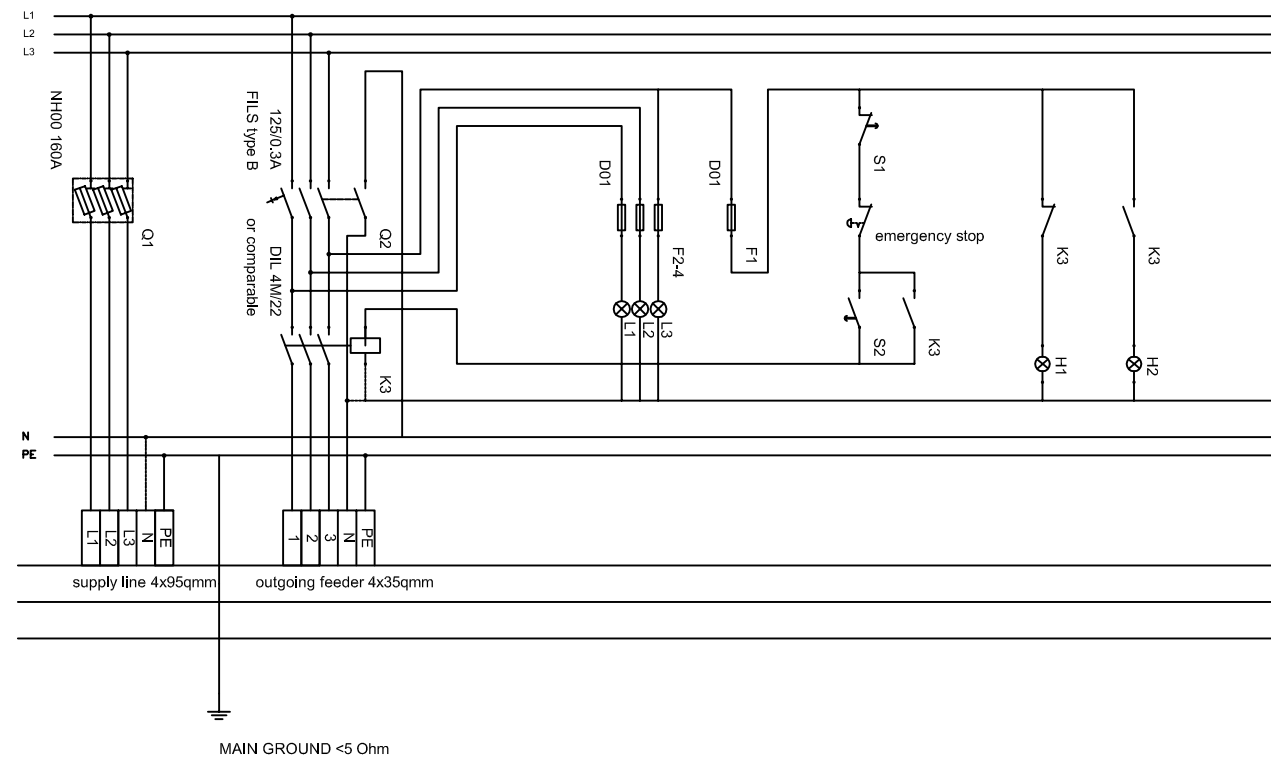
- WHILE SPECIFIC COMPONENTS MAY REQUIRE OUTLETS AS NOTED, ADDITIONAL CONVENIENCE OUTLETS ARE REQUIRED IN THE SUITE (MINIMUM ONE PER WALL) FOR SERVICING AND MAINTENANCE.
- OUTLETS LOCATED ON WALLS WITH SURFACE MOUNTED WIREWAYS MUST BE INSTALLED HIGH ENOUGH TO ENSURE THEY WILL NOT BE COVERED BY THE WIREWAY (TOP AT 610mm A/FF)
- LOCATION OF NETWORK CONNECTIONS, TELEPHONE LINE JACKS, REQUIRED OUTLETS, ETC. WILL VARY. REFER TO SITE SPECIFIC DRAWING FOR ACTUAL PLACEMENT. NETWORK CONNECTIONS AND TELEPHONE JACKS ARE **NOT** PERMITTED IN THE MRI SCAN ROOM.
- REQUIREMENTS FOR ALL NON FUJIFILM SUPPLIED COMPONENTS MUST BE VERIFIED WITH EQUIPMENT VENDOR OR MANUFACTURER FOR ACTUAL PLACEMENT.

NOTE : ALL DRAWINGS, ILLUSTRATIONS AND SKETCHES ARE SHOWN DIMENSIONLESS
NOTE: THE INDICATION OF "(MRI) SCAN ROOM" REFERS TO THE "RF SHIELDED ROOM"

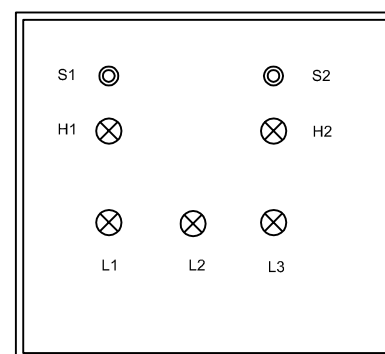
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ELECTRICAL - PANEL SCHEMATIC

OASIS Velocity MRI SUITE



H: 1000 mm
B: 800 mm
T: 215 mm



FRONT / DOOR

PROPOSAL FOR POWER DISTRIBUTION BOX

THE GUIDELINES FOR ELECTRICAL POWER DISTRIBUTION BOXES IN THE MEDICAL FIELD MUST TO BE FOLLOWED IN ACCORDANCE WITH THE LEGAL, COUNTRY-SPECIFIC RULES.

NOTE : ALL DRAWINGS, ILLUSTRATIONS AND SKETCHES ARE SHOWN DIMENSIONLESS

NOTE: THE INDICATION OF "(MRI) SCAN ROOM" REFERS TO THE "RF SHIELDED ROOM"

OASIS Velocity- Electrical - Panel schematic				
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ELECTRICAL - GENERAL NOTES

OASIS Velocity MAGNET POWER REQUIREMENTS:

VOLTAGE: 400V, 3 PHASE, 5 WIRE
REGULATION: +/- 10% WITH 5% REGULATION NO LOAD TO FULL LOAD
FREQUENCY: 50/60 HZ +/- LESS THAN 1%
LOAD CAPACITY: 80 KVA
CIRCUIT BREAKER SIZE: AS REQUIRED

THIS IS THE LOAD FOR THE OASIS Velocity SYSTEM ONLY. THE LOAD FOR THE CHILLER MUST BE CALCULATED SEPARATELY. TOTAL ELECTRICAL SERVICE REQUIREMENTS FOR THE SUITE AND EQUIPMENT MUST BE DETERMINED BY AN ELECTRICAL ENGINEER OR OTHER QUALIFIED INDIVIDUAL.

OASIS Velocity POWER CONSUMPTION:

IN RUSH AT POWER ON: 31 KW
SYSTEM "OFF" AT NIGHT: 8,3 KW
LOW LEVEL SCAN (S/N SCAN): 20 KW
MAXIMUM PEAK POWER DEMAND: 75KW

HEAT EXCHANGER POWER CONSUMPTION: 1,4 KW

PROVIDED BY FUJIFILM HEALTHCARE EUROPE:

HMSE WILL BE RESPONSIBLE FOR THE FOLLOWING:

- AC POWER WIRING AND CONNECTIONS FROM THE IRCP CABINET TO ALL SYSTEM COMPONENTS EXCEPT THE HEAT EXCHANGER. GROUNDING CONDUCTORS FROM RFIP CABINET TO ALL SYSTEM COMPONENTS EXCEPT HEAT EXCHANGER.
- PROVIDING AND INSTALLING ALL SYSTEM INTERCONNECT CABLES.

PROVIDED BY THE ELECTRICAL CONTRACTOR:

THE ELECTRICAL CONTRACTOR WILL BE RESPONSIBLE FOR SUPPLYING AND INSTALLING THE FOLLOWING:

- CIRCUIT BREAKER PANEL (DISTRIBUTION BOX) TYPICALLY LOCATED IN THE EQUIPMENT ROOM. THIS PANEL SHALL ONLY SERVE LOADS AS SHOWN ON THE WIRING SCHEMATIC (PG. 14).
- THE MRI SUB-PANEL FEEDER SHALL BE COPPER CONDUCTOR, SIZED AS REQUIRED BY IEC AND AS REQUIRED TO PROVIDE NECESSARY VOLTAGE LEVEL AT IRCP CABINET. THE FEEDERS SHALL BE FROM A CIRCUIT BREAKER OR FUSED SWITCH SIZED PER IEC IN A DISTRIBUTION PANEL AT THE SERVICE ENTRANCE OR THE SOURCE OF THE SEPARATELY DERIVED SYSTEM.
- BRANCH CIRCUIT WIRING FROM THE DISTRIBUTION BOX TO THE IRCP CABINET AS SHOWN ON THE SCHEMATIC (PG14), A PIGTAIL LONG ENOUGH TO ALLOW THE IRCP TO BE MOVED 1,50m PLUS AN ADDITIONAL 1,50m FOR USE INTERNAL TO THE CABINET IS REQUIRED.
- INSTALL CRIMP TERMINAL LUGS ON POWER WIRING TO IRCP CABINET. SIZE AS APPROPRIATE FOR WIRE GAUGE AND MOUNTING TO 10mm ATTACHMENT STUD IN IRCP CABINET.
- IF THE DISTRIBUTION BOX IS NOT LOCATED IN THE EQUIPMENT ROOM, A SURFACE MOUNTED DISCONNECT SWITCH (NON-FUSED) IS REQUIRED IN CLOSE PROXIMITY TO THE IRCP CABINET. SIZE AS REQUIRED BY CODE.
- CEE 16 A RECEPTACLE FOR HEAT EXCHANGER. LOCATION AS SHOWN ON SITE SPECIFIC DRAWING
- CEE 16 A RECEPTACLE FOR MAGNET RAMP UP TOOL. LOCATION AS SHOWN ON SITE SPECIFIC DRAWING.
- LIGHTING AND CONTROLS IN MRI SCAN, CONTROL, AND EQUIPMENT ROOMS (PG13)

- 230V RECEPTACLES WITH ISOLATED GROUND TERMINALS IN MRI SCAN AND EQUIPMENT ROOMS.
- ISOLATED GROUNDING SYSTEM FOR ALL LOADS FED BY DISTRIBUTION BOX (SEE GROUNDING NOTES).
- RF SHIELD GROUNDING WITH AN INSULATED 35mm² COPPER GROUNDING CONDUCTOR FROM RF SHIELD GROUND STUD TO THE FILTER PANEL OR TO ISOLATED GROUND BUS IN DISTRIBUTION BOX.
- CONFIGURATION AND INSTALLATION OF ANY POWER CONDITIONING OR UPS EQUIPMENT. SEE NOTE BELOW AND CONTACT THE FUJIFILM HEALTHCARE LOGISTICS AND SERVICES PLANNING DEPARTMENT FOR FURTHER INFORMATION.
- BRANCH CIRCUIT WIRING FROM BUILDING DISTRIBUTION SYSTEM FOR LASER IMAGER AND EMERGENCY EXHAUST FAN PER MANUFACTURER'S SPECIFICATION AS REQUIRED PER LOCAL REQUIREMENTS.
- WIREWAYS AS SPECIFIED ON FUJIFILM HEALTHCARE LOGISTICS AND SERVICES SITE SPECIFIC DRAWING. WIREWAYS MUST BE NON-FERROUS METAL AND ARE TYPICALLY 150mm x 600mm (INNER DIMENSIONS) WIREWAY WITH THREE (3) DIVIDERS (FOUR [4]- 150mm x 150mm SECTIONS) WITH REMOVABLE COVERS.
- OUTLETS, JUNCTION BOXES AS NOTED ON FUJIFILM HEALTHCARE LOGISTICS AND SERVICES PLANNING DEPARTMENT SITE SPECIFIC DRAWING.

PROVIDED BY THE RF SHIELDING VENDOR:

THE RF VENDOR WILL BE RESPONSIBLE FOR SUPPLYING AND INSTALLING THE FOLLOWING:

- EMI FILTERS AT EACH LOCATION WHERE AN ELECTRICAL FEED PASSES THROUGH THE RF SHIELDING. THE LOCATION AND NUMBER OF THESE FILTERS MUST BE COORDINATED WITH THE ELECTRICAL CONTRACTOR.
- EMI FILTER AS REQUIRED TO MOUNT OPTIONAL OXYGEN MONITOR PROBE IN SCAN ROOM WITH MONITOR IN REMOTE LOCATION.
- RF WAVEGUIDES AT EACH LOCATION WHERE AN HVAC DUCT OR AIR INLET PASSES THROUGH THE RF SHIELDING. THE LOCATION AND NUMBER OF THESE WAVEGUIDES MUST BE COORDINATED WITH THE HVAC CONTRACTOR
- A GROUND STUD ON THE RF SHIELD. THIS GROUND STUD SHALL BE CONNECTED TO THE GROUND BUS OF THE FILTER PANEL (OR ISOLATED GROUND BUS IN THE DISTRIBUTION BOX) WITH AN INSULATED 35mm² COPPER GROUNDING CONDUCTOR AS NOTED IN THE ELECTRICAL CONTRACTOR SECTION.

GROUNDING NOTES

AN ISOLATED GROUNDING SYSTEM SHALL BE PROVIDED FOR ALL LOADS CONNECTED TO THE DISTRIBUTION BOX AS FOLLOWS:

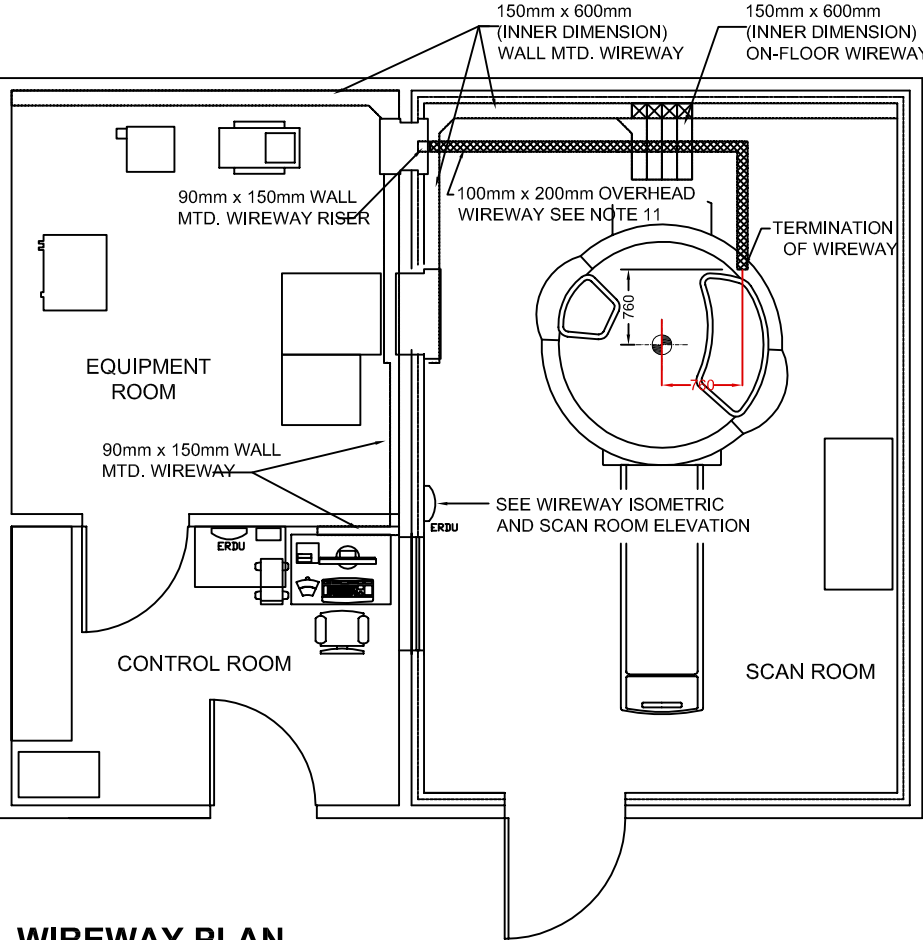
- AN ISOLATED GROUND BUS SHALL BE PROVIDED IN THE MRI RFIP CABINET. THE RESISTANCE BETWEEN BUILDING GROUND AND SEPERATE GROUND SHALL BE NO MORE THAN 5 OHMS.

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WIREWAY NOTES



WIREWAY PLAN
NOT TO SCALE

WIREWAY NOTES

ALL WORK IS TO CONFORM TO APPLICABLE BUILDING CODES. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL WIREWAYS, JUNCTION BOXES, AS INDICATED IN THESE STANDARD DETAILS AND AS SHOWN ON THE CUSTOMER'S SITE SPECIFIC FUJIFILM HEALTHCARE LOGISTICS AND SERVICES DRAWING.

- THE WIREWAYS PROVIDE THE METHOD AND MEANS TO HOUSE AND PROTECT THE SYSTEM INTERCONNECTION CABLING. EACH WIREWAY COMPARTMENT HOUSES CABLES THAT PERFORM DIFFERENT SPECIFIC FUNCTIONS. FOR THE EXACT RUNS REQUIRED, REFER TO THE FUJIFILM HEALTHCARE LOGISTICS AND SERVICES SPECIFIC DRAWING.
- THE WIREWAYS FOR THE SYSTEM MUST BE METALLIC AND PROVIDE FOR RF SEPARATION OF THE CABLES. PVC WIREWAYS ARE NOT ACCEPTABLE. NON-FERROMAGNETIC (ALUMINUM OR STAINLESS STEEL) WIREWAYS MUST BE USED IN THE SCAN ROOM. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THE MATERIAL CHOSEN COMPLIES WITH APPLICABLE BUILDING CODES.
- THE WIREWAY MUST PROVIDE FOUR (4) INDIVIDUAL COMPARTMENTS. THIS MAY BE ACCOMPLISHED USING A SINGLE 600mm x 150mm (INNER DIMENSIONS) DUCT WITH THREE (3) DIVIDERS. THE DIVIDERS MUST BE CAPABLE OF SUPPORTING 6kg/m. AT THE DIRECTION OF THE FUJIFILM HEALTHCARE LOGISTICS AND SERVICES INSTALLER, THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR CUTTING OUT DIVIDERS OR DUCTS FOR ALL CABLE TRANSITION AREAS. ELECTRICAL CONTRACTOR SHALL ALSO PROVIDE GROMMET MATERIAL FOR ALL OPENINGS CUT IN WIREWAY.
- THE WIREWAY MUST HAVE A REMOVABLE COVER. THE DIVIDERS MUST MAKE CONTACT WITH THE COVER TO FORM RF TIGHT COMPARTMENTS. **NOTE:SCREWS USED TO SECURE COVER MUST BE AS SHORT AS POSSIBLE AND SELF TAPPING SCREWS ARE NOT ALLOWED. CAUTION MUST BE USED WHEN SECURING COVERS TO ENSURE SCREWS DO NOT PENETRATE CABLES, WATER LINES OR HELIUM LINES.**
- ALL WIREWAYS MUST BE BONDED TO THE RF SHIELD.
- AN ON-FLOOR OR IN-FLOOR WIREWAY WITH REMOVABLE COVER TO THE REAR OF THE GANTRY IS REQUIRED FOR SYSTEM INTERCONNECT CABLES.
- A WIREWAY WITH A REMOVABLE COVER AND ONE (1) DIVIDER (MIN. 100mm x 60mm) IS REQUIRED FROM THE EQUIPMENT ROOM WIREWAY TO THE OPERATOR WORKSTATION LOCATION (REFER TO SITE SPECIFIC DRAWING FOR EXACT CONFIGURATION). MOUNTING HEIGHT MUST BE BETWEEN 90mm A/FF (MIN.) AND 610mm A/FF (MAX.). FOR SITES WHERE THE EQUIPMENT ROOM IS REMOTE FROM THE CONTROL ROOM, A 100mm CONDUIT WITH MINIMUM 0,9m RADIUS BENDS MAY BE UTILIZED. THE CONDUIT IS RUN FROM THE EQUIPMENT ROOM WIREWAY AND MUST TERMINATE IN A 200mm X 200mm X 150mm (MINIMUM) JUNCTION BOX AT THE OPERATOR WORKSTATION LOCATION. THE JUNCTION BOX MOUNTING HEIGHT IS AS SPECIFIED ABOVE FOR WIREWAY. MAXIMUM CABLE LENGTH AVAILABLE FOR A CONDUIT RUN IS 13,5m BETWEEN THE REAR OF THE IRCP CABINET AND THE OPERATOR WORKSTATION LOCATION. A FISH LINE MUST BE PROVIDED BY THE ELECTRICAL CONTRACTOR IF CONDUIT IS USED.
- **THE ROUGH OPENING FOR THE FILTER PANEL IS BASED ON THE TOP OF THE WIREWAY BEING AT >700mm AFFL.** DIFFERENCES BETWEEN WIREWAY MANUFACTURERS MAY EFFECT ACTUAL HEIGHT. AFTER SELECTING AND DESIGNING WIREWAY BASED ON CUSTOMER'S SITE SPECIFIC FUJIFILM HEALTHCARE LOGISTICS AND SERVICES DRAWING CONFIRM AND ADJUST FILTER PANEL ROUGH OPENING HEIGHT ABOVE FLOOR AS REQUIRED. COORDINATE ROUGH OPENING LOCATION WITH RF VENDOR.
- A COMPUTER FLOOR MAY BE UTILIZED IN THE EQUIPMENT ROOM IN LIEU OF WIREWAYS. IN SOME INSTANCES, A COMPUTER FLOOR MAY BE REQUIRED DUE TO INTERCONNECTING CABLE LIMITATIONS (SEE CUSTOMER'S SITE SPECIFIC FUJIFILM HEALTHCARE LOGISTICS AND SERVICES DRAWING). IF A COMPUTER FLOOR IS USED, A MINIMUM CLEAR HEIGHT OF 200mm IS REQUIRED.

ADDITIONALLY, IT IS THE CUSTOMER'S/CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE NECESSARY MINIMUM CLEAR HEIGHT OF 200mm IS REQUIRED. ADDITIONALLY, IT IS THE CUSTOMER'S/CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE NECESSARY KNOCKOUTS (WITH PROTECTIVE GROMMET MATERIAL) AT ALL EQUIPMENT LOCATIONS, AS DIRECTED BY THE FUJIFILM HEALTHCARE LOGISTICS AND SERVICES INSTALLATIONS REPRESENTATIVE. THE CONTRACTOR, OR HIS REPRESENTATIVE AFTER SYSTEM DELIVERY

- ALL WIREWAYS, JUNCTION BOXES, CONDUITS, AND COMPUTER FLOOR MUST BE IN PLACE AND COMPLETE PRIOR TO DELIVERY OF THE SYSTEM.
- THE WIREWAY FOR CUSTOMER SITES WILL VARY FROM THAT SHOWN ON THESE PAGES REFER TO THE SITE SPECIFIC FUJIFILM HEALTHCARE LOGISTICS AND SERVICES OASIS Velocity DRAWING FOR FURTHER CLARIFICATION AND EXACT REQUIREMENTS. REFER TO THE ELECTRICAL SECTION OF THESE STANDARD DETAILS FOR THE OASIS Velocity A.C. POWER WIRING SPECIFICATIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL WORK CONFORMS TO APPLICABLE BUILDING CODES.
- REFER TO FUJIFILM LOGISTICS AND SERVICES PLANNING DEPARTMENT DRAWING FOR SITE SPECIFIC WIREWAY LAYOUT.

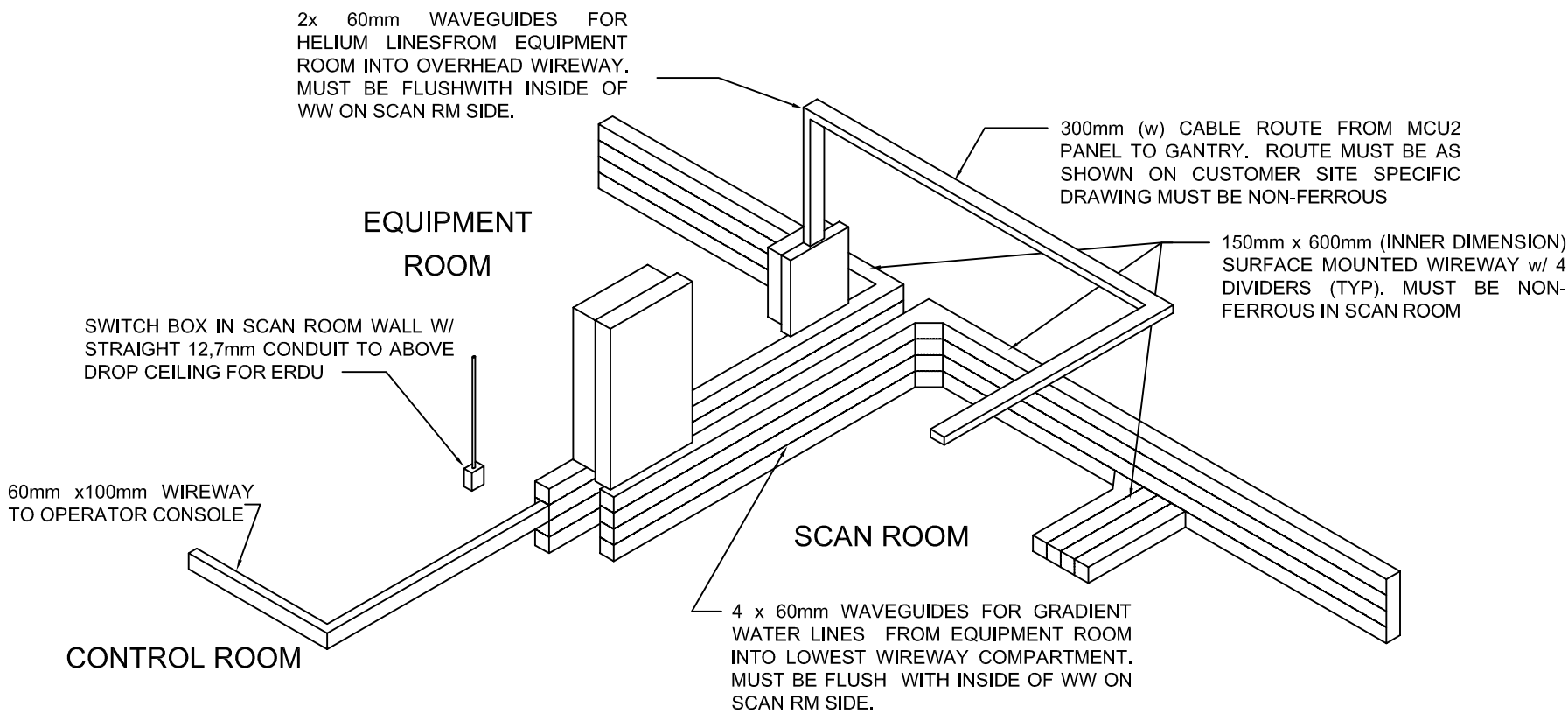
A MINIMUM OF 7600mm OF WIREWAY IS REQUIRED BETWEEN THE FILTER PANEL AND GANTRY IN ORDER TO ACCOMODATE FIXED LENGTH CABLING

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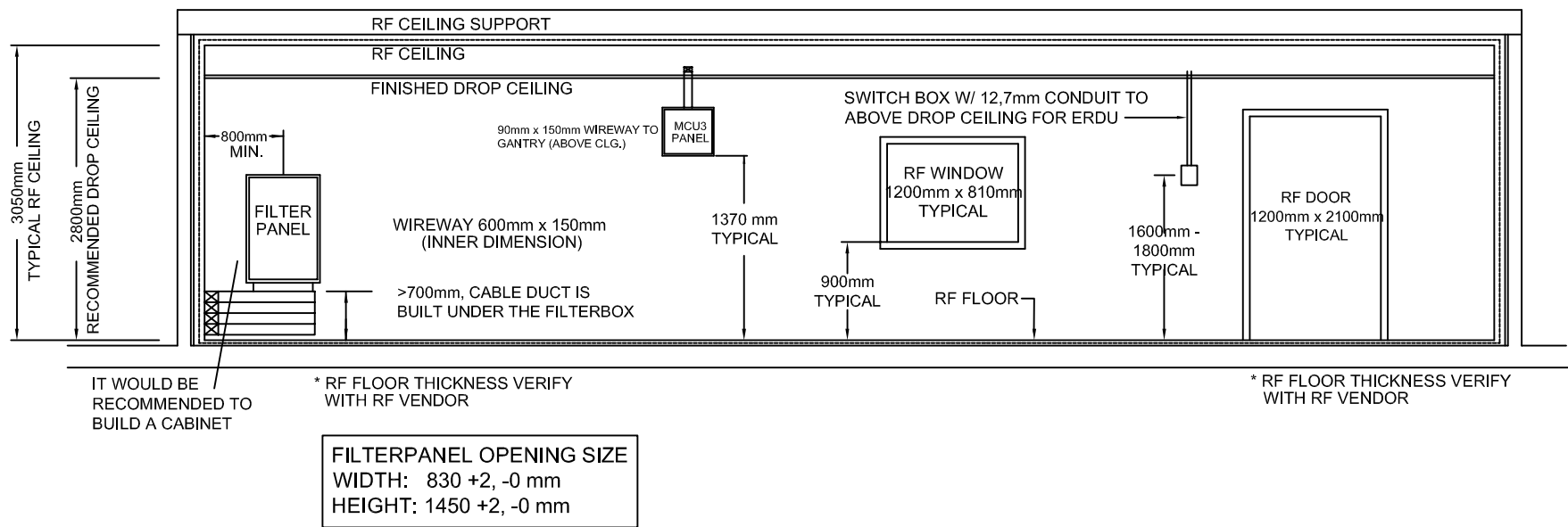
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WIREWAY NOTES (CONT.)

WIREWAY ISOMETRIC



SCAN ROOM ELEVATION



FILTER PANEL NOTES

- THE FILTER PANEL SHOULD BE SURFACE MOUNTED ON THE SCAN ROOM FINISHED WALL. THIS ASSURES THE CABLES WILL DROP CLEANLY INTO THE WIREWAY.
- THE FILTER PANEL SHOULD BE MOUNTED SO THAT AN RF TIGHT SEAL IS PROVIDED AROUND THE PERIMETER OF BOTH SIDES OF THE RF WALL.
- THE FILTER PANEL SHOULD BE MOUNTED USING NON-CONDUCTIVE FRAMING TO MAINTAIN THE GROUNDING INTEGRITY.
- IF METAL STUDS ARE USED, ROUGH OPENING (R.O.) MUST BE FRAMED IN WOOD ON BOTH SCAN AND EQUIPMENT ROOM SIDES
- FILTER PANEL ROUGH OPENING HEIGHT AFF SCAN ROOM FLOOR IS BASED ON TOP OF WIREWAY BEING >700mm AT AFFL. IF TOP OF WIREWAY IS DIFFERENT, ADJUST OPENING ACCORDINGLY.

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MAGNET PROXIMITY

DEVICES AFFECTED BY MAGNETIC FIELDS	
0,1 mT	NUCLEAR CAMERAS, PET SCANNER, COLOR MONITORS, IMAGE INTENSIFIER, LINEAR ACCELERATOR, ULTRASOUND, CT SCANNER, MRI SCANNER, ELECTRON MICROSCOPE
0,3 mT	MULTI FORMAT CAMERA (LASER IMAGER), COMPUTER HARD DRIVES, ELECTRONIC MEMORY CARD, FERROUS CARD, WATCH
0,5 mT	PACE MAKER, CREDIT CARDS, CELLULAR PHONE, DEFIBRILLATORS, IMPLANTS

REQUIRED DISTANCE FROM ISOCENTER TO ITEMS THAT MAY AFFECT MAGNET	
3.00 m	LARGE FERROUS OBJECTS OVER 180kg, MAJOR STRUCTURAL STEEL, FERROUS CART
6.00 m	AUTOMOBILES, SMALL TRUCKS, HVAC AIR HANDLERS, HVAC CONDENSERS, WATER CHILLERS ELECTRICAL SUB-PANELS OVER 50 AMP, LARGE MOTORS (GAS AND ELECTRIC)
7.00 m	PHOTOVOLTAIC SYSTEMS INCL. THEIR CONNECTIONS AND CABLES
12.00 m	LARGE TRUCKS AND BUSES, ELEVATORS, ESCALATORS, LARGE ELECTRICAL TRANSFORMERS, LARGE ELECTRICAL PANELS (OVER 200 AMP), MAIN ELECTRICAL FEEDER LINES (INCLUDING UNDERGROUND)
60.00 m	HIGH TENSION ELECTRICAL LINES, RAILROAD TRACKS, HELICOPTER PAD

NOTE:
THE ABOVE CHARTS ARE INTENDED SOLELY AS A GUIDELINE AND NOT AS AN ALL-INCLUSIVE CHECKLIST. IT MAY BE POSSIBLE TO DAMPEN THE EFFECT OF SOME OF THE DC TYPE INFLUENCES (CAUSED BY MOVING OBJECTS) THROUGH THE USE OF MAGNETIC SHIELDING. THE EFFECT OF MAGNETIC SHIELDING AGAINST A.C. TYPE INTERFERENCE (ELECTRICAL POWER) IS SIGNIFICANTLY LESS THAN FOR D.C. TYPES. CONSULT WITH THE FUJIFILM HEALTHCARE LOGISTICS AND SERVICES SITE PLANNER FOR FURTHER INFORMATION.

MAGNET PLACEMENT

THE AREA COVERED BY THE MAGNET'S FRINGE FIELDS IS OF PRIME CONCERN WHEN SELECTING AN MRI SITE. CONSIDERATION MUST BE GIVEN TO THE FOLLOWING CONCERNS:

- USE OF THE SURROUNDING AREAS, INCLUDING SPACE ABOVE AND ADJACENT TO THE MAGNET. IT MAY BE POSSIBLE TO REDUCE THE INFLUENCE OF THE MAGNETIC FIELD ON ADJACENT SPACES WITH THE USE OF MAGNETIC SHIELDING. CONSULT WITH THE FUJIFILM HEALTHCARE LOGISTICS AND SERVICES PLANNING DEPARTMENT FOR FURTHER INFORMATION.
- TYPE OF CONSTRUCTION MATERIALS USED IN THE EXISTING STRUCTURES, PARTICULARLY COLUMNS, BEAMS, JOISTS, REINFORCEMENT STEEL, AND CAST IRON PIPES.
- LOCATION OF MECHANICAL EQUIPMENT AND OTHER MEDICAL MODALITIES.
- LOCATION OF ELEVATORS, LOADING DOCKS, PARKING LOTS, DRIVEWAYS, AND ELECTRICAL SERVICES (INCLUDING BURIED UTILITIES).
- A MAGNETIC FLUCTUATION TEST MUST BE PERFORMED AT ALL SITES TO ASSIST IN IDENTIFYING POSSIBLE SOURCES OF INTERFERENCE. A SITE CANNOT RECEIVE FINAL APPROVAL BY FUJIFILM HEALTHCARE LOGISTICS AND SERVICES SITE PLANNING WITHOUT THIS TEST.
- PHOTOVOLTAIC SYSTEMS AND THE CORRESPONDING CABLES AND CONNECTIONS MUST BE OUTSIDE A 7m RADIUS, MEASURED FROM THE ISO-CENTER OF THE MAGNET.

MAGNET SHIMMING

ONCE THE MRI SYSTEM IS INSTALLED, THE MAGNETIC FIELD IS SHIMMED TO COUNTERACT THE EFFECTS OF FERROMAGNETIC OBJECTS AROUND THE MAGNET. STEEL EQUIPMENT, STEEL OFFICE FURNITURE (PARTICULARLY METAL FILE STORAGE RACKS), OR OTHER LARGE FERROUS OBJECTS LOCATED NEAR THE MRI SCAN ROOM SHOULD NOT BE MOVED ONCE THE MAGNET IS SHIMMED. INTRODUCING OR MOVING LARGE FERROMAGNETIC OBJECTS INTO OR WITHIN THE MAGNETIC FIELD AFTER THE SYSTEM IS SHIMMED MAY CAUSE A DISTORTION IN THE FIELD HOMOGENEITY, AFFECTING IMAGE QUALITY.

PROPORTION OF MAGNETIC SHIELDING	
WEIGHT OF STEEL PLATE* (kg/m²)	DISTANCE FROM CENTER OF MAGNET TO STEEL PLATE (mm)
≤ 23	1130
≤ 54	1300

*ALLOY STEEL

MAGNET AFFECT ON LOOSE OBJECTS

ATTRACTION OF LOOSE FERROMAGNETIC OBJECTS IS OF CONCERN WITHIN THE MRI SCAN ROOM. THE MAGNET'S FIELD STRENGTH IS CAPABLE OF ACCELERATING UNRESTRAINED FERROUS OBJECTS. THE GREATER THE MASS OF THE OBJECT AND THE CLOSER IT GETS TO THE MAGNET, THE STRONGER THE ATTRACTION. NEAR THE MAGNET, HUMAN STRENGTH MAY NOT BE SUFFICIENT TO RESTRAIN FERROUS OBJECTS SUCH AS OXYGEN TANKS AND CRASH CARTS AND FIRE EXTINGUISHER. SUCH OBJECTS WILL BE DRAWN INTO (OR ONTO) THE MAGNET, POTENTIALLY CAUSING INJURY OR DEATH TO PERSONS AND DAMAGE TO THE MRI SYSTEM. SUCH OBJECTS MUST NOT BE ALLOWED IN THE SCAN ROOM. SPECIAL NONFERROUS EQUIPMENT SHOULD BE OBTAINED AND IDENTIFIED FOR USE IN THE MRI SCAN ROOM.

ACCESS RESTRICTION

IEC 60601-1-2 / EN 60601-1-2 AND IEC 60601-2-33 / EN 60601-2-33 (IN THE CURRENTLY VALID VERSION) REQUIREMENT RESTRICTS PUBLIC ACCESS WITHIN THE 0,5mT FIELD UNLESS INDIVIDUALS HAVE BEEN PROPERLY SCREENED.

GENERAL INFORMATION ON FIRE EXTINGUISHER

THE FIRE EXTINGUISHING EQUIPMENT FOR THE RF SHIELDED ROOM IS TO BE PROVIDED IN NON-MAGNETIC MATERIAL.
THE FIRE EXTINGUISHING AGENT SHOULD BE CO².

NOTE : ALL DRAWINGS, ILLUSTRATIONS AND SKETCHES ARE SHOWN DIMENSIONLESS

NOTE: THE INDICATION OF "(MRI) SCAN ROOM" REFERS TO THE "RF SHIELDED ROOM"

OASIS Velocity - Magnet proximity					<div>FUJIFILM Healthcare Logistics and Services Branch office of FUJIFILM Healthcare Europe Holding AG Europark Fichtenhain A 12 47807 Krefeld Tel.: +49 2151 6435 480/-486</div> <div>FUJIFILM Value from Innovation</div>	
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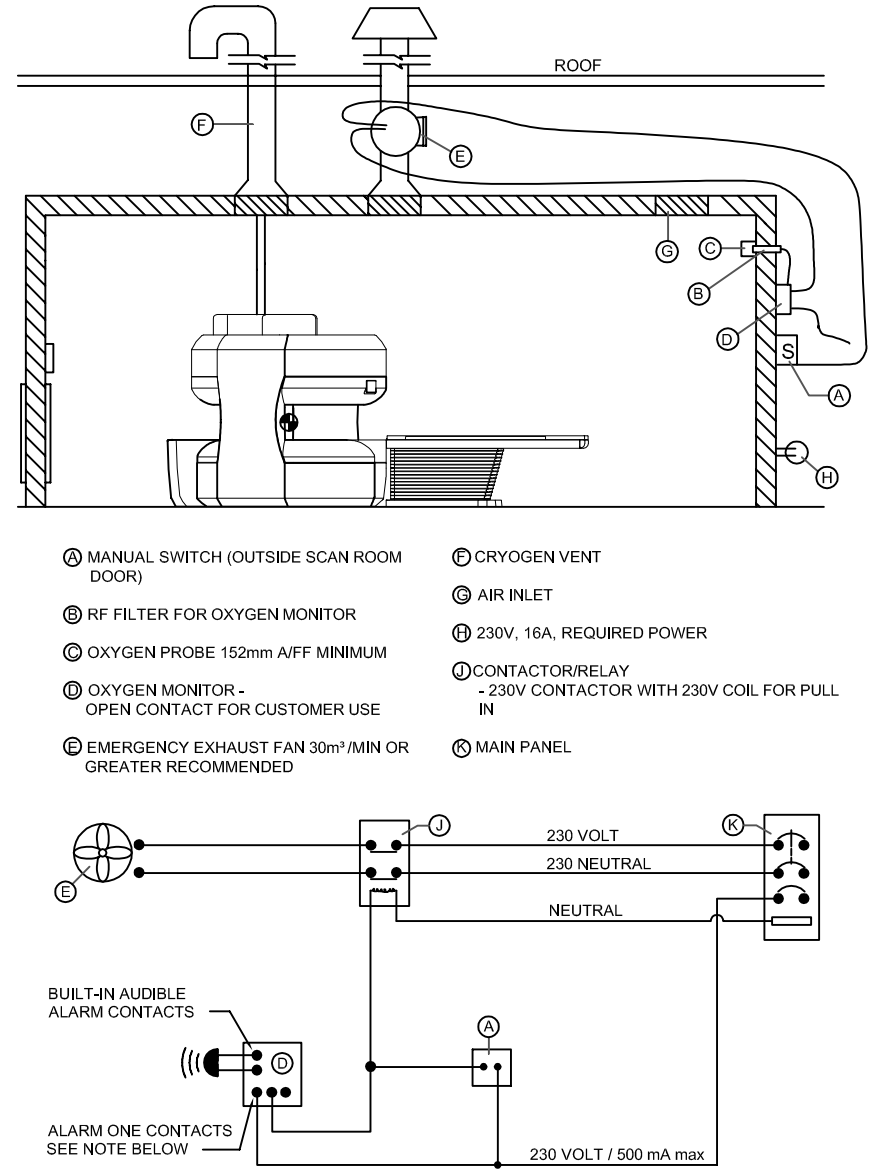
SAFETY

THE OASIS Velocity SYSTEM IS A HIGH FIELD SUPER CONDUCTIVE MAGNET THAT USES CRYOGENS FOR OPERATION. THE FOLLOWING MUST BE REVIEWED BY THE ARCHITECT OR ENGINEER, AND THE APPROPRIATE DESIGN SOLUTIONS INCORPORATED INTO THE SUITE.

- A CRYOGEN VENT PIPE TO THE OUTSIDE MUST BE PROVIDED. THE VENT IS A MULTI-RESPONSIBILITY ITEM TO BE CONSTRUCTED AS FOLLOWS:
 - FUJIFILM HEALTHCARE LOGISTICS AND SERVICES WILL PROVIDE AND INSTALL THE CONNECTION TO THE MAGNET WITH FLEXIBLE VENT PIPE.
 - THE RF VENDOR WILL PROVIDE A WAVE GUIDE (A PIPE WITH FLANGES) TO MAKE THE PENETRATION THROUGH THE RF ROOM FOR ATTACHMENT TO THE VENT.
 - THE CONTRACTOR WILL CONNECT TO THE WAVE GUIDE USING NON-CONDUCTIVE FASTENERS AND TAKE THE VENT TO THE OUTSIDE.
 - REFER TO THE SIZING CALCULATIONS ON PAGES 20 AND 21 FOR SIZE REQUIREMENTS.
- FOR PROTECTION OF ALL OCCUPANTS AND IN ACCORDANCE WITH LASI* REGULATIONS, FUJIFILM HEALTHCARE REQUIRES AN EMERGENCY EXHAUST FAN IN THE SCAN ROOM. THE DUCT MUST EXTEND TO THE FINISHED CEILING. USE OF A CEILING PLENUM IS NOT ACCEPTABLE. THIS FAN SHALL BE CONTROLLED BY AN OXYGEN MONITOR AND BY A MANUAL ROOM.THE CONTRACTOR IS RESPONSIBLE FOR SUPPLYING AND INSTALLING ALL OF THE COMPONENTS OF THE OPTIONAL OXYGEN MONITOR. THE OXYGEN MONITOR MUST HAVE A BATTERY BACK-UP. THE CONTRACTOR MUST WORK WITH THE RF VENDOR TO COORDINATE THE PROPER RF ROOM PENETRATIONS. AN AIR INLET MUST ALSO BE INSTALLED TO MAINTAIN A BALANCED ROOM PRESSURE.
- FILLING THE OASIS Velocity WITH CRYOGEN (LIQUID HELIUM) IS ACCOMPLISHED USING "DEWARs" DELIVERED TO THE SITE. THESE DEWARs, BOTH FULL AND EMPTY, PRESENT A SAFETY CONCERN WHILE ON SITE. THE AMOUNT OF TIME ON SITE WILL VARY WITH LOCATION AND THE CUSTOMER MUST IDENTIFY A SECURE AND SAFE CRYOGEN STORAGE AREA. THIS MUST BE ADDRESSED DURING THE PLANNING STAGES OF THE PROJECT. A CLEAR AND LEVEL DELIVERY ROUTE (1200mm (w) X 2100 mm (h)) FROM THE STORAGE AREA TO THE SCAN ROOM MUST BE PROVIDED.
- THE OXYGEN MONITOR REFLECTED IN THESE PLANS PROVIDES AN AUDIBLE ALARM AND TWO (2) CONTACTS FOR INTERCONNECT. ONE CONTACT WILL BE USED TO ACTIVATE THE EMERGENCY EXHAUST FAN. THE SECOND CAN BE USED TO ACTIVATE OTHER ALARMS TO ENSURE APPROPRIATE PERSONNEL ARE NOTIFIED IF A LOW OXYGEN ATMOSPHERE EXISTS. ONLY THE SENSOR PORTION OF THE OXYGEN MONITOR MAY BE MOUNTED IN THE SCAN ROOM. THE CONTROL PORTION OF THE OXYGEN MONITOR MUST BE MOUNTED IN THE CONTROL ROOM OR OTHER SPACE. CHECK TOTAL LENGTH OF CABLE NEEDED BEFORE ORDERING UNIT
- THE EMERGENCY QUENCH (RAMP DOWN) BUTTONS ARE INSTALLED AS PART OF THE OASIS Velocity SYSTEM. ONE IS LOCATED IN THE CONTROL ROOM, THE OTHER IN THE SCAN ROOM (REFER TO THE SITE SPECIFIC DRAWING FOR EXACT LOCATION). ACTIVATION OF EITHER SWITCH WILL RESULT IN A CRYOGEN RELEASE (VIA THE CRYOGEN VENT PIPE) DROPPING THE MAGNETIC FIELD TO 0.2 mT IN UNDER 20 SECONDS. IF A CRYOGEN RELEASE OCCURS, THE MAGNET CAN NOT BE BROUGHT BACK UP TO FIELD WITHOUT SERVICING AND REFILLING THE SYSTEM. THE QUENCH BUTTON ONLY CAUSES THE FIELD TO DROP, IT DOES NOT REMOVE POWER FROM THE SYSTEM.
- IF CODE REQUIRES A SPRINKLER SYSTEM, THE DESIGN MUST BE COORDINATED WITH THE RF VENDOR TO ENSURE THE INTEGRITY OF THE RF SHIELD IS NOT COMPROMISED.

* LÄNDERAUSSCHUSS FÜR ARBEITSSCHUTZ UND SICHERHEITSTECHNIK

- GUIDELINES SUCH AS THOSE PUBLISHED BY FUJIFILM HEALTHCARE, CONCERNING THE PROXIMITY OF FERROUS OBJECTS TO THE MAGNET SHOULD BE OBSERVED. THE MAGNET'S FIELD IS CAPABLE OF RAPIDLY ACCELERATING UNRESTRAINED FERROUS ITEMS. THE GREATER THE MASS OF AN ITEM, THE STRONGER THE ATTRACTION CLOSE TO THE MAGNET. HUMAN STRENGTH MAY BE INSUFFICIENT TO RESTRAIN LARGER OBJECTS SUCH AS OXYGEN BOTTLES, CRASH CARTS AND PATIENT GURNEYS. SUCH ITEMS WILL BE DRAWN INTO (OR ONTO) THE MAGNET, POTENTIALLY CAUSING SEVERE INJURY OR DEATH TO PEOPLE IN THE ROOM AND DAMAGE TO THE MRI SYSTEM. SUCH OBJECTS MUST NOT BE ALLOWED INTO THE SCAN ROOM. SPECIAL NON-FERROUS EQUIPMENT SHOULD BE OBTAINED AND IDENTIFIED AS SAFE FOR USE IN THE SCAN ROOM.
- IT IS THE CUSTOMER'S RESPONSIBILITY TO DISCUSS WITH AND ORIENT THEIR CLINICAL / MAINTENANCE STAFFS AND LOCAL EMERGENCY PERSONNEL TO MAGNET SAFETY.



NOTE:
WHEN LOW O₂ LEVEL OR A POWER FAIL OCURS, ALARM ONE CONTACTS CLOSE. ALARM 1 CONTACTS ARE ONLY RATED FOR 500 mA @ 230 V.
DO NOT RUN FULL PURGE FAN AMPERAGE THROUGH O₂ SENSOR.
THE DIAGRAM ABOVE REFLECTS THE SCHEMATIC FOR AN OXYGEN MONITOR WITH (2) CONTACTS FOR INTERCONNECT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE INSTALLATION OF THE OXYGEN MONITOR AND ALARM CIRCUIT CONFORMS WITH THE MANUFACTURER'S SPECIFICATION WHICH MAY VARY FROM WHAT IS SHOWN HERE.

OASIS Velocity Safety Information for Police, Fire, Emergency Service and Cleaning/Maintenance Personnel

All Magnetic Resonance Imaging (MRI) equipment operates using a large magnet. MRI magnets are very powerful and pose a serious danger for police, firefighters and EMS*, as well as cleaning and maintenance personnel.

Warning

Obey the warning signs posted at the entry of the magnet scan room to avoid potential injury.

MRI systems pose a serious danger for personnel carrying metallic objects into the scan room. These objects can be **uncontrollably** attracted to the magnetic field. The force is stronger the closer the object is to the magnet and the larger the object.

Warning

Do not enter the scan room with metallic objects. Such objects become "missiles" that could cause serious injury.

Firefighters' equipment containing iron, such as axes, tools, oxygen bottles, fire extinguishers, ladders, and even smaller objects will be forcefully pulled into the magnet if they get too close.

Police firearms, handcuffs, and other metallic equipment may similarly become missiles by the attractive force of the MR magnet.

Large equipment, such as floor sweepers, waxers, vacuum cleaners, and pails will be drawn toward and into the magnet with such force that they

cannot be held back nor removed from the magnet. Standard tools containing iron, such as hammers, pipe, screwdrivers, knives, pliers, nails, screws, and staples, will similarly be drawn into the magnet.

Electronic equipment not specifically made for use in a MRI environment may not work properly if brought close to the magnet. This includes pacemakers or other implanted devices.

Warning

Do not enter the magnet room if you have a pacemaker or other implanted device. The implanted device may fail and cause a serious injury.

This facility has a MRI system that uses a super-conducting magnet containing liquid helium. Because it is super-conducting, the magnet is **difficult to turn off**. In some cases, the liquid helium can escape the magnet. The helium turns to gas that can cause severe burns on skin contact.

Warning

Do not enter the scan room if alarms are activated. Escaping helium can displace the air in the room, creating an asphyxiation hazard.

As an emergency or service person, you must become acquainted with the safety precautions and procedures associated with this equipment. See the facility administrator for more information.

Warning No Pacemakers

Warning No Metal Implants

Warning No Fire Extinguishers

Warning No Wheelchairs

Warning No Metallic Carts

Warning No Metallic Objects

Warning No Tools

* Emergency service

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NOTE: THE INDICATION OF "(MRI) SCAN ROOM" REFERS TO THE "RF SHIELDED ROOM"

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QUENCH VENT - SIZING

CALCULATING PIPE LENGTH AND DIAMETER:

THE CUSTOMERS ARCHITECT / ENGINEER IS RESPONSIBLE FOR UTILIZING THE FOLLOWING INFORMATION TO CALCULATE AND DESIGN THE CRYOGEN VENT LINE.

CALCULATION EXAMPLE:

REQUIREMENTS

- ALL TUBES SHOULD BE IN A CIRCLE
- THE HELIUM GAS TEMPERATURE IS ASSUMED TO BE 80K

PIPING CONFIGURATION

(MAGNET SIDE)

- THE 1m SMOOTH PIPE WITH TWO Ø 100mm SMOOTH ELBOWS
- THE 2m SMOOTH PIPE WITH A Ø 150mm SMOOTH ELBOW
- THE 1m FLEXIBLE PIPE WITH A Ø 200mm SEGMENT ELBOW (EXPOSURE TO AIR PRESSURE)

- LENGTH OF Ø 100mm SMOOTH PIPE: L(100)
L(100)=2x2+1=5m (SEE TABLE a;c)
PERCENTAGE OF THE ALLOWABLE LENGTH OF L(100):52.1% (5m/9.6m) (SEE TABLE a)
- LENGTH OF Ø 150mm SMOOTH PIPE: L(150)
L(150)=2x1+2=4m (SEE TABLE a;c)
PERCENTAGE OF THE ALLOWABLE LENGTH OF L(150):12.1% (4m/33.0m) (SEE TABLE a)
- LENGTH OF Ø 200mm SEGMENT ELBOW AND FLEXIBLE PIPE: L(200)
L(200)=6x1+1=7m (SEE TABLE a;d)
PERCENTAGE OF THE ALLOWABLE LENGTH OF L(200):35.0% (7m/20.0m) (SEE TABLE b)

THE SUM OF ALL PERCENTAGES MUST REMAIN 99.2% (52.1+12.1+35.0) < 100%. THEREFORE THE SELECTED PIPE IS ACCEPTABLE.

MAXIMUM PERMISSABLE VENT LENGTHS	
(a) SMOOTH PIPE	
DIAMETER OF PIPE	MAX. LENGTH OF PIPE
mm	m
102	9.6
127	18.8
152	33.0
178	72.0
203	100.0
229	140.0
254	230.0
(b) FLEXIBLE CONVOLUTED TUBE	
DIAMETER OF PIPE	MAX. LENGTH OF PIPE
mm	m
102	1.9
127	3.7
152	6.7
178	14.5
203	20.0

TABLE 1

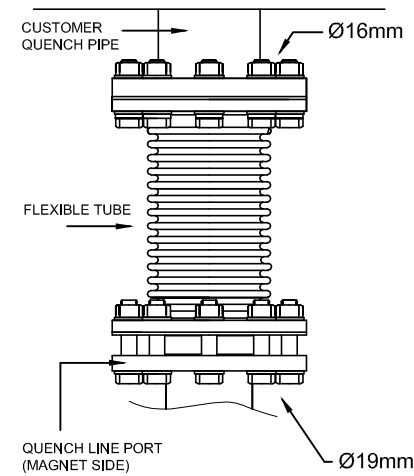
EFFECTIVE LENGTH OF BENDS

MAXIMUM PERMISSABLE VENT LENGTHS	
(c) 90° SMOOTH ELBOW	
DIAMETER OF PIPE	MAX. LENGTH OF PIPE
mm	m
102	2.0
127	2.0
152	2.0
178	2.5
203	3.0
229	3.0
254	3.0
(d) 90° SEGMENT ELBOW	
DIAMETER OF PIPE	MAX. LENGTH OF PIPE
mm	m
102	3.0
127	3.0
152	3.0
178	5.0
203	6.0
229	6.0

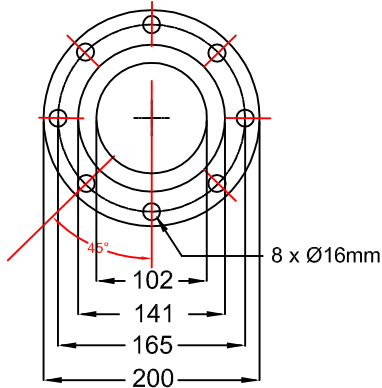
TABLE 2

MAXIMUM PIPE LENGTHS

NOTE:
INTEROPLATE FOR VALUES BETWEEN 0°- 45° AND 45°- 90°.
DATA ONLY TO BE USED FOR BENDS WHERE THE RADIUS TO DIAMETER RATIO IS IN THE RANGE OF 1.5 TO 5.0, EXCEPT FOR RIGHT ANGLE MITERED JOINTS.
VIBRATION DECOUPLING TUBE (DELIVERED AS PARTS OF THE MAGNET) HAVE BEEN ACCOUNTED FOR IN THESE CALCULATIONS.
IN STRAIGHT PIPES >10m LENGTH, COMPRESSION COMPESATOR IS REQUIRED EVERY 10m.

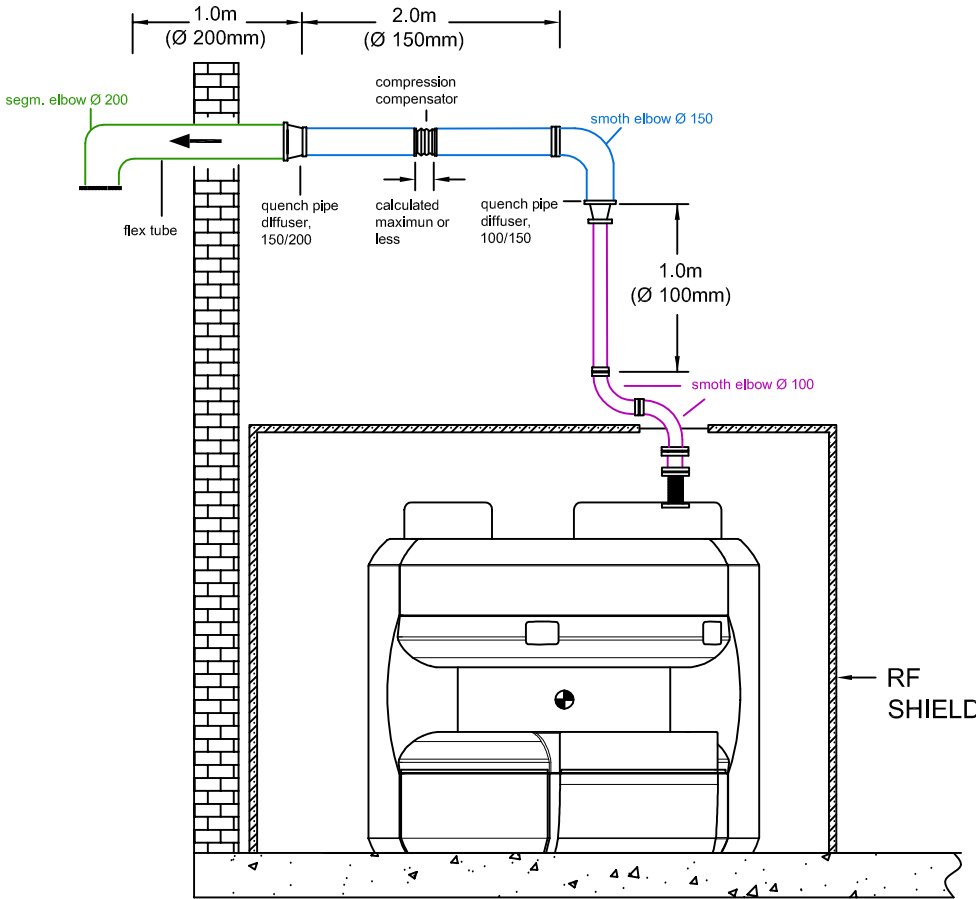


CONNECTION OF THE QUENCH LINE

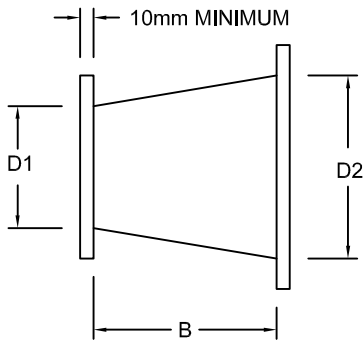


*DIMENSIONS SPECIFIED IN MILLIMETERS
**DIAMETER VARIES DEPENDING ON QUENCH LINE LENGTH

CRYOGEN VENT FLANGE



EXAMPLE OF QUENCH PIPE ROUTING



QUENCH PIPE DIFFUSER

A DIFFUSER IS USED WHENEVER AN INCREASE IN PIPE DIAMETER IS REQUIRED.
DESIGN CRITERIA: DISTANCE "B" MUST BE GREATER THAN 2.5 x (D2 - D1)

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NOTE: THE INDICATION OF "(MRI) SCAN ROOM" REFERS TO THE "RF SHIELDED ROOM"

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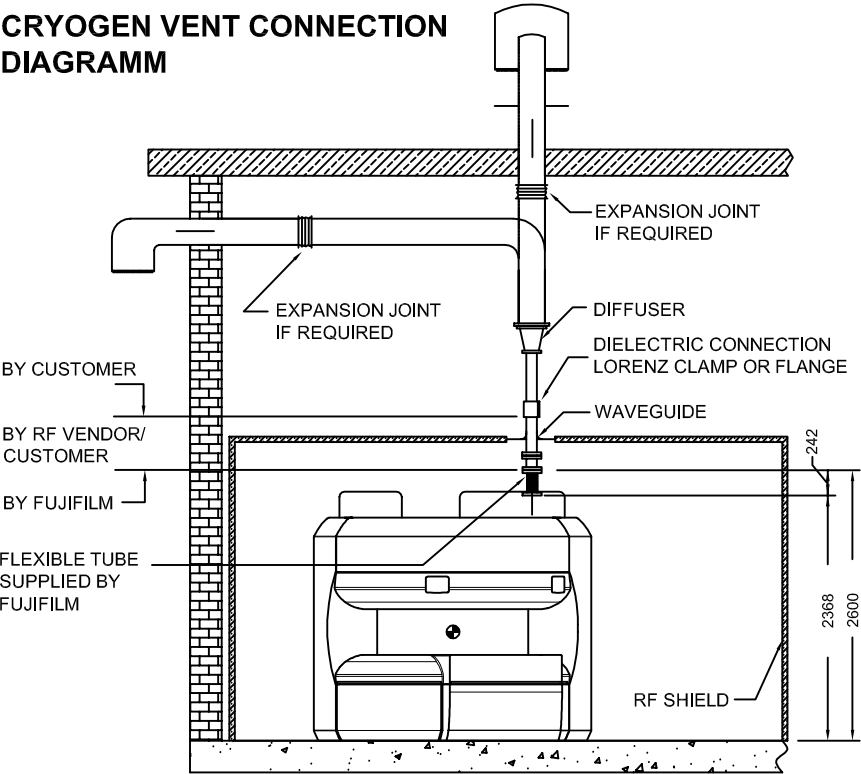
QUENCH VENT - NOTES

THE VENT PIPE IS CRITICAL TO THE SAFE OPERATION OF THE SYSTEM. HELIUM GAS, WHICH IS EXHAUSTED IN THE EVENT OF A QUENCH IS EXTREMELY COLD AND DISPLACES OXYGEN. THE POSSIBILITY OF ASPHYXIATION EXISTS IF IT IS NOT PROPERLY VENTED. CONSIDERATION MUST BE GIVEN NOT ONLY TO THE DESIGN OF THE VENT PIPE ITSELF, BUT ALSO THE LOCATION OF ITS END POINT. **THE VENT PIPE MUST BE DESIGNED BY THE CUSTOMERS ARCHITECT / ENGINEER** IN ACCORDANCE WITH THE INFORMATION PROVIDED IN THIS SECTION OF THE OASIS Velocity STANDARD DETAILS.

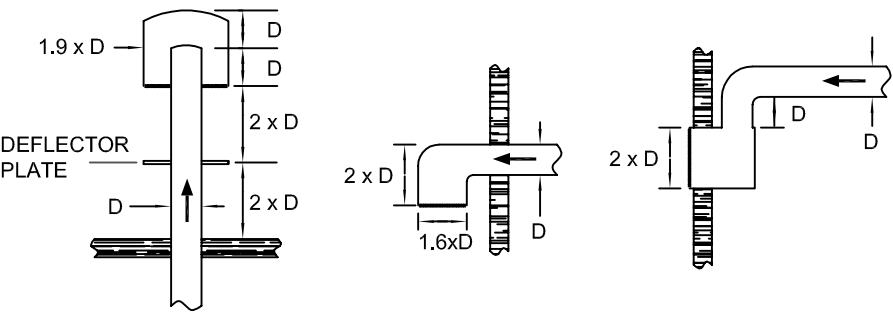
- THE QUENCH VENT MUST BE CONSTRUCTED OF NON-MAGNETIC STAINLESS STEEL ONLY. THE MINIMUM WALL THICKNESS FOR STRAIGHT TUBE IS 0,7mm. ACCEPTABLE GRADES ARE: AISI 304, 309, 316 AND 321 OR THEIR EN EQUIVALENTS. (EN1.1301, EN1.4301, EN1.4541) NO OTHER MATERIALS ARE ALLOWED DUE TO EXTREME TEMPERATURES.
- DETERMINING THE ROUTING OF THE VENT TO THE OUTSIDE IS THE RESPONSIBILITY OF THE ARCHITECT/CONTRACTOR. THE LENGTH OF THE VENT RUN TO THE OUTSIDE WILL DICTATE ITS REQUIRED DIAMETER. REFER TO THE FORMULA FOR DETERMINING THE EFFECTIVE LENGTH OF THE VENT AND DIAMETER (PG 19 - PG 23).
- THE CRYOSTAT CONTAINS 1140 LITERS OF LIQUID HELIUM WHEN FILLED. IN THE EVENT OF A QUENCH, APPROXIMATELY 863 CUBIC METERS OF HELIUM GAS WILL BE EXHAUSTED THROUGH THE VENT PIPE OVER A PERIOD OF 20-30 MINUTES.THE HELIUM GAS RELEASED IS AN ASPHYXIAN IN ADDITION TO BEING EXTREMELY COLD.
- EXPANSION TO A LARGER DIAMETER PIPE REQUIRES THE USE OF A DIFFUSER. PIPE DIAMETER MAY NOT BE REDUCED IN THE DOWN- STREAM DIRECTION.
- THE VENT PIPE DESIGN CALCULATIONS ARE FORMULATED TO ALLOW A MAXIMUM INTERNAL PRESSURE OF 0.1 BAR ABOVE ATMOSPHERE, HOWEVER, THE MAXIMUM DESIGN PRESSURE NEEDS TO BE 0.45 BAR.
- THERMAL CONTRACTION OF APPROXIMATELY 5,2mm PER m MAY OCCUR. A STAINLESS STEEL BELLOW MUST BE FITTED AT A MINIMUM OF EVERY 9,252m TO ALLOW FOR THIS. THE TOTAL LENGTH OF ALL BELLOWS MAY NOT EXCEED 2% OF THE MAXIMUM ALLOWED PIPE LENGTH. THE MATERIAL USED TO SUSPEND THE PIPE MUST BE FLEXIBLE ENOUGH TO ACCOMMODATE THIS MOVEMENT. ADDITIONALLY, THROUGH WALL PENETRATIONS SHOULD NOT BE HARD ATTACHED TO THE WALL.
- ALL BENDS MUST HAVE A CENTERLINE RADIUS TO INTERNAL DIAMETER RATIO BETWEEN 1.5 AND 5.0. ALL BENDS MUST BE SMOOTH WALLED. IF A SMOOTH WALL BEND IS NOT POSSIBLE, ELBOWS MAY BE FABRICATED FROM STRAIGHT PIPE PROVIDED THAT A MINIMUM OF 4 SECTIONS ARE USED FOR A 90 DEGREE ELBOW.
- JOINTS MAY ONLY BE MADE BY WELDING OR FLANGES. FLANGES MUST BE A MINIMUM OF 10mm THICK AND SHALL BE CONTINUOUSLY WELDED ON THE INSIDE WITH A MINIMUM 50% STITCH WELD ON THE OUTSIDE. ROTARY FLANGES ARE PERMITTED. GASKET MATERIAL MUST BE UHMW-PE, PTFE OR FIBER.
- THE VENT PIPE IS TO BE INSULATED ITS FULL LENGTH. MINERAL FIBER INSULATION NOT LESS THAN 25,4mm THICK AND COVERED WITH A VAPOR BARRIER IS RECOMMENDED. INSULATION ON OUTDOOR PORTIONS OF THE VENT PIPE MUST BE WEATHER-PROOF. WITHIN THE SCAN ROOM, AN ADDITIONAL 25,4mm THICK LAYER OF CLOSED CELL FOAM INSULATION (ARMAFLEX CLASS "O" OR EQUAL) IS DESIRED.
- THE TERMINATION OF THE VENT MUST BE DESIGNED TO PREVENT THE INTRUSION OF WEATHER (RAIN, SNOW OR DRIFTING SNOW), ANIMALS OR OTHER FOREIGN OBJECTS. IF MESH IS USED IT SHOULD BE 13,00mm WITH 1,20mm ROUND WIRE. THE **GROSS AREA** COVERED BY MESH MUST BE AT LEAST 2.5 TIMES THE CROSS SECTION OF THE VENT PIPE. FLAT SHEET STOCK WITH 10,00mm ROUND OR SQUARE HOLES MAY ALSO BE USE AS MESH, HOWEVER DUE TO A GREATER FLOW RESISTANCE, THE **TOTAL FREE FLOW AREA** OF MESH MUST BE 2.5 TIMES THE CROSS SECTION OF THE VENT.

- A SIDE WALL CRYOGEN VENT OUTLET MUST BE MOUNTED NO LESS THAN 5,15m ABOVE A SIDEWALK. ADDITIONALLY, OPERABLE WINDOWS OR AIR INLETS MUST BE RESTRICTED FROM AN AREA 3,00m TO THE SIDES OR BELOW AND 6,00m ABOVE A SIDE WALL EXIT OF THE VENT PIPE. WHERE A VERTICAL EXHAUST EXITS THROUGH A FLAT ROOF, ACCESS SHOULD BE RESTRICTED OR WARNING SIGNS POSTED IN A 3,00m RADIUS AROUND THE VENT. THE VENT PIPE INTERNAL TO THE BUILDING SHOULD ALSO BE MARKED WITH WARNINGS STATING ITS FUNCTION. IT IS THE ARCHITECT/CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE OUTLET AND WARNING SIGNS MEET ALL APPLICABLE CODES.

CRYOGEN VENT CONNECTION DIAGRAMM

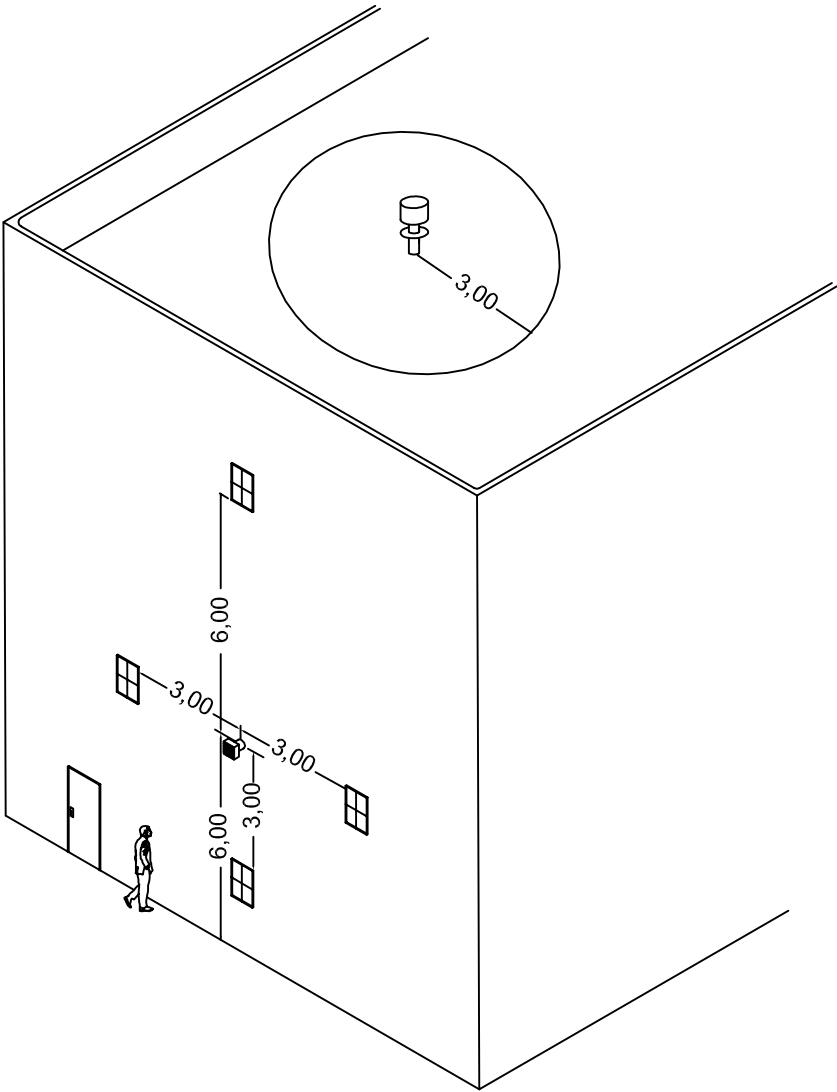


TYPICAL CRYOGEN VENT OUTLETS



- NOTE:**
- ULTRA COLD GAS FROM THE VENT MAY CAUSE THERMAL SHOCK AND DAMAGE TO BUILDING MATERIALS CLOSE TO THE EXIT
 - EPDM* OR OTHER MEMBRANE ROOFING MATERIALS SHOULD BE PROTECTED FROM VENTED GAS
 - DIMENSIONS SHOWN ARE MINIMUMS

*ETHYLENE-PROPYLENE-DIENE-MONOMER



RESTRICTED AREA SURROUNDING CRYOGEN VENT

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GENERAL PROPOSAL INSTALLATION DRAWINGS

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RIGGING AND DELIVERY

DURING THE INITIAL PLANNING OF THE OASIS Velocity SUITE, A SYSTEM DELIVERY PATH MUST BE IDENTIFIED. THE DESIGN TEAM SHOULD REVIEW THE INFORMATION PRESENTED ON THIS PAGE TO ENSURE A STAGING AREA AND A CLEAR DELIVERY PATH IS AVAILABLE. WHILE THE MAGNET IS THE MAJOR CONCERN, CLEARANCES MUST ALSO BE ASSURED FOR THE DELIVERY OF ANCILLARY SYSTEM COMPONENTS, SERVICE / INSTALLATION TOOLS AND THE ONGOING REQUIREMENT OF HELIUM DEWARs. FUJIFILM HEALTHCARE LOGISTICS AND SERVICES PLANNING DEPARTMENT WILL ASSIST IN IDENTIFYING THE MOST APPROPRIATE DELIVERY PATH.

THE DELIVERY PROCESS IS AS FOLLOWS:

- FUJIFILM HEALTHCARE LOGISTICS AND SERVICES PLANNING DEPARTMENT AND THE DESIGN TEAM WILL IDENTIFY A STAGING AREA AND A DELIVERY PATH.
- AN INITIAL DELIVERY DATE WILL BE SCHEDULED USING INPUT FROM THE DESIGN TEAM. (CONSTRUCTION SCHEDULE)
- TIMELY VISITS WILL BE MADE BY THE FUJIFILM HEALTHCARE LOGISTICS AND SERVICES FIELD SERVICE ENGINEER (FSE) CONFIRMING THE SITE PROGRESS.
- THE CONTRACTOR AND LPC* WILL REVIEW THE OASIS Velocity PRE-DELIVERY CHECKLIST AGAINST THE ACTUAL SITE STATUS. SITE PLANNING IS TO BE CONTACTED WITH ANY CONCERNS THAT MAY AFFECT THE DELIVERY.
- THE DAYS PRIOR TO THE SCHEDULED DELIVERY, THE CONTRACTOR WILL SUB-MIT A COMPLETED CHECKLIST TO FUJIFILM HEALTHCARE LOGISTICS AND SERVICES PLANNING DEPARTMENT NOTING THE STATUS OF THE SITE.
 - IF COMPLETION OF THE CHECKLIST REQUIREMENTS CANNOT BE GUARANTEED BY THE CONTRACTOR, THE DELIVERY WILL BE RESCHEDULED.
 - IF THE CONTRACTOR CAN VERIFY THAT THE SITE IS ON SCHEDULE AND THAT ALL CHECKLIST REQUIREMENTS WILL BE COMPLETE, THE DELIVERY DATE WILL BE SET WITHIN 10 DAYS OF THE SUBMITTAL.
- SITE PLANNING WILL CONFIRM ADMINISTRATIVE APPROVAL.
- SITE PLANNING WILL CO-ORDINATE SCHEDULING OF THE SYSTEM DELIVERY WITH THE APPROPRIATE PARTIES, ADJUSTING THE DELIVERY DATE TO MEET EVERYONE'S SCHEDULE.

* LOCAL PROJECT COORDINATOR

RESPONSIBILITIES:

FUJIFILM HEALTHCARE RESPONSIBILITIES:

- ASSIST THE CUSTOMER / CONTRACTOR IN IDENTIFYING A DELIVERY STAGING AREA (TRUCK PARKING, CRATE UNPACKING).
- ASSIST THE CUSTOMER / CONTRACTOR IN IDENTIFYING A DELIVERY PATH FROM THE STAGING AREA TO THE SUITE.
- ASSIST THE CUSTOMER / CONTRACTOR IN LOCATING AN ADEQUATE / ACCESSIBLE STORAGE SPACE (IF REQUIRED)
- COORDINATE THE DELIVERY DATE WITH THE CUSTOMER / CONTRACTOR AND APPROPRIATE PARTIES.
- INSPECT AND APPROVE THE SITE PRIOR TO DELIVERY TO CONFIRM THE ADEQUATE ACCESS IS AVAILABLE.
- INSTALL THE OASIS Velocity SYSTEM.

CUSTOMER / CONTRACTOR / RIGGER RESPONSIBILITIES:

- ARRANGE WITH FUJIFILM HEALTHCARE LOGISTIOCS AND SERVICES PLANNING DEPARTMENT FOR DELIVERY OF THE CHILLER SYSTEM PRIOR TO SYSTEM DELIVERY
- HAVE THE CHILLER SYSTEM INSTALLED AND TESTED PRIOR TO DELIVERY OF THE SYSTEM
- PROVIDE AN OBSTRUCTION FREE DELIVERY PATH MEETING THE DELIVERY REQUIREMENTS
- PROVIDE AN OBSTRUCTION FREE STAGING AREA
- HAVE A FACILITY REPRESENTATIVE AVAILABLE AT THE TIME OF DELIVERY TO SIGN SHIPPING DOCUMENTS
- SECURE INSURANCE COVERAGE FOR THE SYSTEM, EFFECTIVE UPON DELIVERY
- PROVIDE AN ADEQUATE / ACCESSIBLE STORAGE AREA WITHIN THE FACILITY, IF REQUIRED

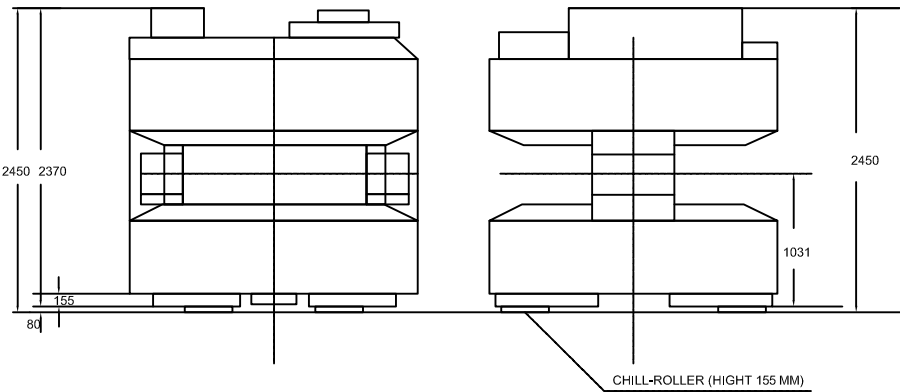
- ARRANGE FOR THE DISPOSAL OF ALL PACKING & CRATING MATERIALS (30 m³ DUMPSTER SUGGESTED)
- TAKE THE NECESSARY PRECAUTIONS TO PROTECT THE FACILITY AND EQUIPMENT.
- IDENTIFY AND PROVIDE NECESSARY EQUIPMENT FOR THE DELIVERY (I.E. CRANE, FORKLIFT, MANPOWER, TOOLS)
- UNLOAD AND UNCRATE ALL OF THE EQUIPMENT AND PLACE IT IN THE SUITE.
- SET MAGNET AND ANCILLARY EQUIPMENT PER THE FUJIFILM HEALTHCARE LOGISTICS AND SERVICES PLANNING DEPARTMENT SITE PLAN.

NOTE:
SITE PLANNING WILL NOT CONFIRM A SCHEDULED DELIVERY DATE WITHOUT

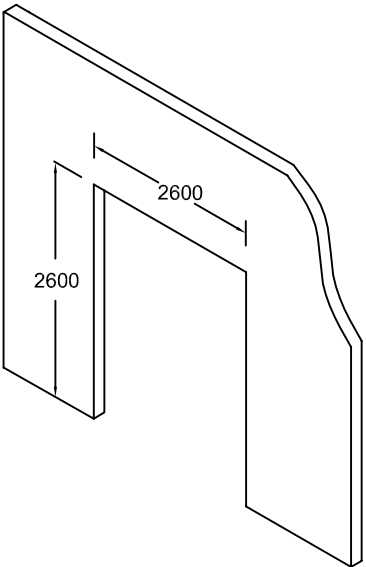
- A SUBMITTED PRE-DELIVERY CHECKLIST
- ADMINISTRATIVE APPROVAL

MATERIALS NEEDED FOR DELIVERY (POVIDE BY RIGGER)

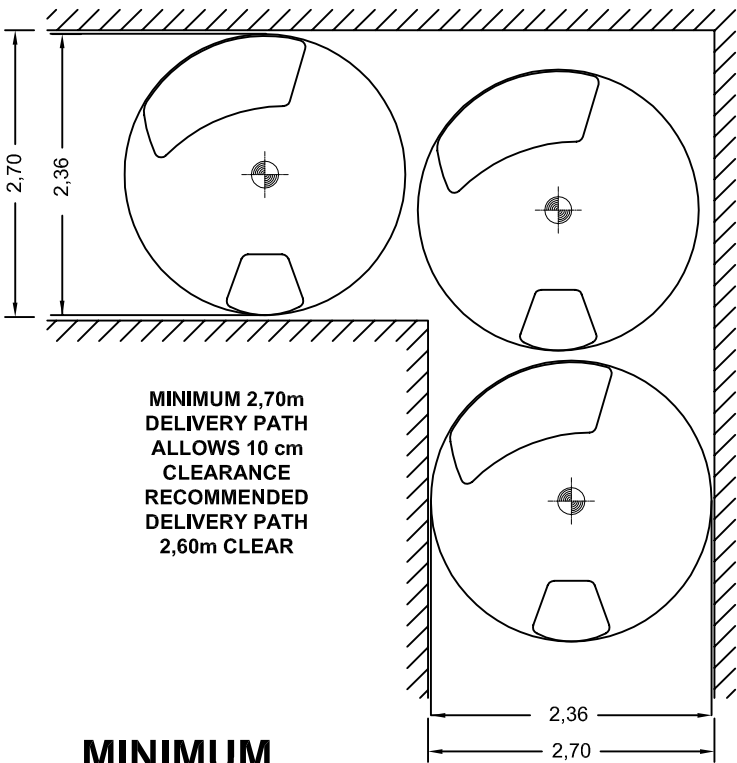
A CRANE (SIZE BY THE RIGGER) FOR UNLOADING THE MAGNET FROM THE TRUCK, ROLLERS OR AIR CUSHIONS TO MOVE THE MAGNET INTO PLACE, FORKLIFT (SIZE BY THE RIGGER) TO UNLOAD MRI COMPONENTS, JACKS, PLYWOOD AND/OR STEEL PLATES AS NEEDED TO PROTECT EXISTING FLOORING, CROWBARS TO UNCRATE MRI COMPONENTS. THE RIGGER WILL PROVIDE ANY ADDITIONAL EQUIPMENT (SUCH AS CRANE MAT AND ADDITIONAL TOOLS) AS NEEDED.



GANTRY DIMENSIONS



DELIVERY ACCESS OPENING



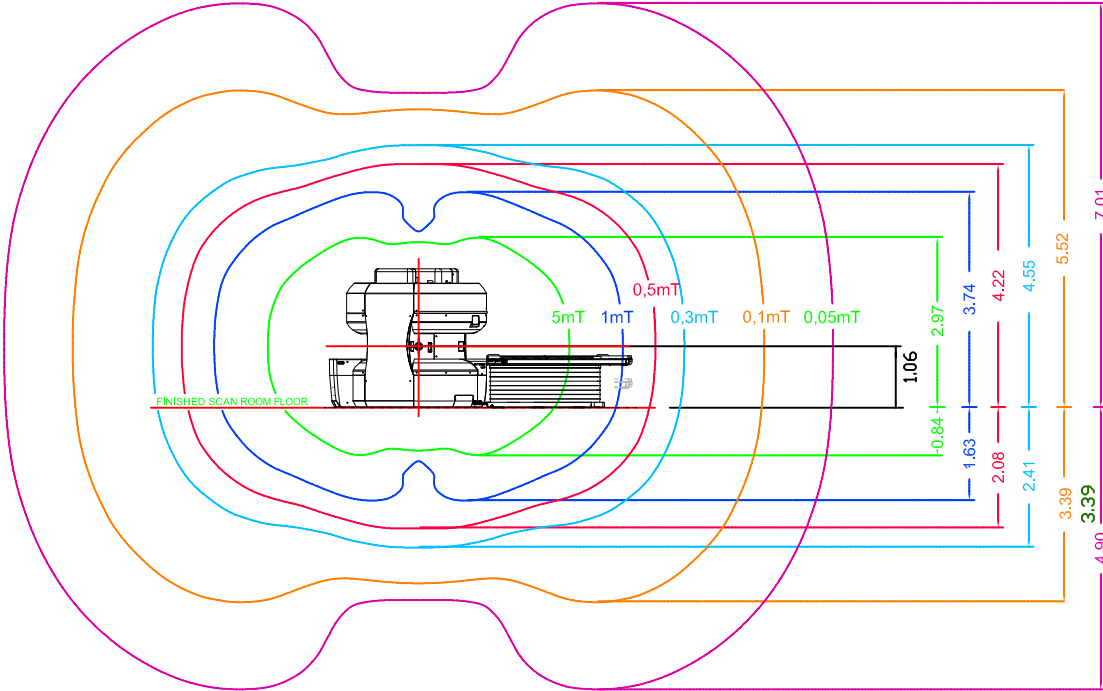
MINIMUM DELIVERY PATH

NOTE : ALL DRAWINGS, ILLUSTRATIONS AND SKETCHES ARE SHOWN DIMENSIONLESS
NOTE: THE INDICATION OF "(MRI)" SCAN ROOM" REFERS TO THE "RF SHIELDED ROOM"

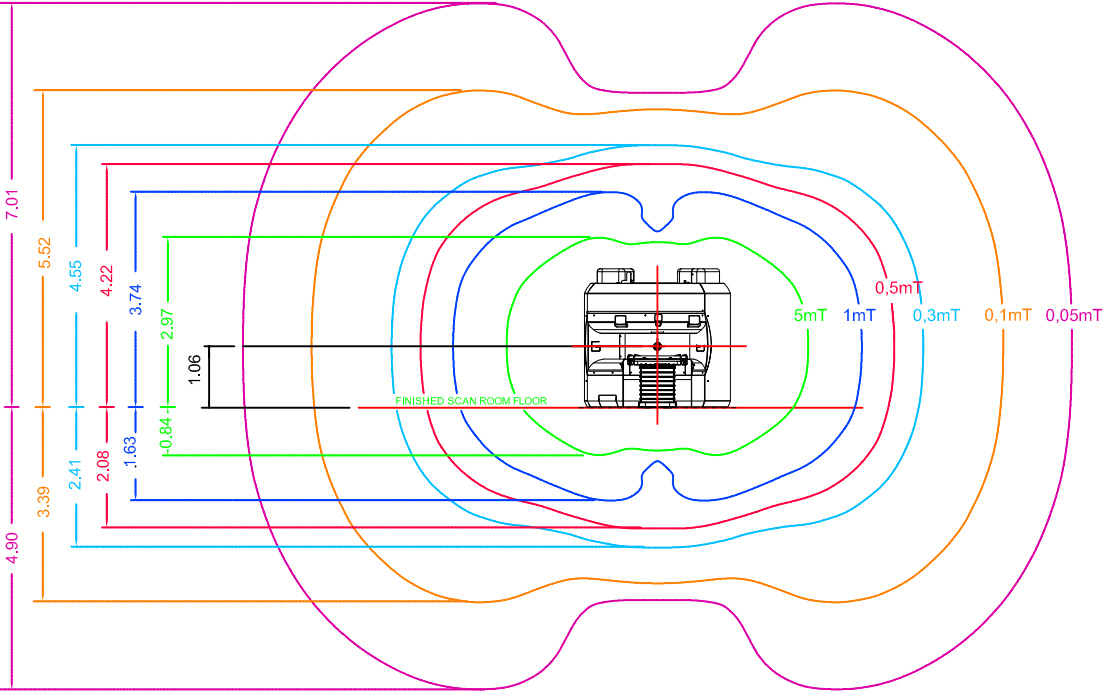
OASIS Velocity - Rigging & Delivery							
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02	cover, pg. 08, 16	2023-02-09	ss/sb				
01	cover, pg.14, 18	2022-10-04	ss/sb				
00	preliminary release	2021-12-06	ss/sb				
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TESLA FIELDS

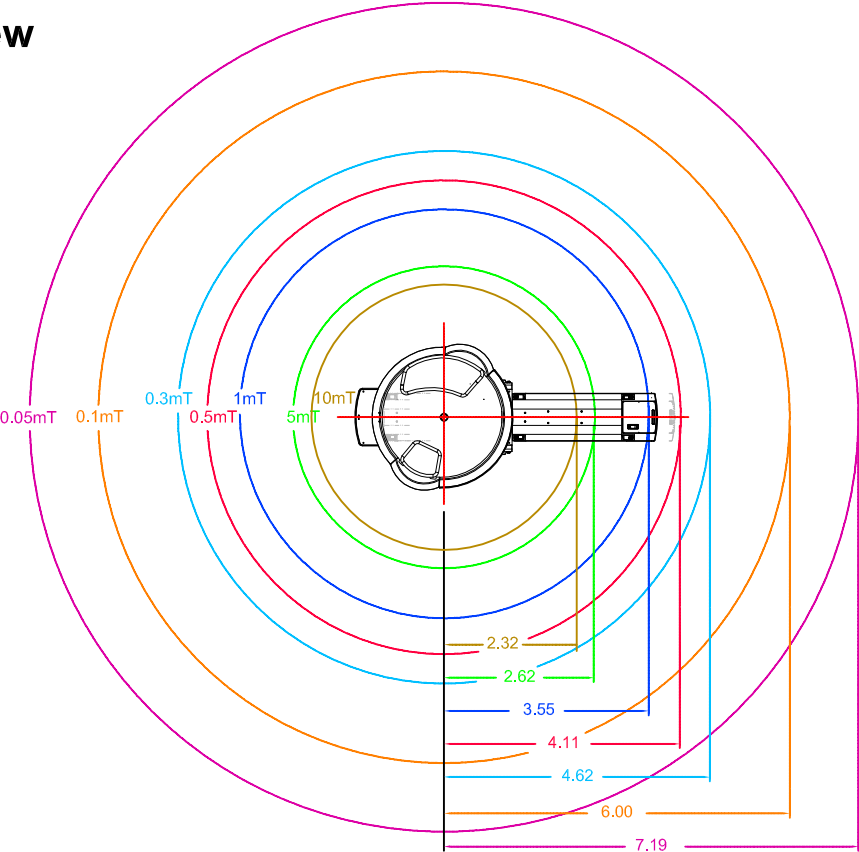
side view



front view



top view

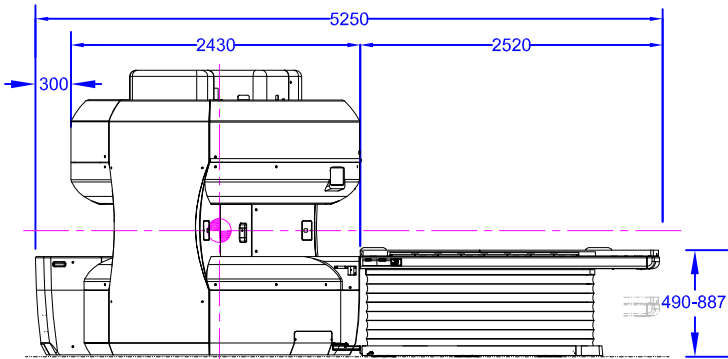


100G = 10 mT
50G = 5 mT
10G = 1 mT
5G = 0,5 mT
3G = 0,1 mT
0,5G = 0,05 mT

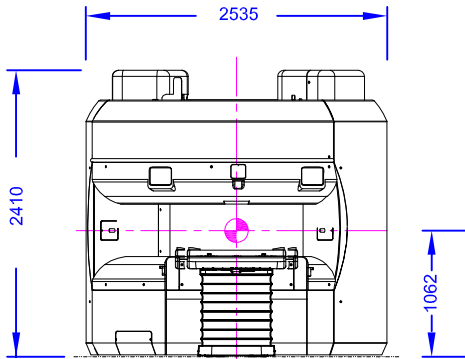
NOTE : ALL DRAWINGS, ILLUSTRATIONS AND SKETCHES ARE SHOWN DIMENSIONLESS
NOTE: THE INDICATION OF "(MRI) SCAN ROOM" REFERS TO THE "RF SHIELDED ROOM"

OASIS Velocity - Tesla fields					FUJIFILM Value from Innovation
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GENERAL PROPOSAL INSTALLATION DRAWINGS					23

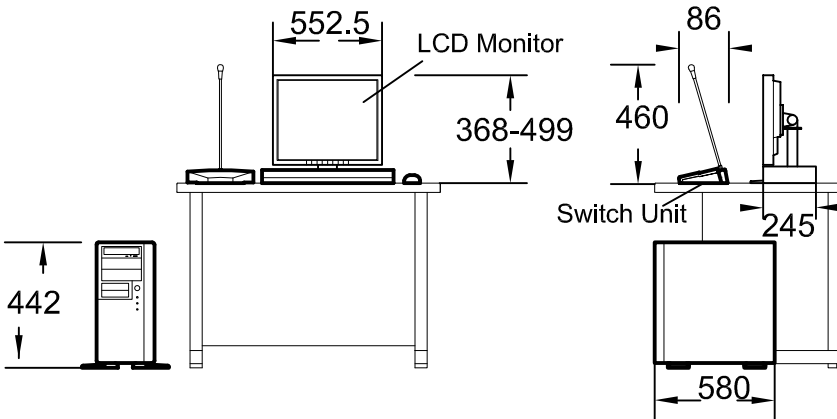
SYSTEM COMPONENTS (CONTROLL ROOM / SCAN ROOM)



SIDE VIEW

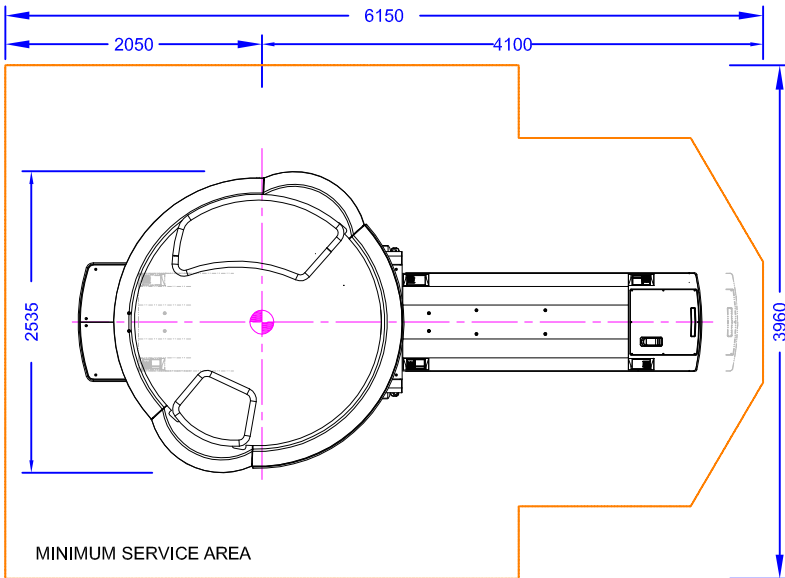


FRONT VIEW

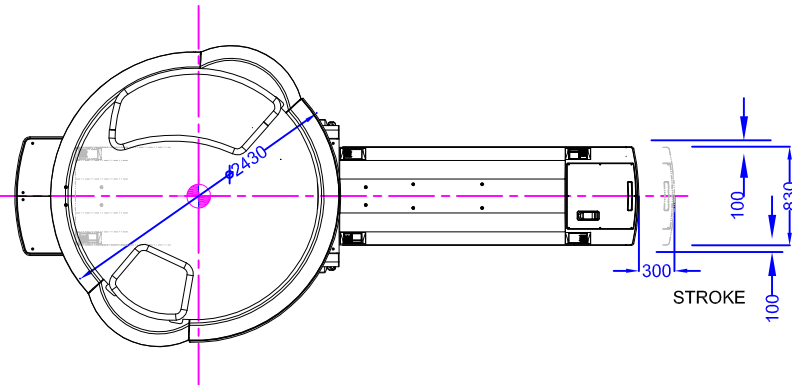


FRONT VIEW

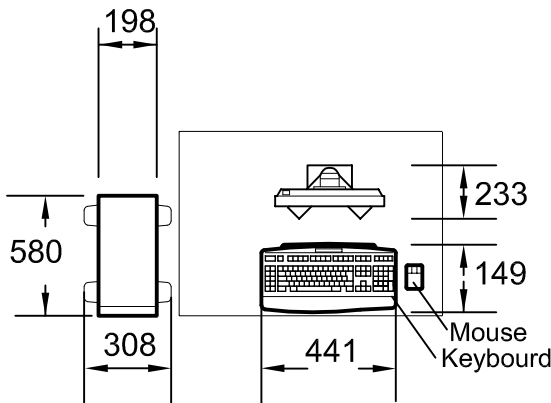
SIDE VIEW



TOP VIEW



TOP VIEW



TOP VIEW

CONTROLL ROOM
OPERATOR CONSOLE

MULTIPLE CABLE CONNECTIONS COMPONENTS ARE SEPARATE AND MAY BE PLACED ON CASEWORK/COUNTERTOP SUPPLIED AND INSTALLED BY CUSTOMER.

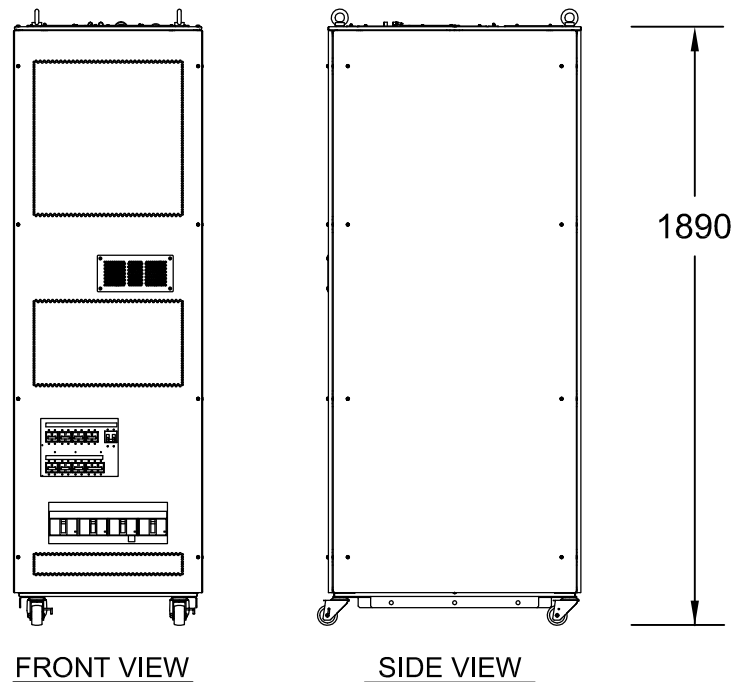
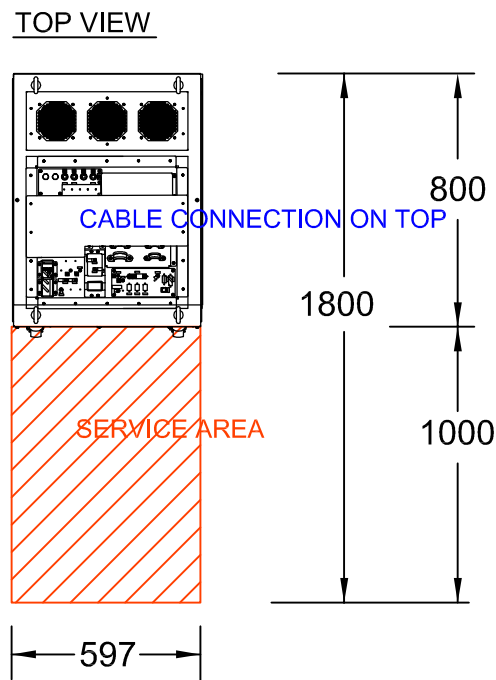
SCAN ROOM
OASIS Velocity GANTRY AND PATIENT TABLE

MULTIPLE CABLE CONNECTIONS AT REAR OF GANTRY.
SERVICE AREA MUST BE MAINTAINED WHEN SITING.

NOTE : ALL DRAWINGS, ILLUSTRATIONS AND SKETCHES ARE SHOWN DIMENSIONLESS
NOTE: THE INDICATION OF "(MRI)" SCAN ROOM" REFERS TO THE "RF SHIELDED ROOM"

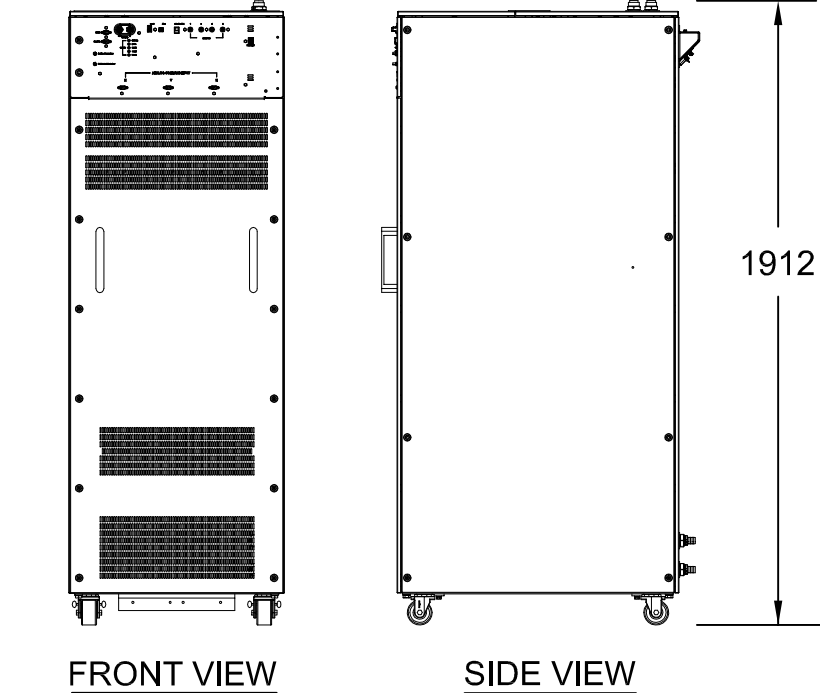
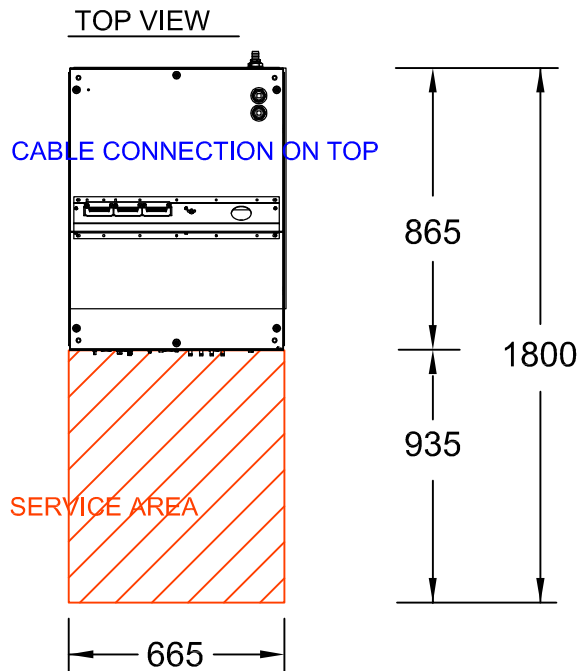
OASIS Velocity - System components					FUJIFILM Value from Innovation
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SYSTEM COMPONENTS (CONT.)



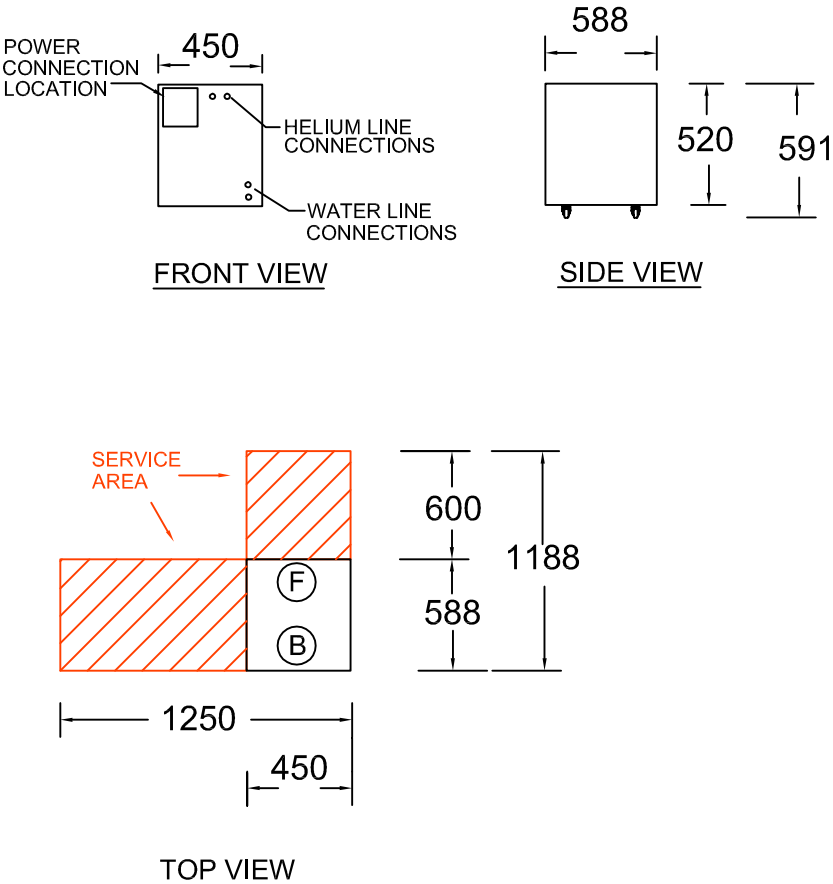
IRCP CABINET

MULTIPLE CABLE CONNECTIONS AND MAIN POWER CONNECTION WILL LIMIT CABINET MOVEMENT FOR SERVICING. SERVICE AREA MUST BE MAINTAINED WHEN SITING.



GRADIENT AMPLIFIER CABINET

MULTIPLE CABLE CONNECTIONS, GRADIENT CABLE CONNECTIONS, AND WATER HOSE CONNECTIONS WILL LIMIT CABINET MOVEMENT FOR SERVICING. SERVICE AREA MUST BE MAINTAINED WHEN SITING.



HELIUM COMPRESSOR UNIT

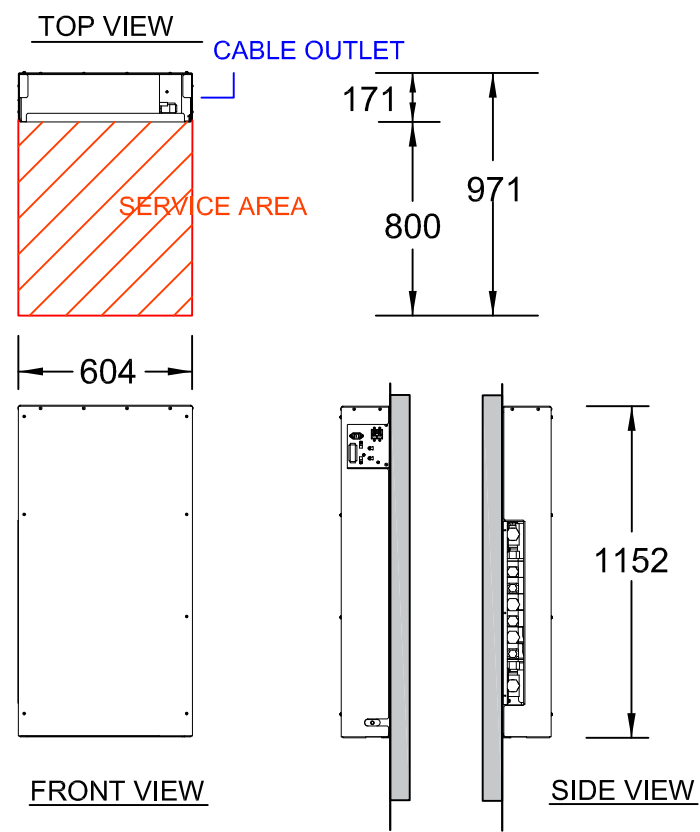
MULTIPLE CABLE CONNECTIONS , HELIUM AND PLUMBING LINES RESTRICT ALLOWABLE MOVEMENT FOR THIS UNIT. SERVICE AREA MUST BE MAINTAINED WHEN SITING.

ALL MEASUREMENTS ON THIS PAGE ARE SPECIFY IN mm

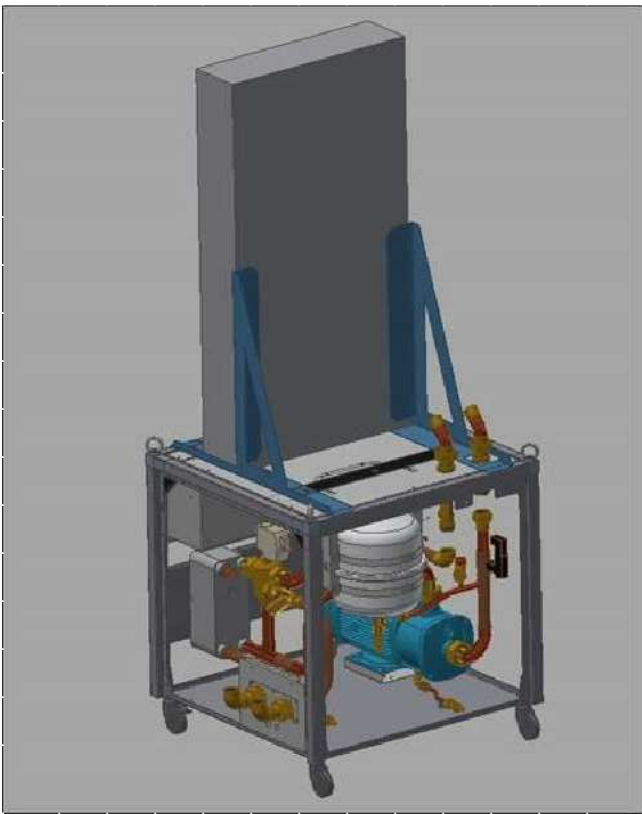
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NOTE: THE INDICATION OF "(MRI) SCAN ROOM" REFERS TO THE "RF SHIELDED ROOM"

OASIS Velocity - System components (cont.)					<div>FUJIFILM Healthcare Logistics and Services Branch office of FUJIFILM Healthcare Europe Holding AG Europark Fichtenhain A 12 47807 Krefeld Tel.: +49 2151 6435 480/-486</div> <div>FUJIFILM Value from Innovation</div>
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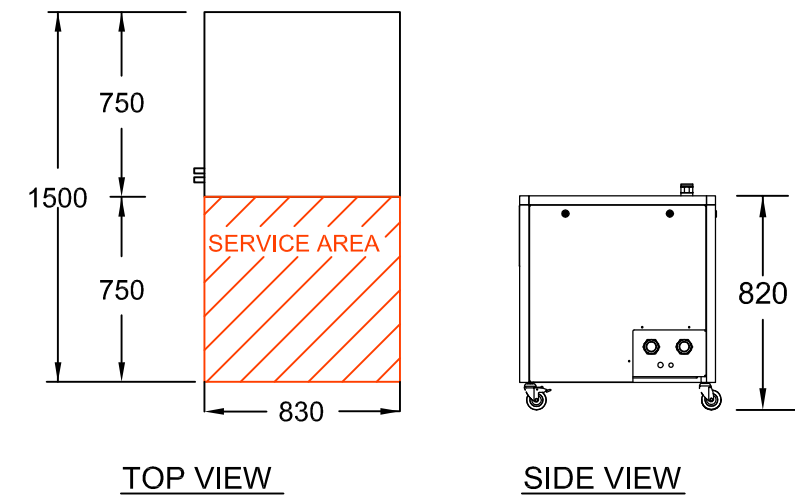
SYSTEM COMPONENTS (CONT.)



SENSE UNIT (WALL INSTALLATION ON TOP OF HEAT EXCHANGER)
MULTIPLE CABLE CONNECTIONS , HELIUM AND PLUMBING LINES RESTRICT ALLOWABLE MOVEMENT FOR THIS UNIT.
SERVICE AREA MUST BE MAINTAINED WHEN SITING.



SENSE UNIT & HEAT EXCHANGER
INSTALLTION OF THE SENSE UNIT ON TOP OF THE HEAT EXCHANGER WITH MOUNTING BRACKETS.



HEAT EXCHANGER
MULTIPLE CABLE CONNECTIONS , HELIUM AND PLUMBING LINES RESTRICT ALLOWABLE MOVEMENT FOR THIS UNIT.
SERVICE AREA MUST BE MAINTAINED WHEN SITING.

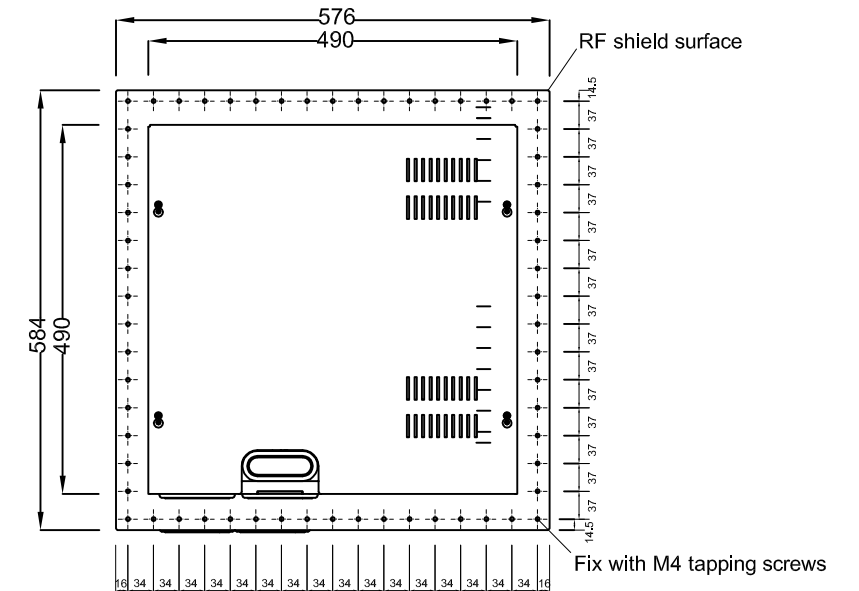
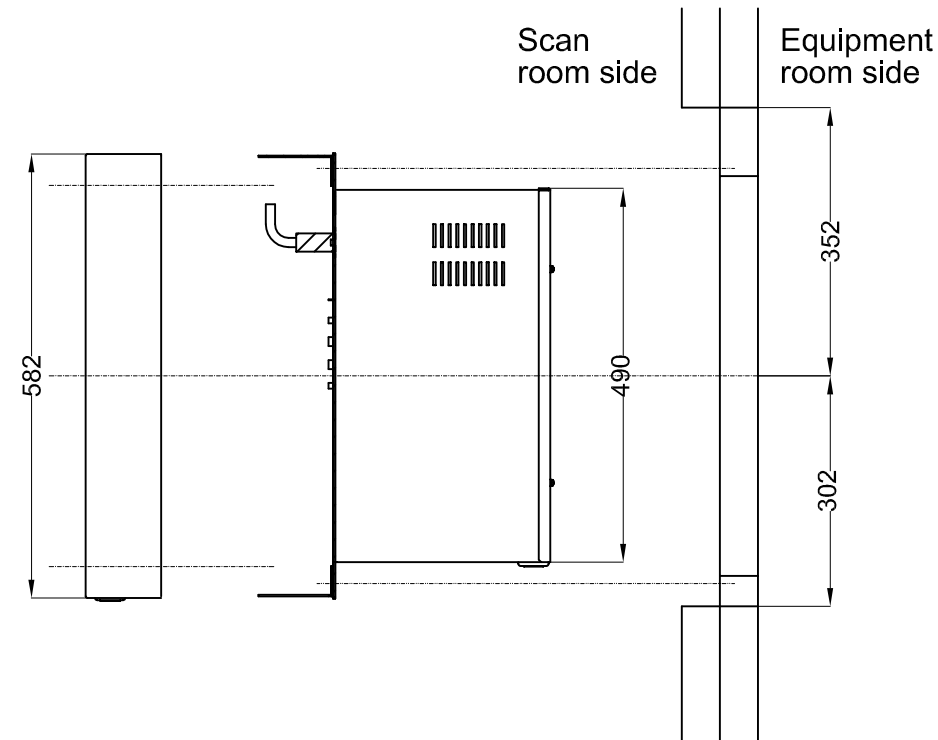
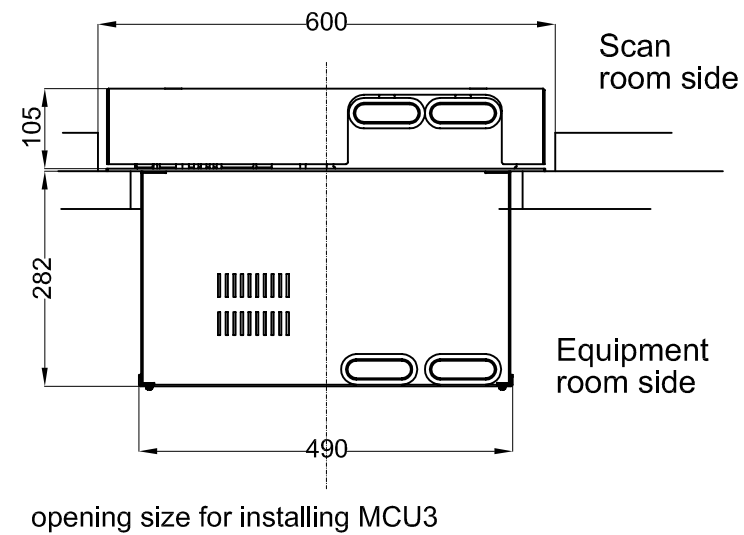
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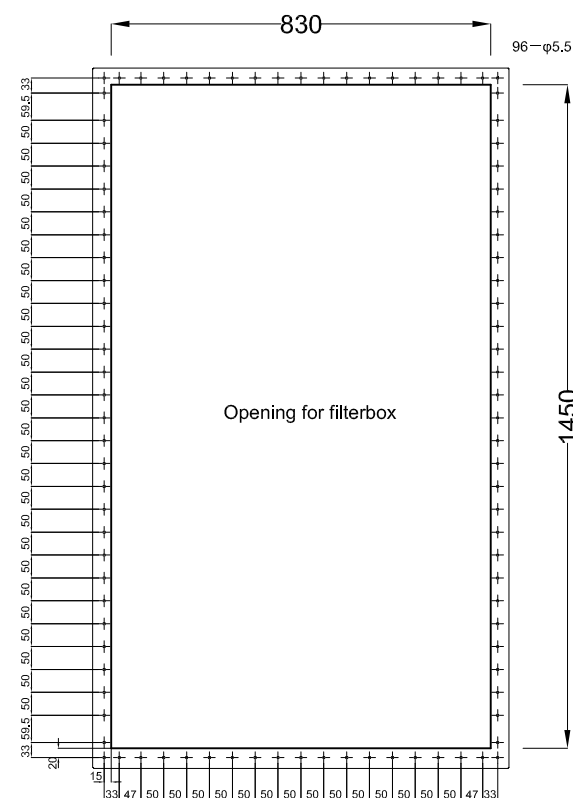
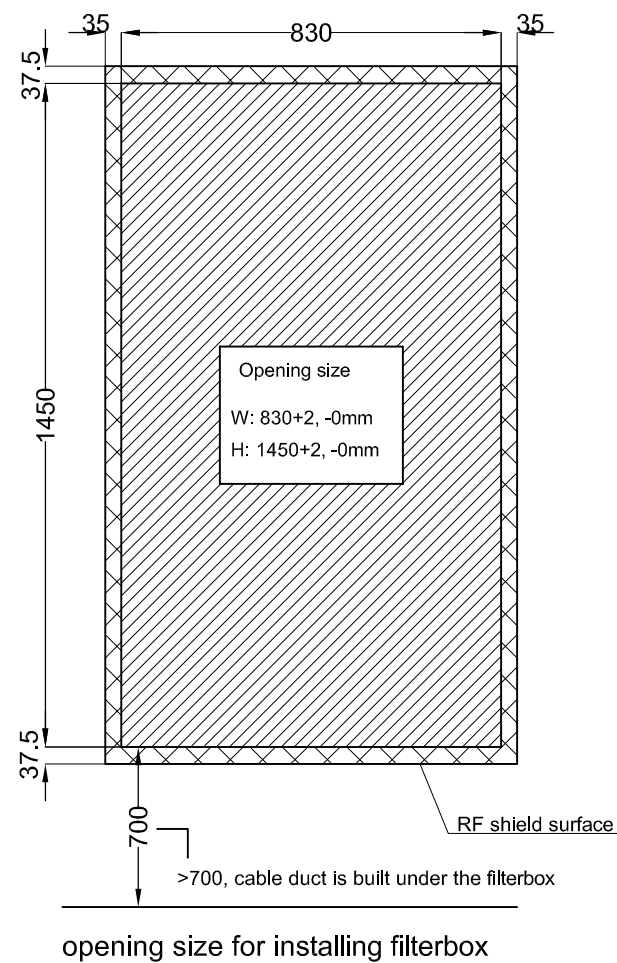
OASIS Velocity - System components (cont.)					<div>FUJIFILM Healthcare Logistics and Services Branch office of FUJIFILM Healthcare Europe Holding AG Europark Fichtenhain A 12 47807 Krefeld Tel.: +49 2151 6435 480/-486</div> <div>FUJIFILM Value from Innovation</div>
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SYSTEM COMPONENTS (CONT.)

MCU3



FILTERBOX



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OASIS Velocity - System components (cont.)				
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