
ShotShower™
HOTIDEAS

ShotShower™
Your Return on Investment

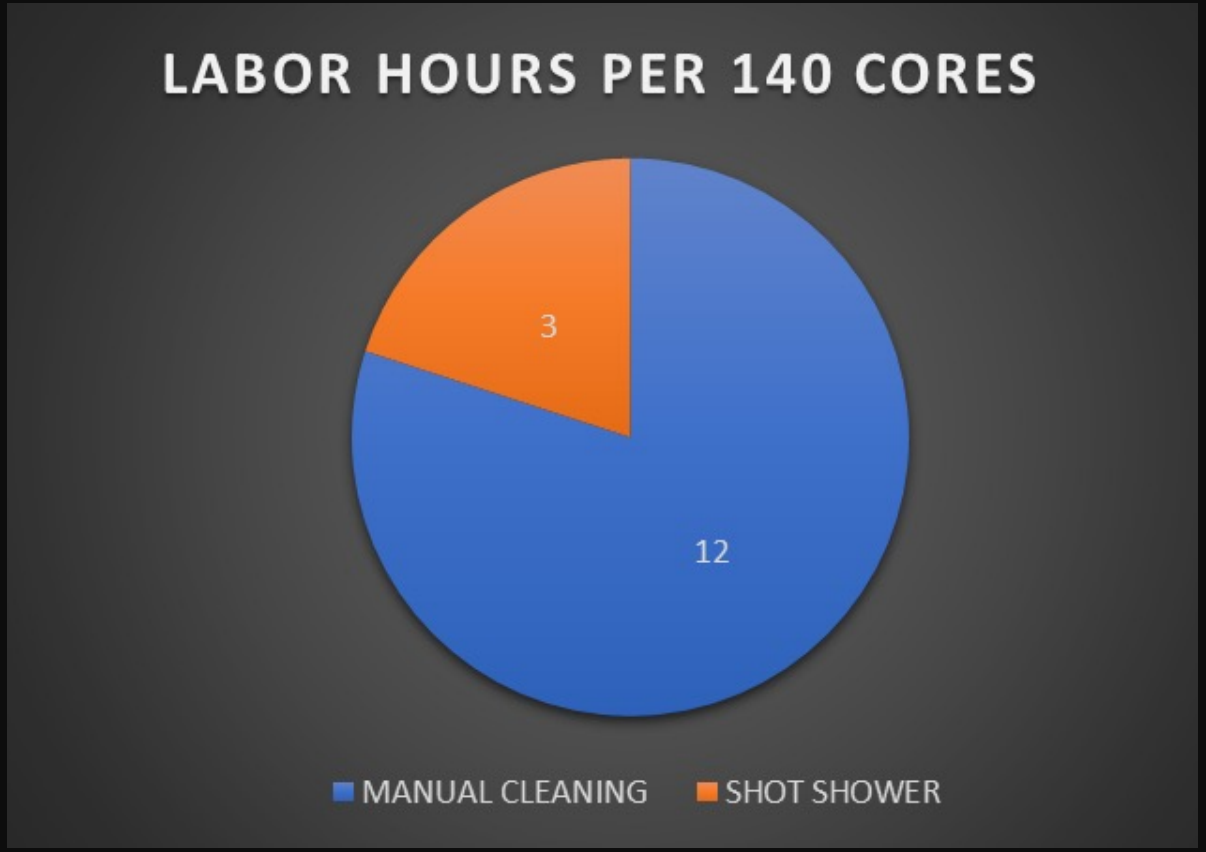
Today's Basic Parameters of the Foundry Industry

- The foundry industry is quickly moving toward volume production using 3D printers.
    - 3-D printers have allowed foundries to make more complex parts in one piece.
        - Example shown used to be made in three pieces and manually glued together. Very prone to bad cores and inconsistent quality.
        - 3-D printing allows foundries to print and create more complex parts.
        - Cleaning after printing these more complex parts has proved challenging.

ShotShower™ R.O.I

- Process Improvements:
  - Labor cost reductions – 75%
    - **ShotShower™** can clean 4 times as much product in 12-hour example
  - Breakage reduction – 1% versus 20%
    - Manual brushing on more complex parts is prone to breaking small components
  - Ability to handle more complex designs
    - **ShotShower™** can clean designs with internal cavities that manual brushing cannot reach or handle
- Real World Production Example from Alpha Foundry
  - Currently the 3-D printer can produce 420 cores in 9 hours
  - Manual cleaning takes 12 hours to clean 140 cores

ShotShower™ can clean 420 cores in 9 hours making full use of the printer capacity

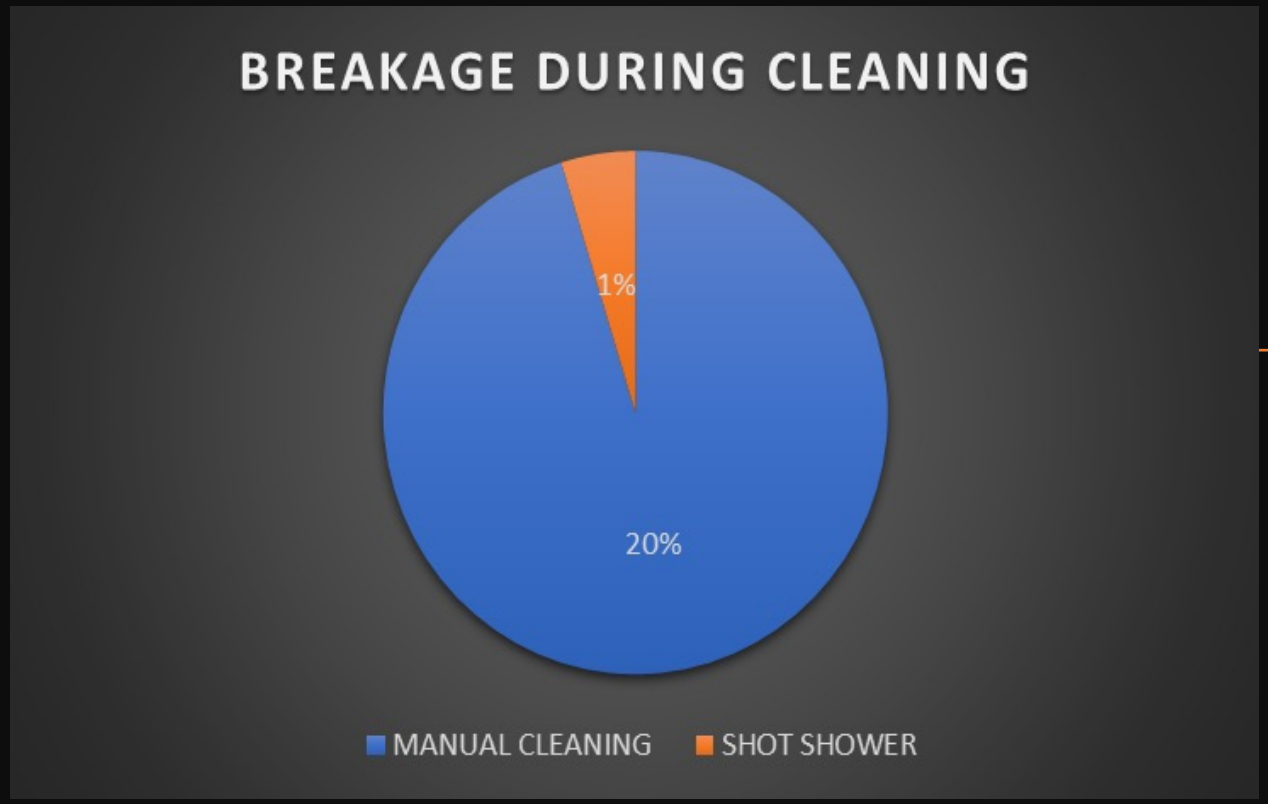


HOTIDEAS

ShotShower™ R.O.I

- Reduction in employee count when manual cleaning is eliminated
  - Simplified operator training to enable quick implementation of **ShotShower™**
  - Reduction in cleaning costs of 75%
  - Reduction of 20 to 1 in breakage during cleaning process
  - Full recovery of shot media and residual sand
  - Low cost of equipment maintenance
  - Space saving footprint
  - Mobile platform on wheels
  - Low cost and easily obtained cleaning media
  - Full utilization of 3-D printing production capacities
  - Ability to create and produce more complex designs
  - Cores can be printed, cleaned and moved to casting in one piece versus multiples
  - Sturdy design with minimal moving parts
  - Scalable machine design to handle small to medium fabrication parts

Features and Benefits of **ShotShower™**



HOTIDEAS

MANUAL CLEANING vs ShotShower™

Manual Cleaning

3D Printer Productivity –

- 420 units in 9-hour shift.

Core investment per piece=$8.00

Manual Cleaning –

- $25 per hour in labor cost
- 420 units in 9 hours requires 36- man hours
- (4.5 employees)
- 36-man hours @ $25/hour = $900 investment
- Cleaning cost per core unit = $2.14
- Breakage cost @ 20% = 84 defects per production run
- Additional Cost of Breakage = $672 (84 X $8)
- Net Production = 336 units
- Total investment per 420 units = $1,572
- Net Cost for Usable 336 units= $4.67 per core unit

ShotShower™ Cleaning

3D printer productivity – 420 units in 9-hour shift

- 420 units in 9-hour shift.

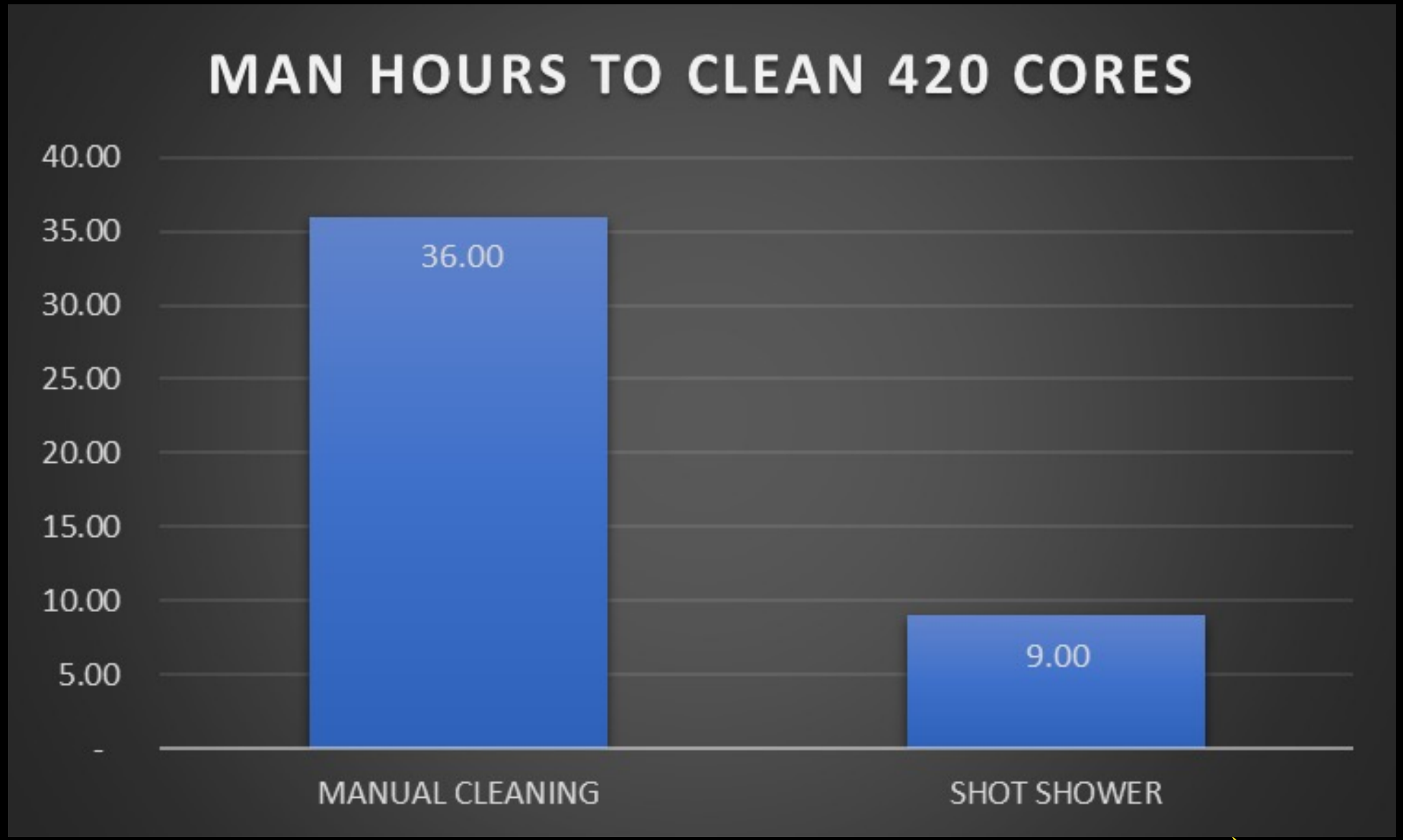
Core investment per piece $8.00

ShotShower™ Cleaning –

- $25 per hour in labor cost
- 420 units in 9 hours requires 36-man hours. (1.1 employees)
- 9-man hours @ $25/hour = $225 investment
- Cleaning cost per core unit = $0.54
- Breakage cost @ 1% = 4 defects per production run
- Additional Cost of Breakage = $32 (4 X$8)
- Net Production = 416 units
- Total investment per 420 units = $257.00
- Net Cost for Usable 416 units= $0.62 per core

Net savings per core unit = $4.05

HOTIDEAS


MAN HOURS TO CLEAN 420 CORES
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
-
36.00
9.00
MANUAL CLEANING
SHOT SHOWER

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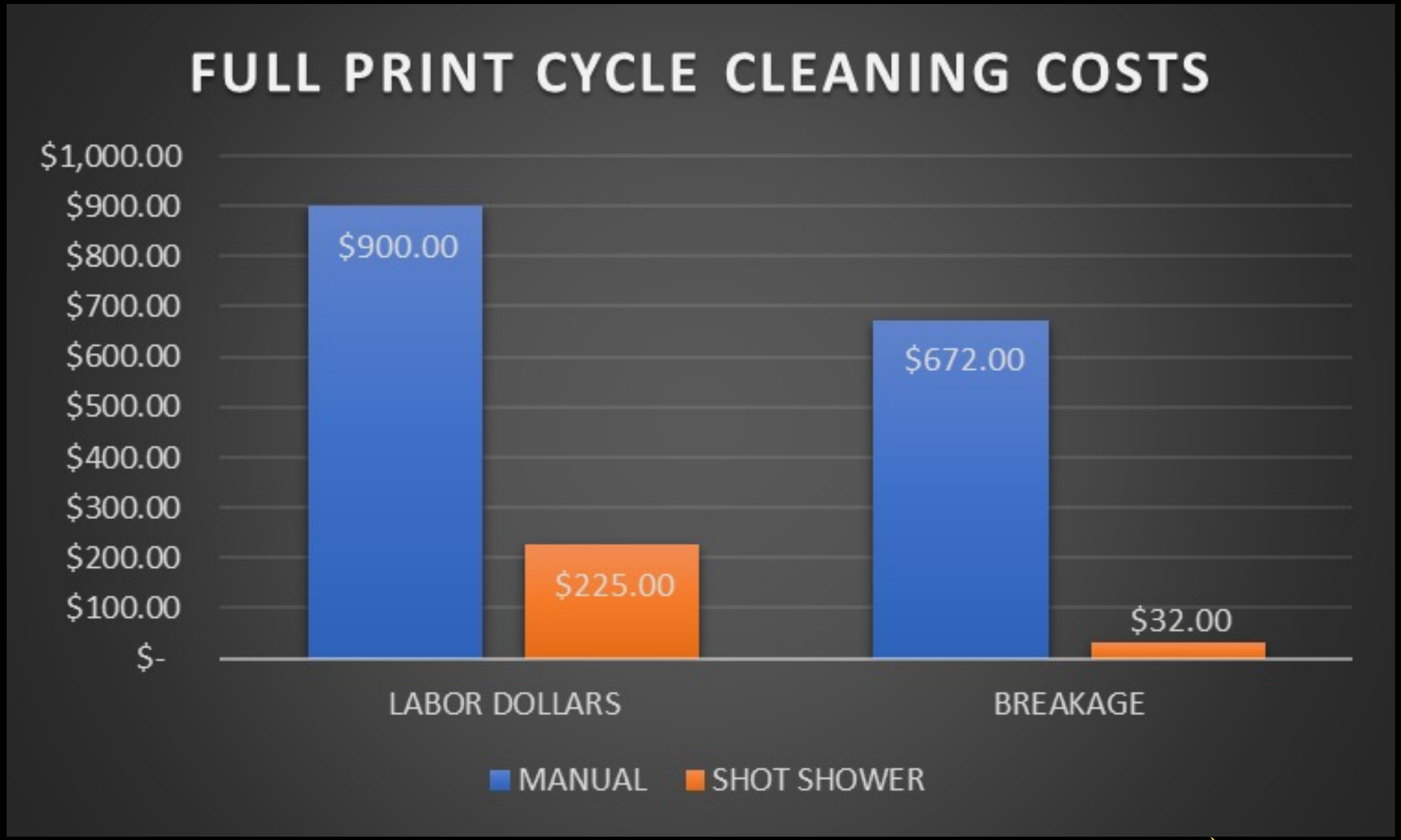
FULL PRINT CYCLE CLEANING COSTS
$1,000.00
$900.00
$800.00
$700.00
$600.00
$500.00
$400.00
$300.00
$200.00
$100.00
$-
$900.00
$225.00
$672.00
$32.00
LABOR DOLLARS
BREAKAGE
MANUAL
SHOT SHOWER

ShotShower™
Your Return on Investment

- **ShotShower™ I**nvestment – avg $35,000.00*
- 3-D printer production average – 400 units/day
- Savings using **ShotShower™** per day's production = $1,620

Only 22 production days required to pay for ShotShower™ investment!

*Pricing varies on equipment size and features

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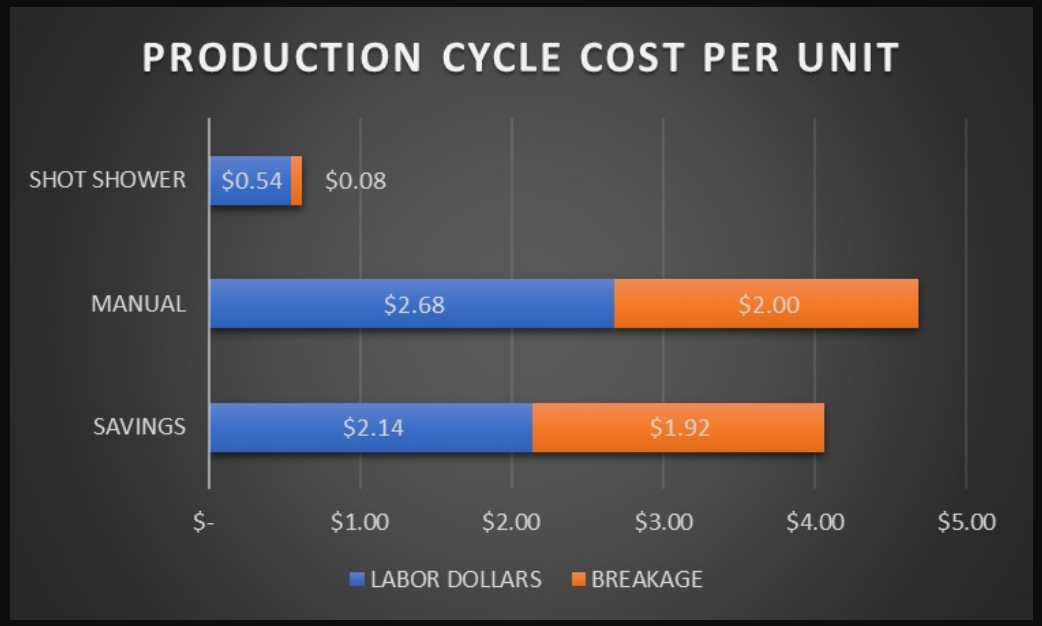

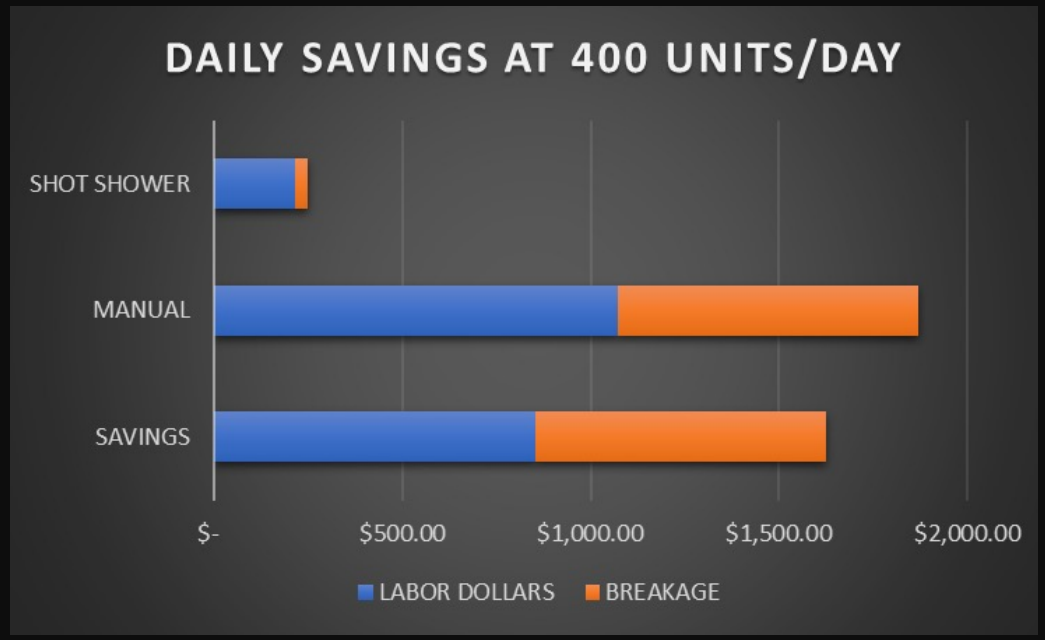

We’re Alpha Foundry and
we’re in the foundry business just like you!

Contact Us Today
and Get Your Shop a
ShotShower™

Call Ryan or Emerson at
636-555-5555
or Email Us at
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