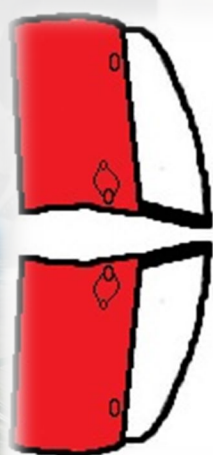




Sealer Saving Solutions



DOORLINE

IVINE



HONDA

Honda of America Mfg., Inc.  
East Liberty Auto Plant





# Tammy Gabbard



## **Assembly Frame Team Manager**

- Production
- Production Team Coordinator
- New Model Team Coordinator
- Team Manager

# How it all began...





\_\_\_\_\_

## Reduction of Sealer Waste

**“Approximately 44 pounds of door sealer is being wasted every single work day. Our team will work to reduce the wasted material and look for alternative materials to lower cost.”**

**- Doorline Divine**

Business Plan Link

**Theme Idea:** Reduce door sealer waste

Business Plan: SEQDCOM

**Department:** Assembly Frame

### Business Plan Item: Cost Reduction

**Business Plan Text:** Reduce door sealer waste by 50%

## 93K1 AF Cost Theme: Develop Detailed Loss Tree and Implement Themes

**Division Theme**

4.5 Set Expectation for Company / Department to Routinely Rotate PDCA and Update Loss Reduction Theme Activity


**Department Theme**

4.5.1 Develop Detailed Loss Tree and Implement Themes

Resources / Input	Value	Target / Goal / Objective	Measurable / Output	Actual	Status
Loss Tree Examples		February End	2/2016		
Loss Tree Items		At least two items each QCDMS	3/2016		
Quarterly Updates		Update after each Budget Event	4		

Background / SA

- HMIN AF Struggles meeting Budget Targets
- HMIN AF has not had an active loss tree
- Benchmarking has not taken place with other NA AF plants



**Theme Organization**

```

graph TD
    MA[Matt Ambs] --> IT[Indirect TM's]
    MA --> SA[SA's]
    SA --> DT[Direct TM's]
            
```

**Schedule**

Activity	P	93K1												SI at 93		
		J	F	M	A	M	J	J	A	S	O	N	D		J	F
Gather ideas and choose Loss Tree items	P															
Create, approve and distribute Loss Tree	P															
Update Tracking Sheet Monthly	P															
Quarterly Updates after Budget Events	P															



# Situation Analysis

## Initial Tracking Information

Sealer Barrel Change Log

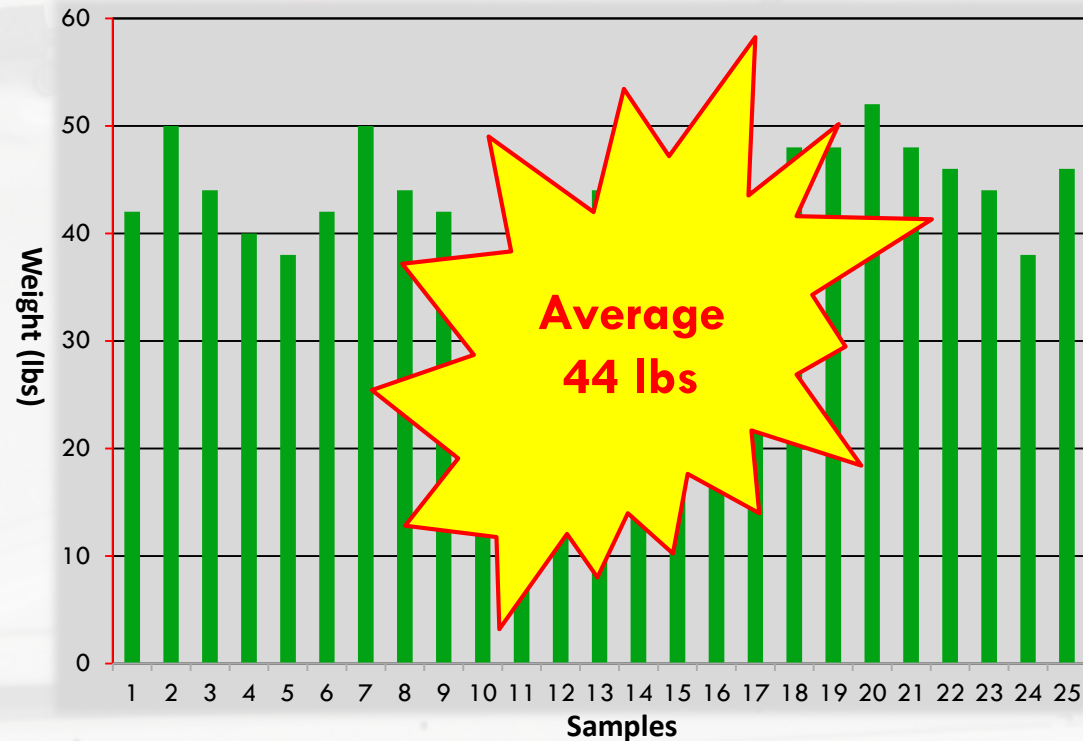
	Date	System	Weight
1	4/6/2015	L2	42
2	4/8/2015	R1	50
3	4/9/2015	L1	44
4	4/13/2015	R2	40
5	4/14/2015	L2	32
6	4/15/2015	R1	40
7	4/21/2015	R1	50
8	4/22/2015	L2	44
9	4/26/2015	R2	36
10	4/27/2015	L1	36
11	4/28/2015	R1	38
12	5/5/2015	R1	40
13	5/7/2015	R2	44
14	5/8/2015	L2	36
15	5/12/2015	R1	42
16	5/13/2015	L1	46
17	5/18/2015	L2	42
18	5/19/2015	R1	48
19	5/21/2015	R2	48
20	5/26/2015	L2	50
21	5/27/2015	R1	48
22	6/1/2015	L1	46
23	6/3/2015	R1	44
24	6/4/2015	L2	38
25	6/5/2015	R2	46

High 52 lbs



Low 36 lbs

- Average of 44 lbs of door sealer wasted per barrel
- Approximately 1 barrel changed each work day



# By The Numbers



**\$890.50 / Barrel**  
**500 lb Barrel**  
**\$1.78 lb**



**Each barrel**  
**can seal over**  
**4,000 doors**



**Average Sealer**  
**\$0.22 / door**



**HMIN**  
**242 Barrels / Year**  
**\$251,501 / Year**



**Change once a day**

**Average waste 44 lbs**  
**\$78.37 Barrel**

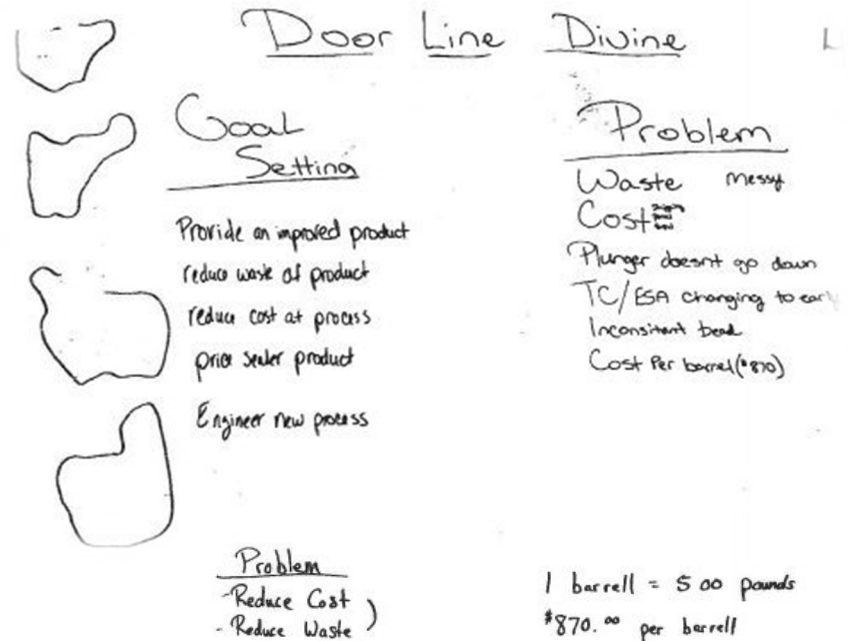
**91% of product used**



**4 Systems**



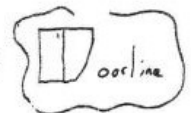
# Cause Analysis



1 barrel = 500 pounds  
\$870.00 per barrel

Approx \$1.74 per pound

Approx 44.50  
lbs wasted Every  
day

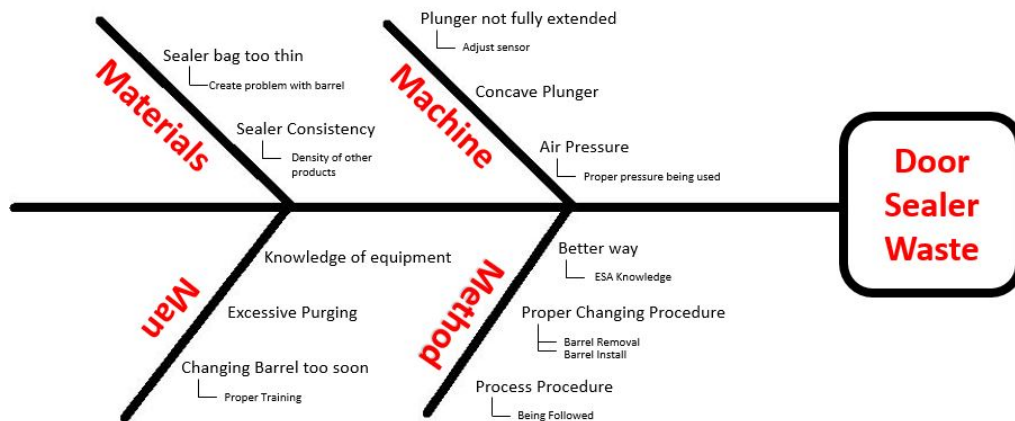
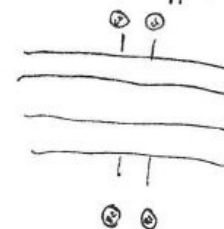


1 barrel does Approx 4,000 doors

Cost  
Delivery - Truck  
OSL

## Ideas

- Whole New Way
- Different Materials
- Different Supplier



# Sealer Process



**Rubber butyl sealer is applied to door skin manually.**



**Sealer is covered with panel creating water tight seal.**



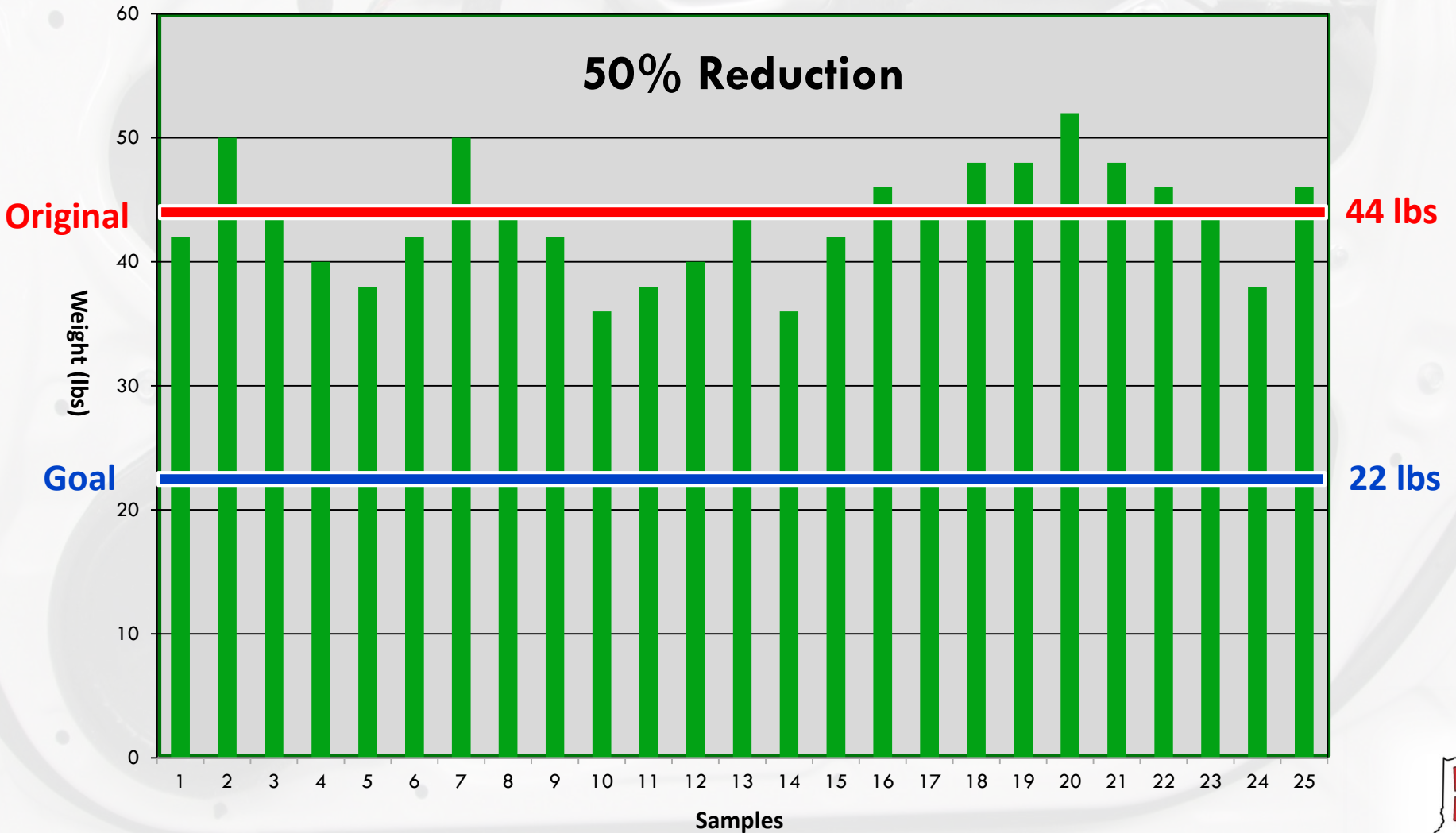
**Sealer gun rate of application & Operation standard requires 7mm bead of sealer for quality bond.**



# Our System



# Goal





# Countermeasure Selection

Reduce Sealer  
Waste

Different  
product

Automation

Pro-rated  
barrels

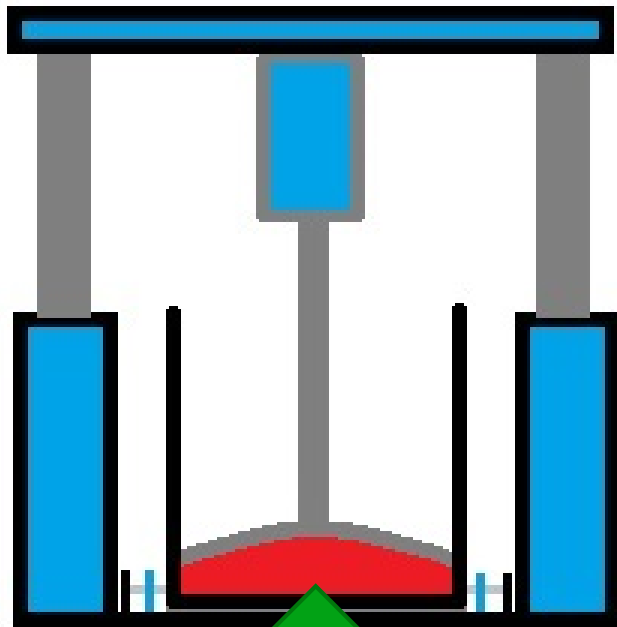
Different  
supplier

Plunger  
modifications

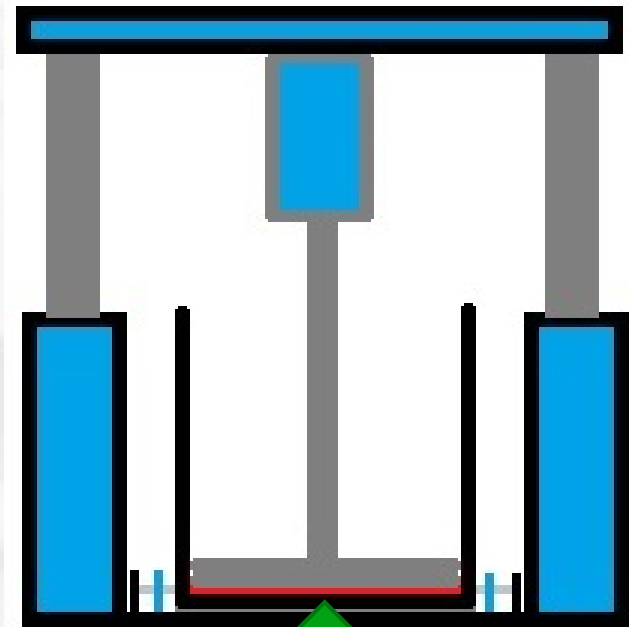


# Countermeasure Selection

**Concave Shape**



**Flat Surface**





# Sealer Saver Plate

SEGNA, Inc.  
1025 S. Greenfield  
Troy, OH 45475  
TEL: (937) 339-0266 FAX: (937) 339-0812

QUOTE

Customer: MONROE OF INDIANA  
City: Ellettsville  
Quantity: 1  
Unit: \$1870.00

Item: 1  
Description: 276 HOLES 1/2" DIA. 1/2" THK  
Unit Price: \$1870.00  
Total: \$1870.00

QUOTED PACKAGE: Yes  
TOTAL: \$1870.00

TERMS: 30 DAYS ARO  
DELIVERY: FOB  
SHIP VIA: Pick Up  
BRIAN H.

Invoice

SEGNA, Inc.  
1025 S. Greenfield  
Troy, OH 45475  
TEL: (937) 339-0266 FAX: (937) 339-0812

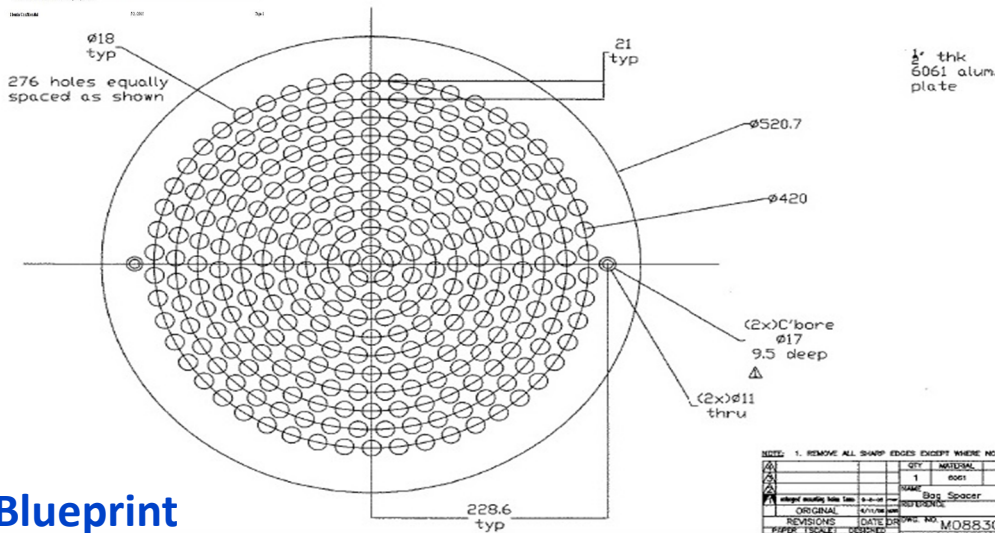
Requisition

Item: 1  
Description: 276 HOLES 1/2" DIA. 1/2" THK  
Unit Price: \$1870.00  
Total: \$1870.00

QUOTED PACKAGE: Yes  
TOTAL: \$1870.00

TERMS: 30 DAYS ARO  
DELIVERY: FOB  
SHIP VIA: Pick Up  
BRIAN H.

- ❑ Made from 6061 grade aluminum
- ❑ 1/2 inch thick
- ❑ Bolts directly to plunger
- ❑ 276 equal holes
- ❑ Eliminates all possibility of bag being sucked into sealer pump



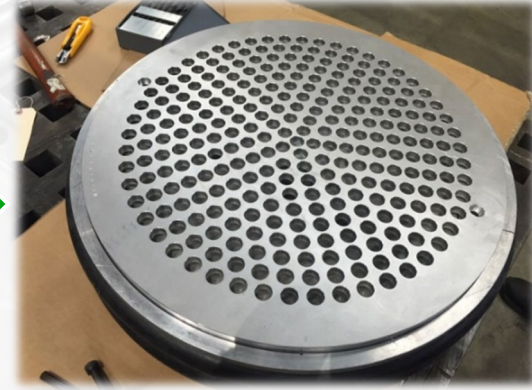
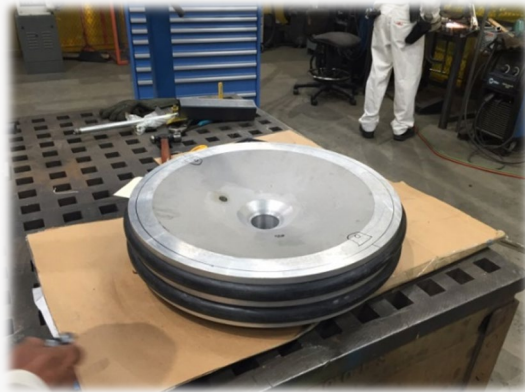
NOTE: 1. REMOVE ALL SHARP EDGES EXCEPT WHERE NOTED.

REVISIONS	DATE	BY	NO.
ORIGINAL			
REVISIONS	DATE	BY	NO.
ORIGINAL			

MO883019-1

MONROE OF AMERICA INC.

# Christmas in September

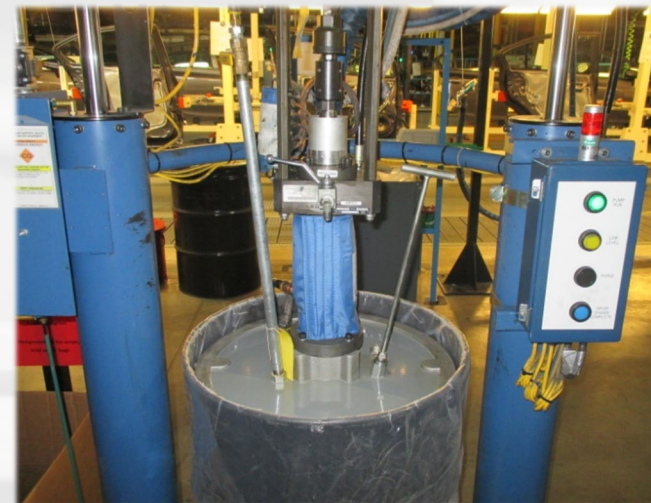
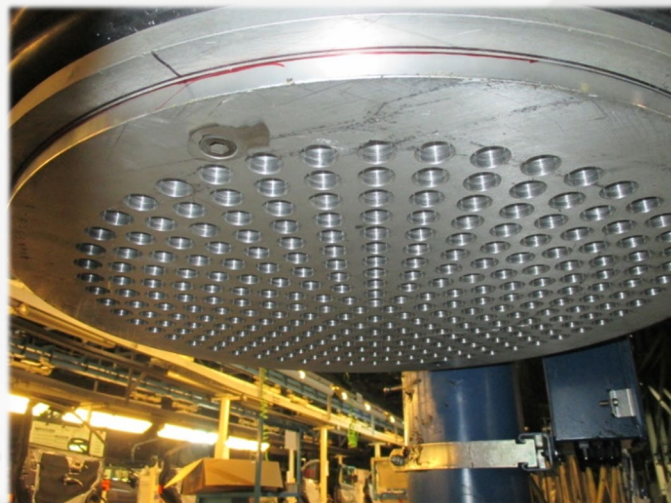


- ❑ Sealer Saver Plate ✓
- ❑ Adjusted proximity sensor
- ❑ System feet modifications





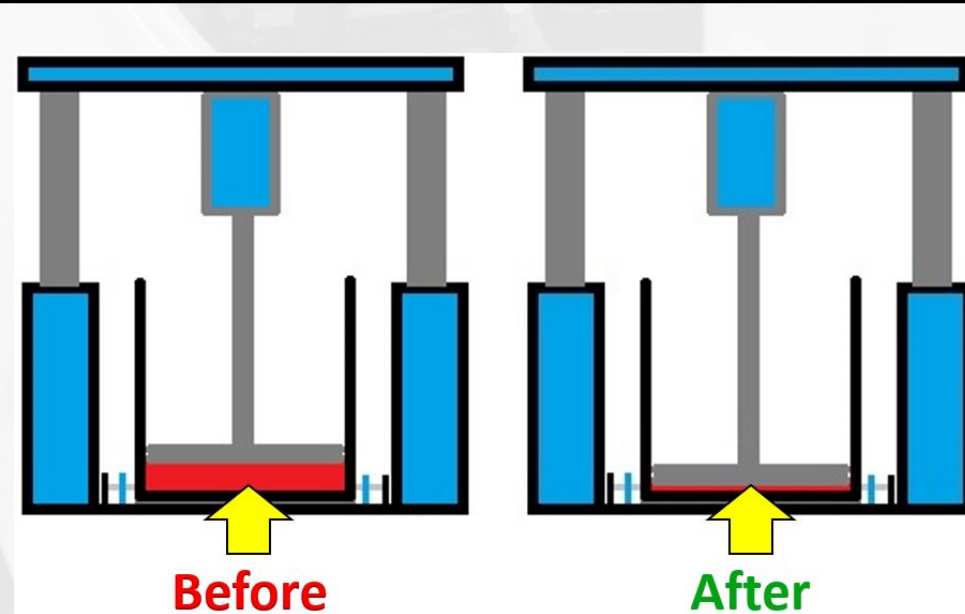
# Installation On System





# Proximity Sensor

**This sensor declares barrel empty when top system cross bar reaches it.**



**To achieve efficient performance, this sensor had to be lowered to reach the wasted product.**



# Trouble In Paradise

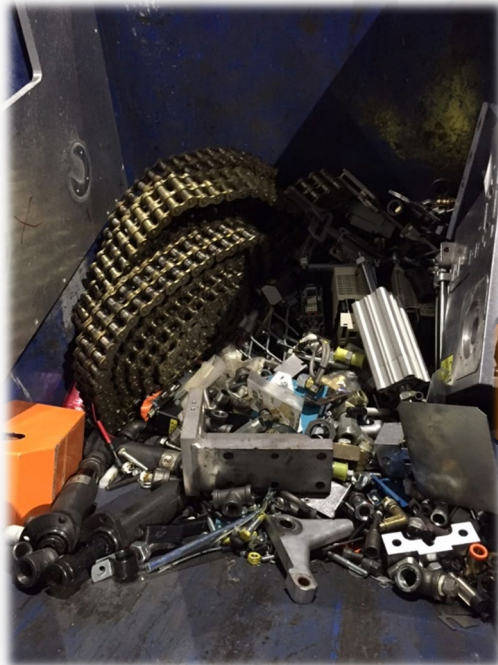


**High Volume Suction**

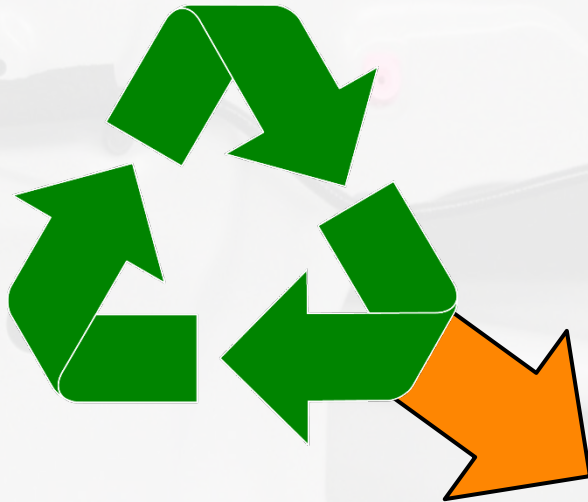


**Trapped Air**

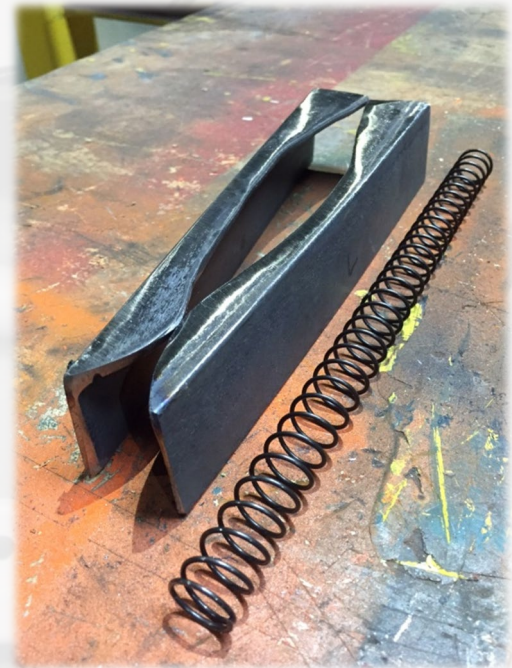
# System Feet Modification



Made 100 % in house by manufacturing our own product from scrap material



**Cost to HMIN = \$0**



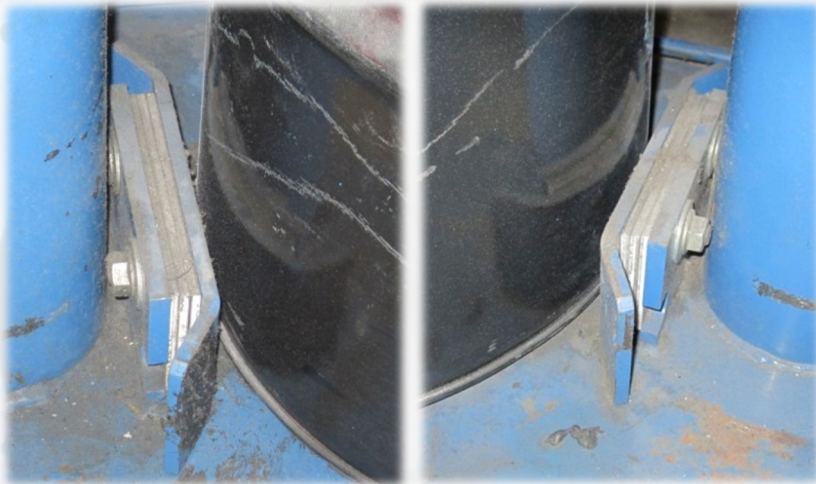
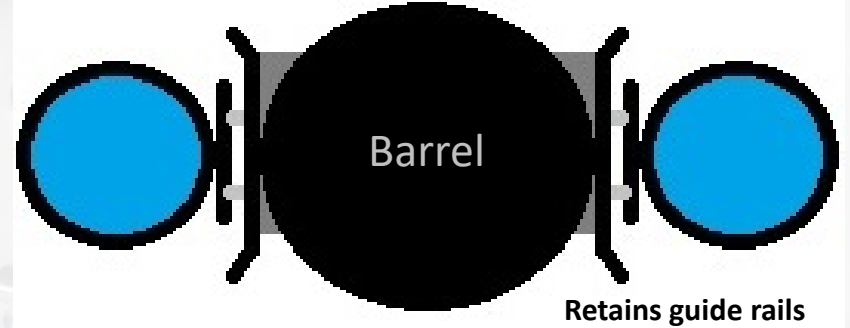


# System Feet Modification

**Before**



**After**

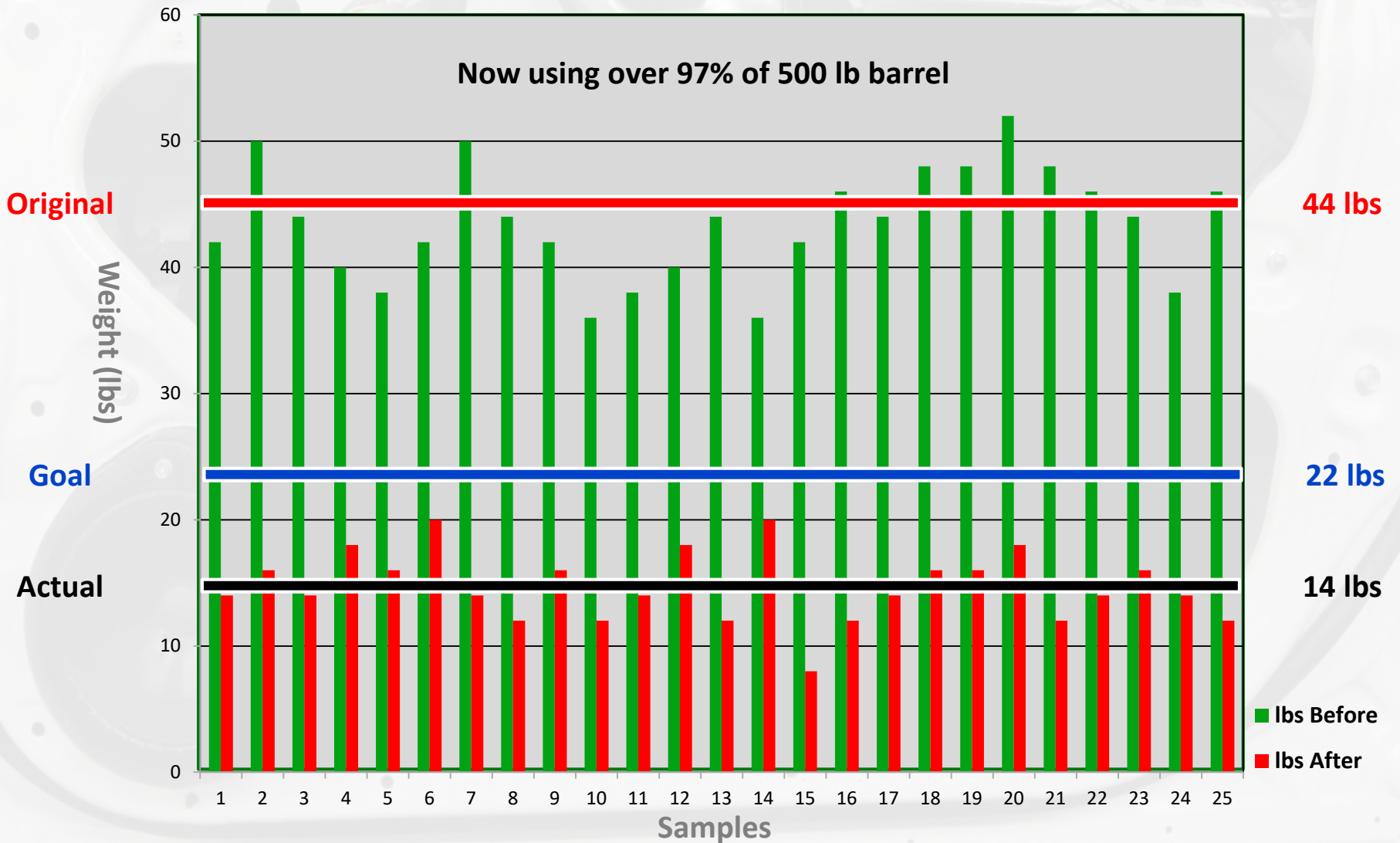


**Feet only guide barrel into position**



**Clamp now hugs barrel with pressure constantly applied**

# Results





# Results

**68% Reduction  
In waste**

Reduction of 30 lbs of waste/ barrel

$30 \text{ lbs} \times \$1.78 \text{ lb} = \$53.40 / \text{barrel}$

$\$53.40 \times 242 \text{ barrels} = \$12,923 / \text{year}$

Saving over 15 barrels / year  
by using reduced waste

**\$13,468 / year**

**Total savings per year  
\$26,391**

# E-Theme



**HMIN investment**

**\$1,615**



**Sealer waste savings**

**\$53.40 x 30 barrels = \$1,602**

**30 barrels = 30 work days**



**Investment paid off in 30 days!**



# Results Analysis



**Project fully  
implemented  
and  
operational**



**Over \$26,000  
savings a  
year for  
HMIN**



**No impact to  
process or  
associates**



**Investment  
paid off**



**Knowledge,  
experience,  
and  
satisfaction  
of making a  
difference for  
our team**



# Environmental Impact



BLUE SKIES FOR  
OUR CHILDREN



- Reduced 68% of waste
- Recycled scrap material to fabricate feet









## 2016 NHC World Bloc Convention Wuhan, China







# Thank You!

