

LAUNDRY MONITORING SYSTEM 洗衣房监测系统

Model ~ LIM-64S & Model ~ LIM-23C-55

FEATURES: 特点

- AUTOMATIC CONVEYOR FOR LAUNDRY AUTOMATICALLY SEPARATES CLOTHES INTO "CLEAN" & "CONTAMINATED" BASKETS
洗衣房自动传送带自动将衣物分到“干净”“受污染”篮子里
- DUAL CONVEYORS
双传送带
- BUILT-IN COMPUTER, DATA ARCHIVE & RETRIEVAL
内置电脑，数据存储和检索
- EACH DETECTOR HAS OWN ELECTRONICS FOR GREATEST SENSITIVITY
每个探测器自带电子学以达到最佳灵敏度
- CONTAMINATION TRIGGER POINT IS CONTINUOUSLY ADJUSTABLE
污染报警点可连续调整
- MANUAL OVERRIDE
手动操控
- USB /ETHERNET PORTS
接口
- COLOR LCD MONITOR
彩色 LCD 显示器
- GRAPHICS PRINTER
图形打印机

LIM-64S ~ 10 DETECTORS LIM-64S~10 探头

UPPER DETECTORS 上位探测器

- COUNTS ENTIRE GARMENT SIMULTANEOUSLY VIA SIX 8" x 8" PLASTIC SCINTILLATION DETECTORS
6个8" x 8"塑料闪烁体探头同时计数整件衣物

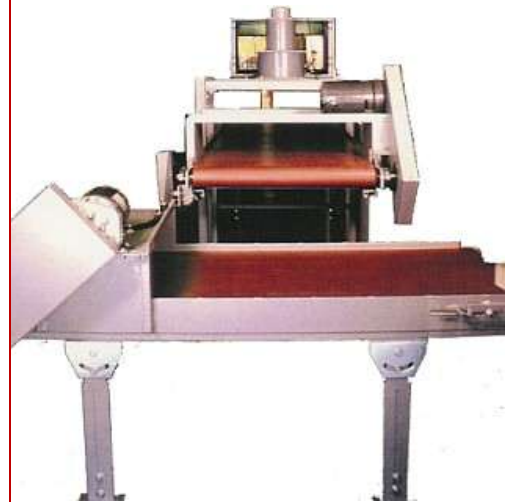
LOWER DETECTORS 下位探测器

- COUNTS ENTIRE GARMENT SIMULTANEOUSLY VIA FOUR 2" x 12" NaI(Tl) DETECTORS
4个2" x 12" NaI(Tl)探头同时计数整件衣物

LIM-23C-55 ~ 4 DETECTORS LIM-23C-55 ~ 4 探头

UPPER DETECTORS 上位探测器

- COUNTS ENTIRE GARMENT SIMULTANEOUSLY VIA FOUR 6" x 6" PLASTIC SCINTILLATION DETECTORS
4个6" x 6"塑料闪烁体探头同时计数整件衣物



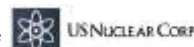
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Divisions of



LAUNDRY MONITORING SYSTEM 洗衣房监测系统

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DESCRIPTION: 描述

The LIM-64S & the LIM-23C-55 monitor laundry including pants, shirts, overalls etc., as they pass on the conveyor belt. The system automatically sorts laundry into contaminated and clean baskets by way of the dual conveyor belt system.

型号 LIM-64S & LIM-23C-55 监测包括裤子, 衬衣, 外套等衣物。当衣物在传送带上通过时, 系统通过双传送带自动分拣为受污染和干净两类。

The LIM-64S & the LIM-23C-55 Laundry Contamination Monitors are sturdy, dependable, long life mechanical systems with advanced computer and data processing.

此系统结实、可靠、长寿, 配备先进电脑及数据处理功能

The LIM-64S & the LIM-23C-55 systems are suitable for use in Nuclear Power Plants.

此系统适合核电站使用

PLEASE SEE FOLLOWING CHART FOR DETAILS

详情请见下表

	Detectors 探头	Placement 放置于	Detector Type 探头类型	Electronics 电子学	Detector Shielding 探头屏蔽
LIM-64S	10 Total 总计10个	6 Detectors Above 上位6个	412 cm ² Beta Plastic Scintillator 8" x 8" (20.3 cm x 20.3 cm) 412 cm ² β 塑料闪烁体8" x 8"	High Quality PreAmp 高品质前置 放大器	.24 in (.63 cm) Lead .24英寸铅屏
		4 Detectors Below 下位4个探 头	155 cm ² NaI(Tl) Gamma Scintillator 2" x 12" (5 cm x 30.5 cm) 碘化钠伽马闪烁体	Single Channel Energy Analyzer 单通道能量 分析仪	N/A
LIM-23C-55	4 Total 总计4个	4 Detectors Above 4个上位探 测器	230 cm ² Beta / Gamma Plastic Scintillator 6" x 6" (15.2 cm x 15.2 cm) β / γ 塑料闪烁体	Counting Sensitivity 灵敏度	.78 in (2 cm) Lead



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LIM-64S:

- 6 TOP 8" x 8" detectors each have 412 cm² active area
6个上位8" x 8" 探头, 每个有效探测面积412 cm²
- 4 BELOW detectors are each 2" x 12" NaI(Tl)
4个下位探头, 每个探头2" x 12" NaI(Tl)
- Each has its own electronics to give greatest sensitivity.
每个探头自带电子学以获得最佳灵敏度
- Garments are carried by a conveyor.
衣物由传送带传送
- They pass under a bridge with six detectors above and four detectors below.
衣物通过横梁时上面6个探头, 下面4个探头。
- Garments are physically sorted by the second conveyor into TA baskets or users containers, one for CLEAN and the other for CONTAMINATED garments.
衣物由第二个传送带分拣到TA篮子或用户箱子里, 衣物分为“干净”和“受污染”

LIM-23C-55

- 4 TOP 6" x 6" detectors each have 230 cm² active area
4个6" x 6"上位探头每个有效探测面积230 cm²
- Each has its own electronics to give greatest sensitivity.
每个探头自带电子学以给出最大灵敏度
- Garments are carried by a conveyor.
衣物由传送带传输
- They pass under a bridge with four detectors above
衣物从安装4个探头的横梁下通过
- Garments are physically sorted by the second conveyor into TA baskets or users containers, one for CLEAN and the other for CONTAMINATED garments.
衣物由第二个传送带分拣到TA篮子或用户箱子里, 衣物分为“干净”和“受污染”

DESCRIPTION (CONTINUED)

LIM-64S & LIM-23C-55

DATA: 数据

Numerical measurement results are saved to a high capacity hard drive easily accessible for all garments: clean and contaminated.

数字测量结果存储在大容量硬盘可容易查询所有衣物记录:干净和受污染

DISPLAY: 显示

Color LCD computer monitor shows measurement values from all detectors.

彩色LCD电脑屏幕显示所有探头测量结果



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Indicating lights show:

指示灯显示:

- STATUS or STEP OF OPERATION and BACKGROUND.
状态或操作步骤和本底
- READY TO COUNT
准备计数
- NEW GARMENT MOVING INTO POSITION
新衣物到位
- COUNT IN PROGRESS
计数中
- COUNT OK-CLEAN, OR COUNT ALARM-CONTAMINATED, ETC.
计数 OK-干净, 或者计数 报警-污染 等
- The DATE, TIME & RESULTS of each garment measured in that batch, that DAY, THAT WEEK & the YEAR are available for display, print-out and safe storage.
当批次每件被测衣物日期, 时间, 结果, 也可以显示/打印/存储当天, 星期, 当年结果
- Statistical reports are also created.
并生成统计报告

BATCH MODE: PARAMETERS

批次模式:

Authorized user sets alarm level, count time, motor speed, location where clothing was used, work group who wore them, etc., number of garments to be measured..

授权人员设定报警点, 计数时间, 速度, 衣物使用地点, 使用人群等, 待测衣物数量。

AUTOMATIC (CONTINUOUS) MODE is very similar to batch mode, but in Automatic Mode the garments are checked automatically, all day, or until there are no more garments to check.

自动模式(连续)与批次模式相似, 但是自动模式下衣物全天自动检测直至无衣物检测为止

The test parameters can be changed in automatic mode, at the beginning of the day, or by activating the manual override.

自动模式下测试参数可在一天开始时重新设定, 或者通过激活手动操作

Accessories: One set of calibration sources is supplied with both the LIM-64S & the LIM-23C-55 Laundry Monitors. This consists of one (1) each Ba-133, Cs-137, Co-60 calibration source standards. Each Source comes with NIST Traceable calibration certificate, test data, and Calibration Factors.

配件: 型号LIM-64S & the LIM-23C-55洗衣房监测器配备一套标定源, 包括一个Ba-133, Cs-137, Co-60标准标定源; 每个源带NIST溯源证书, 测试数据和标定因子。



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SPECIFICATIONS: 参数

DETECTORS: 探头

LIM-64S

TOP: Six (6) each Beta / Gamma plastic scintillators.
上方 412 cm² active area for each detector. (8" x 8") .
6个β/γ塑料闪烁体, 每个探头有效探测面积412 cm²

BOTTOM: Four (4) each 2" dia x 12" Long NaI(Tl)
下方 Single channel energy analyzer allows narrow focus on 511 Kev or other Isotopes or wide window for all Isotopes.
4个直径2" x 长12" NaI(Tl)

Sensitivity: To all nuclides mentioned below down to 1,000 dpm/100 cm² at a speed of 8 to 10 feet per minute

灵敏度: 以下列出的核素在速度8-10英尺/分钟情况下可测到1,000 dpm/100 cm²

Sensitive to wide range of Gamma emitters with low to high energies including:

对以下低能到高能伽马发射体灵敏

TI-201, In-111, Ga-67, Mo-99, Tc-99m, I-131, I-123, etc.

LIM-23C-55

TOP: Four Beta / Gamma plastic scintillators.
上方: 230 cm² active area for each of the four detectors.
4个β/γ塑料闪烁体, 每个探头有效探测面积230 cm²

Counting Sensitivity Sees 22,000 dpm/100cm² in less than 20 sec.
计数 20秒内灵敏度可达22,000 dpm/100cm²

Ultimate Sensitivity: 1.0 Bq/cm² based on 100 x 100 mm Co60 distributed source.
Background of 0.3 Sv/h. Conveyor of 50 mm/sec.

高灵敏度: 100 x 100 mm Co60 分布源为1.0 Bq/cm², 本底0.3 Sv/h.传送带50mm/秒

LIM-64S & LIM-23C-55

Conveyors: Clothing passes under the detectors.
Clothing is physically sorted onto "CONTAMINATED" basket & "CLEAN " basket.

传送带: 衣物通过探头下方
衣物分拣到“受污染”篮子和“干净”篮子

Conveyor System: 2 each conveyors.
Belt #1 is 6 ft. long, (typical) belt carries clothes under detector.
Belt #2 is 4 ft. long, (typical) reversible direction conveyor, drops CLEAN clothes to one side and drops off CONTAMINATED clothes on the other side.

传送系统: 2条传送带
传送带#1长度6英尺, (典型) 衣物由探头下方传送
传送带#2长度4英尺, (典型) 双向传送带, 将“干净”衣物送入一侧, 将“污染”衣物送入另一侧。

Conveyor Speed: Continuously variable, user settable. 150 mm/sec typical.



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- 传送带速度:** 可连续改变, 用户设定, 典型150 mm/sec
- Useful Width:** 24" (610mm).
- 使用宽度:**
- Background:** Automatically subtracted.
- 本底:** 自动扣除
- Shielding:** LIM-23C-55.78 "(2 cm) lead over greater than 2 pi. Lead shield is modular and easy to assemble (no piece over 65kg)
- 屏蔽:** LIM-23C-55.78"(2 cm)铅, 大于2 π, 模块铅屏易于组装(均小于65kg)
LIM-64S ¼" (.63cm) lead over greater than 2 pi. Lead shield is modular (no piece over 65kg)
LIM-64S ¼" (.63cm) 铅, 大于2 π, 模块铅屏易于组装(均小于65kg)
- Detector Electronics:** Each plastic scintillator has its own PM tube. PMT base (dynode string circuit), Independent Modular high voltage with pre-amp and discriminator. This provides improved sensitivity and easier maintenance if a PM tube is replaced.
- 探头电子学:** 每个塑料闪烁体带自己的PM管, PMT(光电倍增管)底座, 单独模块式高压带前置放大器和甄别器, 这样改进了灵敏度, 在需要更换PM时管易于操作。
- Alarms:** Alarm threshold is continuously adjustable.
High level alarm is user settable.
AUDIO & VISUAL alarms plus screen display.
- 报警:** 报警阈值可连续调整, 上限报警用户设定, 视听报警加屏幕显示
- Operation Modes:** Batch or Automatic (Continuous) or Calibration
- 操作模式:** 批次或自动(连续)或刻度
- Display:** Color LCD screen monitor.
- 显示:** 彩色LCD屏显
- Data:** All data automatically stored on HIGH CAPACITY hard drive.
USB / Ethernet ports.
Graphics printer included.
User can print tabular or graphical records of current day, week, month or year.
- 数据:** 所有数据自动存储在大容量硬盘里
SUB/以太网接口, 图谱打印机, 用户可打印当天/星期/年表格或图形记录
- System Weight:** 175 Kg plus Shielding
- 系统重量:** 175 kg, 外加屏蔽
- ENVIRONMENT:** 环境
- Temperature:** 32°F to 122°F, (0° to 50°C)
- 温度:**
- Humidity:** 10% to 95% relative humidity, non-condensing
- 湿度:**
- Energy Threshold:** Continuously adjustable for each detector.
- 能量阈值:** 每个探头可连续调整
- Data Analysis:** First in individual channels and then combined channels. Noise rejection Background



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subtraction Energy Analysis Calibration and units conversion Statistical significance check.

Alarm point trip level

数据分析: 首先每个通道，然后合并通道，噪音抑制本底扣除能量分析标定，单位转换统计学显著意义检查，报警设定点

Open Source: All Technical Associates generated software is provided with source code to users.

开源: 所有TA公司提供软件源码对用户开放

Software: Technical Associates utilizes "Labtech notebook" software which allows user to make changes in System operation without being a programmer.

软件: TA公司使用"Labtech notebook"允许用户在操作系统中进行改动

ELECTRONICS: 电子学

Power Supply: 100 - 120 V AC or 220 V 50/60 Hz with UPS

电源:

Battery Backup: Uninterruptable "UPS" battery backup is supplied.

备用电池: 不间断UPS备用电池

Electronics includes: 电子学

- Photo Multiplier Tube And Base 光电倍增管及底座
- Detector HV bias. 探头高压偏置电路
- Amplifier with Adjustable Energy Threshold. 放大器可调节能量阈值
- Data Sent To & Acquired By PC. 数据发送至 PC 机
- Data Analysis. 数据分析
- Alarm Trigger. 触发报警
- Data Storage. 数据存储
- Data Printout. 数据打印
- Optional Data Transmission (Ethernet). 可选数据传输 (以太网)
- Conveyor Control. 传送带控制
- Conveyor Status Indicators. 传送带状态指示
- System Power UPS Battery Back-Up. 系统电源 UPS 备用电池

OPTIONS:

选项

- Conveyor Extensions. 延长传送带
- Outlet Annunciator Panel. 输出信号控制板
- Spare detector plus other spare parts. 备用探头及其它备件
- Inlet Annunciator Panel. 输入信号控制板
- Calibration Jig. 标定固定器
- Accessory Control Panel. 辅助控制板
- Bar-code System . 条码系统



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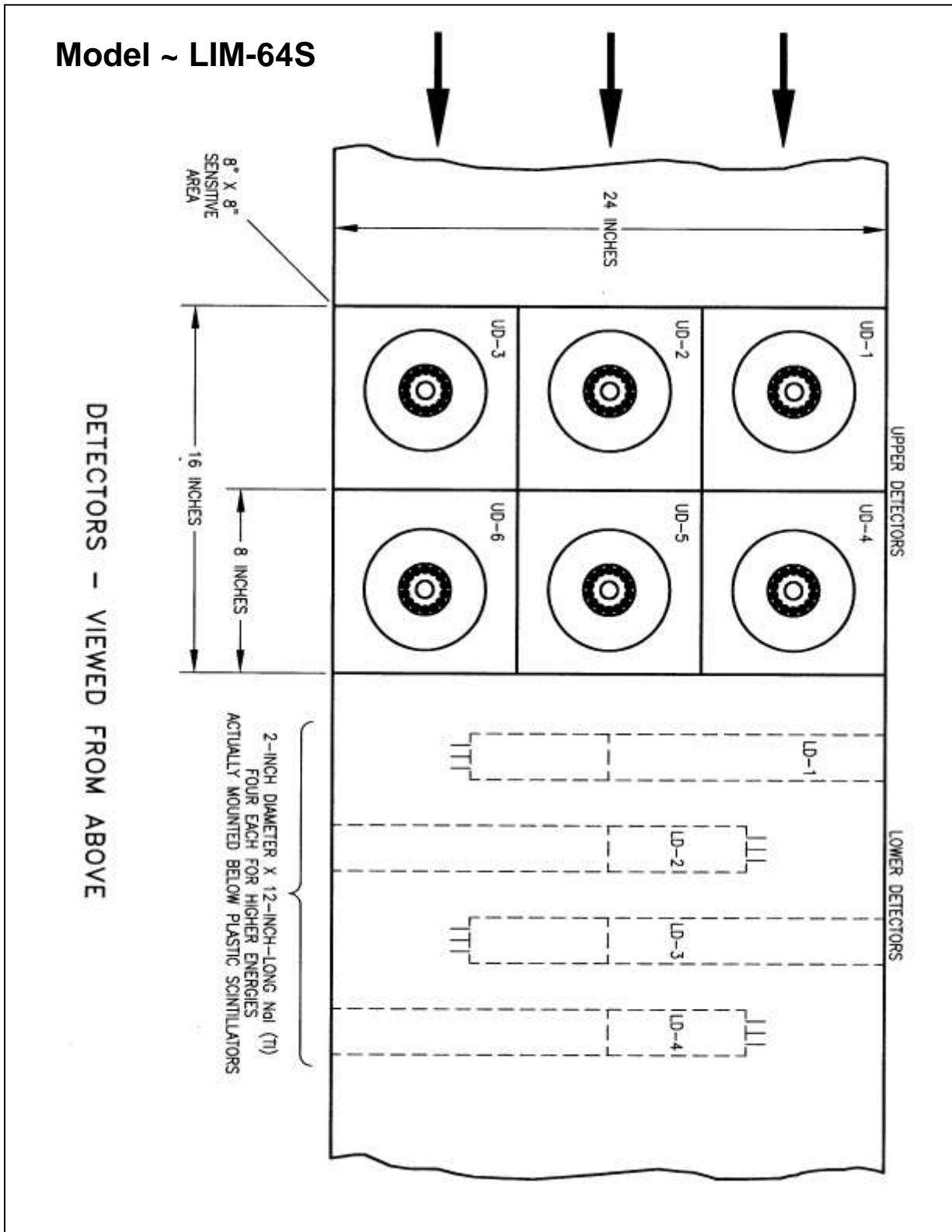
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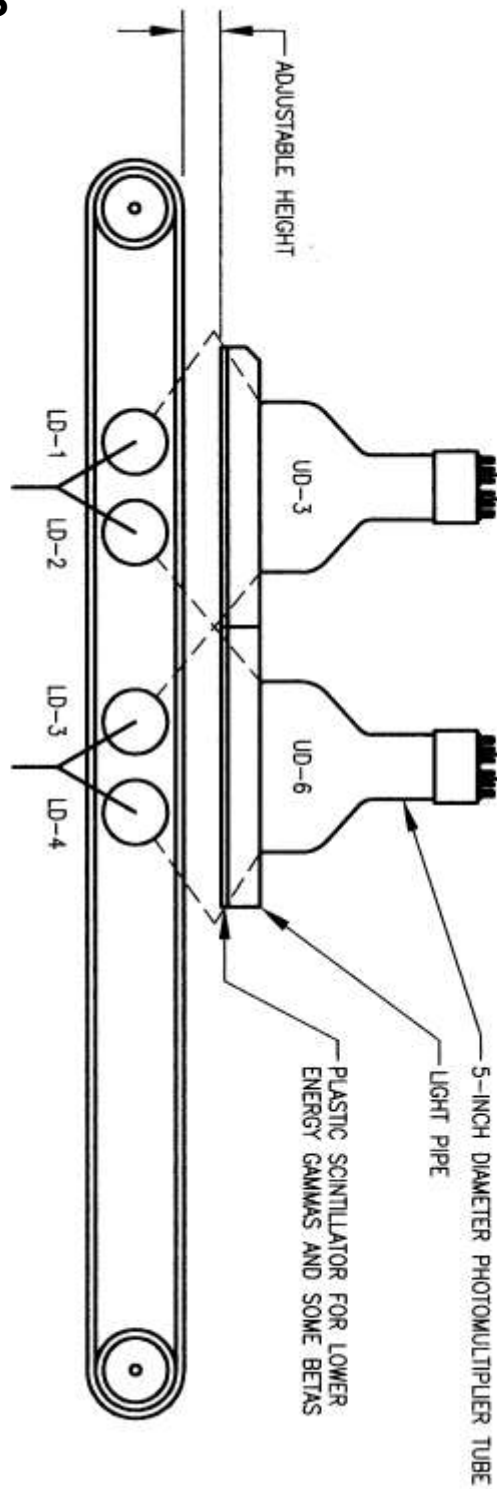
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Model ~ LIM-64S

DETECTORS - SIDE VIEW



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