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Identify
Ergonomic
Risk

Perform
Job
Analysis

Implement
Controls

Evaluate
Efficiency

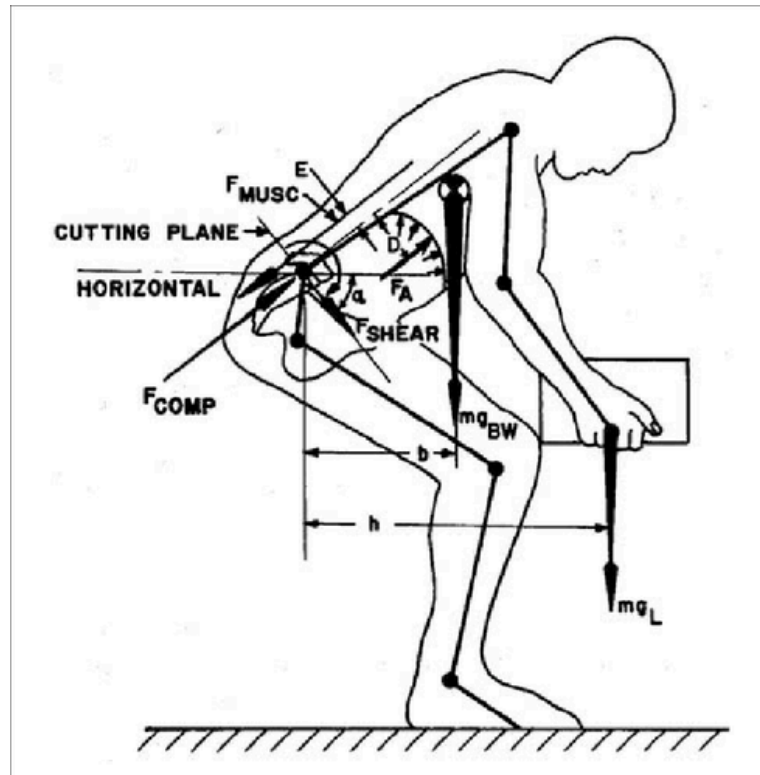
BACKGROUND



- Frequency: 1 Lift Every 10 to 15 Minutes / 8-Hour Shift
- Load: 40 - 50 lb Rolls
- Hazard: Awkward/Extreme Posture and High Force Exertion

Goal: Eliminate the Risk of Acute Injuries & Work-Related Musculoskeletal Disorders

ANALYSIS



Acceptable Force on L5S1: **3400 N**
Calculated Force on L5S1: **4500 N**

Initial Ergonomic Scores

RULA REBA LIFT INDEX

7

11

3.15

All scores indicate a **Very High Risk** and a need to **Implement Change**

IMPACT

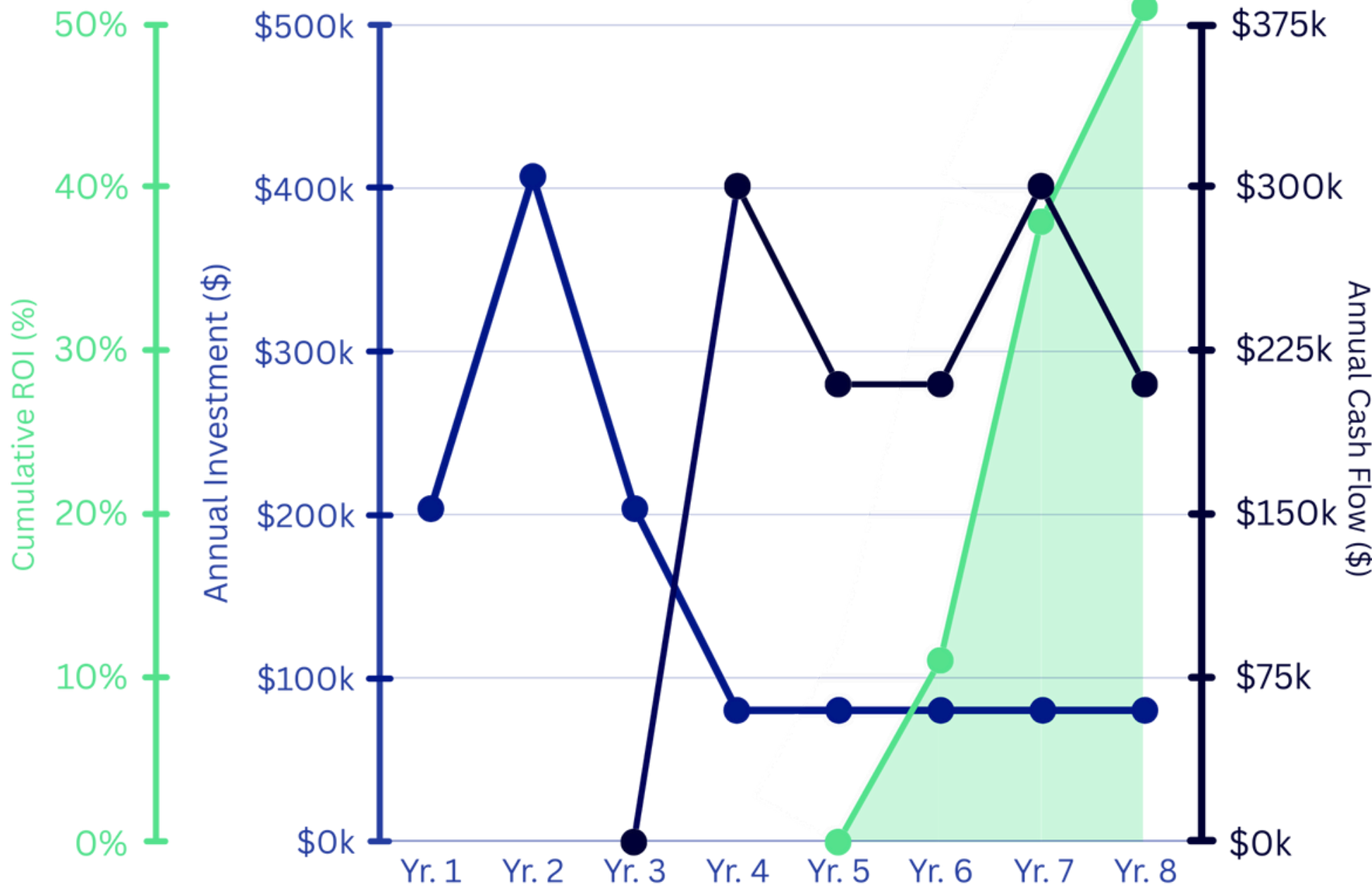
Intangible Results

- Worker Flexibility
- Worker Safety
- Worker Quality of Life

Tangible Results

- 100% Ergonomic Risk Elimination
- Workforce Restructuring 38% Labor Reduction

8-Year ROI Analysis



Total Investments

UR30s:	\$321,200
KPM 600Ps:	\$328,000
Misc.:	\$165,300

Future Impact

Hazard Avoidance:	\$80,000
Labor Avoidance:	\$297,800

AM-CO-BOTS



Universal Robots' UR30



KUKA's KPM 600-P

- Removes Operator from Hazardous Process.
- Addition of KPM 600P Reduces Investment of Full Implementation of UR30s by 73%.
- Provides Live Operational and Production Data.

SCALABILITY

- 2 facilities domestic and abroad
- 78 total workers
- 5 total injuries in the past 3 years

HAZARD PREVENTION MEASURES

New Hazards	Prevention Measures
Programming Errors	Software Updates and Fail-Safes
Area Overlaps	Safety Sensors and Barriers
Collisions	Clear and Defined Work Areas

Full Safety Compliance with ISO/TS 15066 and ISO 10218-1/2 Regulations