

# Production Planning to Improve Efficiency

How do we get from here?



To here?



# Production Planning to Improve Efficiency

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  - Should any discussion of these items take place, said participant will be asked to refrain immediately, disregarding any pursuant discussion, and should said party deny such request, the meeting will be immediately disbanded.
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# Production Planning to Improve Efficiency

Sometimes I think pushing a repair through a collision center is something like putting a bag into the security scanner at an airport.



You put the bag on the belt and hope it comes out the other end without some kind of complications.

# Production Planning to Improve Efficiency

*Thankfully* - there is another way.

Careful production planning can reduce the chaos of collision repair.

There are five key steps to repair production planning

1. Systematic damage appraisal inspection – itemizing all operations necessary to repair vehicle
2. Focus on all parts, materials and sublet identified on the damage appraisal
3. Validate available reference materials were used to capture repair process operations
4. Review damage appraisal with paint team leader to validate refinish requirements
5. Collaborate with the production coordinator, parts specialist and lead body technician for validation

# Production Planning to Improve Efficiency

Line	Oper	Description	Part Number	Qty	Extended Price \$	Labor	Paint
1		<b>FRONT DOOR</b>				0.5	0.0
2	*	Rpr LT Door shell (ALU) Note: WET SAND AND BUFF FOR GLASS SCRATCHES				1.5	1.8
3		<b>FENDER</b>					0.7
4	*	Rpr LT Fender (ALU) Note: DENTED AT WHEELWELL AND SCRATCHES FROM GLASS Add for Clear Coat				0.2	
5		RBI LT Ft fender liner				0.4	
6		RBI LT Rt fender liner fm VIN				0.1	
7		RBI LT Grille atlas				0.3	
8		<b>FRONT LAMPS</b>				0.3	
9		RBI LT Headlamp assy w/o adaptive headlamps w/o stealth plg				1.5	
10		Rpr LT Headlamp assy w/o adaptive headlamps w/o stealth plg				0.2	
11	*	Note: WET SAND AND BUFF LEFT HEADLAMP FOR GLASS SCRATCHES				0.3	
12		<b>FRONT BUMPER</b>					0.0
13		RBI bumper assy		1		m	
14		Repl Add for camera				1.0	
15		Repl Add for distance sens					
16	*	Rpr Lower cover atlas Note: WET SAND AND BUFF FOR GLASS SCRATCHES					
17	*	Rpr Bumper cover w/park assist w/camera Note: WET SAND AND BUFF FOR GLASS SCRATCHES. FRONT BLACK AREA OF BUMPER HAS SCRATCHES TRY TO REMOVE OR (OR REPAIR AND REFINISH OR MAY NEED BUMPER COVER	LR045048	1	90.21		0.1
18		Repl RT Trim bezel w/fog lamps atlas Note: SILVER TRIM CAN NOT BUFF OR REFINISH HAS GLASS SCRATCHES	LR045049	1	90.21		0.1
19		Repl LT Trim bezel w/fog lamps atlas Note: SILVER TRIM CAN NOT BUFF OR REFINISH HAS GLASS SCRATCHES	LR054765	1	478.59		Ind.
20		<b>GRILLE</b>					3.3
21	*	Repl Grille w/o SVR silver Note: SILVER TRIM GRILLE CAN NOT BUFF OR REFINISH HAS GLASS SCRATCHES				1.0	-0.4
22		RBI Nameplate					0.6
23	*	<b>HOOD</b>					0.2
24	*	Rpr Hood Note: SCRATCHES FROM GLASS ON FRONT AT NAMEPLATE AND LEFT SIDE Overlap Major Adj, Panel Add for Clear Coat	LR045915	1	72.44		0.2
25		RBI RT Vent atlas					0.2
26		RBI LT Vent atlas					0.2
27		Repl Nameplate "RANGE" silver					0.3
28							
29							

## Step 1 - Systematic damage appraisal inspection

Review the vehicle and damage appraisal

Was the vehicle completely disassembled?

Was all the damage identified?



# Production Planning to Improve Efficiency

## Step 2 - Focus on all parts, materials and sublet identified on the damage appraisal

Determine type of part to be used

- OEM
- Aftermarket
- Recycled

Verify accessory items

- Fasteners
- Decals, emblems & labels
- Seam sealers, corrosion protection and sound pads
- Pinstripes
  - Painted
  - Striping tape

Validate internal/external repairs

- Glass work
- Key coding
- Mechanical repairs
- Frame work

Line	Oper	Description	Part Number	Qty	Extended Price \$	Labor	Paint
1		<b>FRONT DOOR</b>					
2	*	Rpr LT Door shell (ALU) Note: WET SAND AND BUFF F/R GLASS SCRATCHES					
3		<b>FENDER</b>					
4	*	Rpr LT Fender (ALU) Note: DENTED AT WHEELWELL AND SCRATCHES FROM GLASS Add for Clear Coat					
5		R&I LT Ft fender liner					
6		R&I LT Rr fender liner fm VIN					
7		FAS25035					
8		R&I LT Grille atlas					
9		<b>FRONT LAMPS</b>					
10		R&I LT Headlamp assy w/o adaptive headlamps w/o stealth plg					
11	*	Rpr LT Headlamp assy w/o adaptive headlamps w/o stealth plg Note: WET SAND AND BUFF LEFT HEADLAMP F/R GLASS SCRATCHES					
12		<b>FRONT BUMPER</b>					
13		R&I R&I bumper assy				1.5	
14		Repl Add for camera		1		0.2	
15		Repl Add for distance sens		1	m	0.3	
16	*	Rpr Lower cover atlas				0.3	
17	*	Rpr Bumper cover w/park assist w/camera Note: WET SAND AND BUFF F/R GLASS SCRATCHES. FRONT BLACK AREA OF BUMPER HAS SCRATCHES TRY TO REMOVE OR OR REPAIR AND REFINISH OR MAY NEED BUMPER COVER				1.0	0.0
18		Repl RT Trim bezel w/fog lamps atlas	LR045048	1	90.21	0.1	
19		Repl LT Trim bezel w/fog lamps atlas	LR045049	1	90.21	0.1	
20		<b>GRILLE</b>					
21		Repl Grille w/o SVR silver	LR054765	1	478.59	Incl.	
22	*	R&I Nameplate Note: SILVER TRIM GRILLE CAN NOT BUFF OR REFINISH HAS GLASS SCRATCHES					
23		<b>HOOD</b>					
24	*	Rpr Hood Note: SCRATCHES FROM GLASS ON FRONT AT NAMEPLATE AND LEFT SIDE Overlap Major Adj. Panel Add for Clear Coat				1.0	3.3
25		R&I RT Vent atlas					-0.4
26		R&I LT Vent atlas					0.6
27		R&I RT Vent atlas					0.2
28		R&I LT Vent atlas					0.2
29		Repl Nameplate "RANGE" silver	LR045915	1	72.44		0.3

A great time to find anything that might cause a delay

# Production Planning to Improve Efficiency

## Step 3 - Validate reference materials were used to capture repair process operations

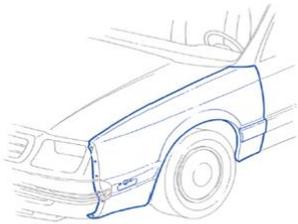
### FENDER - OUTER PANEL

#### INCLUDED:

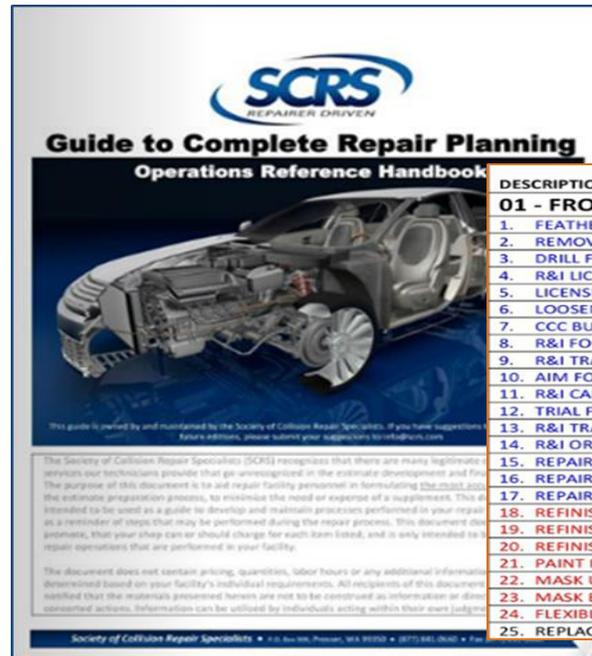
- Align to vehicle
- Fillers (if mounted to fender)
- Cornering lamps (if mounted to fender)
- Fender liner
- Scoop
- Side marker
- Side repeater lamp (if mounted to fender)

#### DOES NOT INCLUDE:

- Antenna
- Bumper R&I
- Battery
- Emblems & nameplates
- Grille
- Header panel
- Hood
- Inner panels
- Lamp aiming
- Mirror
- Moldings
- Mud guard
- Road wheel
- Spoilers & flares
- Stripe tape, decals or overlays



- P-Pages
- Alldata
- Parts code tables
- Vehicle manufacturer repair specifications
- Refinish procedures



#### DESCRIPTION

#### 01 - FRONT AND REAR BUMPERS:

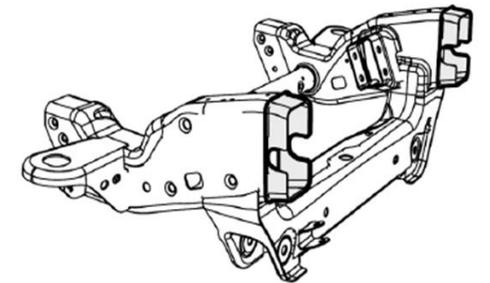
1. FEATHERFILL, SAND AND BLOCK REPAIR AREA
2. REMOVE BUMPER MOLDING ADHESIVE
3. DRILL FOR LICENSE PLATE
4. R&I LICENSE PLATE
5. LICENSE PLATE, REPAIR
6. LOOSEN/PULL BACK BUMPER COVER
7. CCC BUMPER PROMPT \*ADD BACK OVERLAP + CLEAR\*
8. R&I FOG LAMPS
9. R&I TRAILER HITCH (ON BUMPER)
10. AIM FOG LAMPS
11. R&I CAMERA AND WIRING
12. TRIAL FIT BUMPER
13. R&I TRAILER HITCH (FRAME BOLT-ON TYPE)
14. R&I OR R&R SENSORS (SRS-AMBEINT TEMP- ETC)
15. REPAIR BUMPER BRACKET AND/OR OTHER COMPONENTS
16. REPAIR BUMPER BRACKET MOUNT AREA
17. REPAIR ELECTRICAL WIRING TO LAMP LIGHTS
18. REFINISH O.E.M "RAW" BUMPER
19. REFINISH, SECOND COLOR ON BUMPER COVER
20. REFINISH, BLACK-OUT ON BUMPER COVER
21. PAINT PREP & CLEAN UP USED BUMPER
22. MASK UNPAINTED AREAS ON BUMPER COVER
23. MASK BUMPER COVER FOR PRIMER APPLICATION
24. FLEXIBLE PARTS ADHESION PROMOTOR APPLICATION
25. REPLACE MINI BULBS

### Front Full Frame Sectioning (Heavy Duty)

#### Removal Procedure

If damage permits a pre-sleeved replacement front frame service section has been developed as a cost-effective alternative to complete frame replacement. This procedure is for the heavy duty pick-up front frame service section.

**WARNING:** Refer to [Approved Equipment for Collision Repair Warning](#).



**WARNING:** Refer to [Collision Sectioning Warning](#).

**NOTE:** Perform all of the steps on both of the rails for complete module replacement.

1. Disable the SIR system. Refer to [SIR Disabling and Enabling](#).
2. Disconnect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#).
3. Remove all of the related panels and components.

It is critical to capture all operations at this stage

# Production Planning to Improve Efficiency

## Step 4 - Review damage appraisal with paint team to validate refinish requirements

Line	Oper	Description	Part Number	Qty	Extended Price \$	Labor	Paint
1	Rpr	LT Door shell (ALU)				0.5	0.0
2	*	Note: WET SAND AND BUFF FOR GLASS SCRATCHES				1.5	1.8
3	Rpr	LT Fender (ALU)				0.2	
4	*	Note: DENTED AT WHEELWELL AND SCRATCHES FROM GLASS				0.4	
5	Rpr	Add for Clear Coat				0.1	
6	RBI	LT Ft fender liner					
7	RBI	LT Rt fender liner fm VIN					
8	RBI	LT Grille atlas				0.3	
9	RBI	LT Headlamp assy w/o adaptive				0.2	
10	RBI	headlamps w/o stealth pkg					
11	*	Note: WET SAND AND BUFF LEFT HEADLAMP FOR GLASS SCRATCHES				1.5	
12	RBI	FRONT BUMPER		1	m	0.2	
13	Rpr	RBI bumper assy		1		0.3	
14	Rpr	Add for camera					0.0
15	Rpr	Add for distance sens				1.0	
16	*	Note: WET SAND AND BUFF FOR GLASS SCRATCHES					
17	Rpr	Lower cover atlas					
18	Rpr	Bumper cover w/park assist					
19	*	Note: WET SAND AND BUFF FOR GLASS SCRATCHES. FRONT BLACK AREA OF BUMPER HAS SCRATCHES TRY TO REMOVE OR OR REPAIR AND REFINISH OR MAY NEED BUMPER COVER	LR045048	1	90.21	0.1	
20	Rpr	RT Trim bezel w/fog lamps atlas	LR045049	1	90.21	0.1	
21	Rpr	Note: SILVER TRIM CAN NOT BUFF OR REFINISH HAS GLASS SCRATCHES					
22	Rpr	LT Trim bezel w/fog lamps atlas					
23	Rpr	Note: SILVER TRIM CAN NOT BUFF OR REFINISH HAS GLASS SCRATCHES					
24	Rpr	Grille w/o SVR silver	LR054765	1	478.59	Incl.	
25	Rpr	Note: SILVER TRIM GRILLE CAN NOT BUFF OR REFINISH HAS GLASS SCRATCHES					
26	RBI	Nameplate				1.0	
27	*						0.6
28	Rpr	Hood				0.2	
29	*	Note: SCRATCHES FROM GLASS ON FRONT AT NAMEPLATE AND LEFT SIDE				0.2	
30	Rpr	Overlap Major Adj. Panel				0.2	
31	Rpr	Add for Clear Coat				0.3	
32	RBI	RT Vent atlas	LR045915	1	72.44		
33	RBI	LT Vent atlas					
34	Rpr	Nameplate "RANGE" silver					

	Color Code: 17/WA636R/GAN Switchblade Silver Pearl
	Color Code: 28/WA502Q/GCR Inferno Orange Metallic
	Color Code: 34/WA9414/GCO Yellow
	Color Code: 37U/WA403P Imperial Blue Metallic
	Color Code: 41/WA8555/GBA Black
	Color Code: 50/WA8624/GAZ Olympic White
	Color Code: 57U/WA637R/GBV Cyber Gray Metallic
	Color Code: 58/WA501Q/GAR Carbon Flash Metallic
	Color Code: 74/WA9260/GCN Victory Red
	Color Code: 89/WA505Q/GBE Crystal Claret Pearl Tricoat

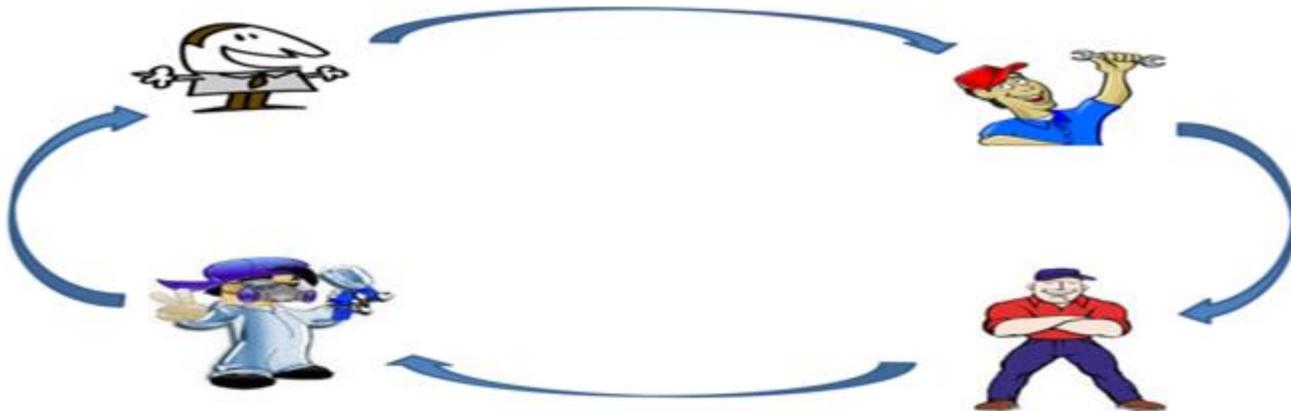
- Determine paint code
- Validate blend areas
- Verify refinish process
  - Single stage
  - Base/clear
  - Tri-Stage
  - Four-Stage
  - Matte finishes



# Production Planning to Improve Efficiency

Step 5 - Collaborate with the production coordinator, parts specialist and repair team to validate repair

- Should be a quick discussion
- Discuss repair vs replace decisions
- Determine what process should begin first
- Verify parts availability
- And the big question – Was Anything Missed



Line	Oper	Description	Part Number	Qty	Extended Price \$	Labor	Paint
1		<b>FRONT DOOR</b>				0.5	0.0
2	*	Rpr LT Door shell (ALU) Note: WET SAND AND BUFF FOR GLASS SCRATCHES					
3		<b>FENDER</b>				1.5	1.8
4	*	Rpr LT Fender (ALU) Note: DENTED AT WHEELWELL AND SCRATCHES FROM GLASS					0.7
5		Add for Clear Coat				0.2	
6		R&I LT Ft fender liner				0.4	
7		R&I LT Rr fender liner fm VIN FAS25035					
8		R&I LT Grille atlas				0.1	
9		<b>FRONT LAMPS</b>				0.3	
10		R&I LT Headlamp assy w/o adaptive headlamps w/o stealth pkg					
11	*	Rpr LT Headlamp assy w/o adaptive headlamps w/o stealth pkg Note: WET SAND AND BUFF LEFT HEADLAMP FOR GLASS SCRATCHES				0.3	
12		<b>FRONT BUMPER</b>				1.5	
13		R&I R&I bumper assy				0.2	
14		Repl Add for camera		1		0.3	
15		Repl Add for distance sens		1	m		
16	*	Rpr Lower cover atlas Note: WET SAND AND BUFF FOR GLASS SCRATCHES				0.3	
17	*	Rpr Bumper cover w/park assist w/camera Note: WET SAND AND BUFF FOR GLASS SCRATCHES. FRONT BLACK AREA OF BUMPER HAS SCRATCHES TRY TO REMOVE OR OR REPAIR AND REFINISH OR MAY NEED BUMPER COVER				1.0	0.0
18		Repl RT Trim bezel w/fog lamps atlas Note: SILVER TRIM CAN NOT BUFF OR REFINISH HAS GLASS SCRATCHES	LR045048	1	90.21	0.1	
19		Repl LT Trim bezel w/fog lamps atlas Note: SILVER TRIM CAN NOT BUFF OR REFINISH HAS GLASS SCRATCHES	LR045049	1	90.21	0.1	
20		<b>GRILLE</b>					
21		Repl Grille w/o SVR silver Note: SILVER TRIM GRILLE CAN NOT BUFF OR REFINISH HAS GLASS SCRATCHES	LR054765	1	478.59	Incl.	
22	*	R&I Nameplate					
23		<b>HOOD</b>				Incl.	
24	*	Rpr Hood Note: SCRATCHES FROM GLASS ON FRONT AT NAMEPLATE AND LEFT SIDE Overlap Major Adj. Panel				1.0	3.3
25		Add for Clear Coat					
26		R&I RT Vent atlas				-0.4	
27		R&I LT Vent atlas				0.2	0.6
28		R&I Nameplate "RANGE" silver				0.2	
29			LR045915	1	72.44	0.3	



# Production Planning to Improve Efficiency

Line	Oper	Description	Part Number	Qty	Extended Price \$	Labor	Paint
1		<b>ROOF</b>					
2	R&I	RT Roof molding hatchback				0.4	
3		<b>PILLARS, ROCKER &amp; FLOOR</b>					
4	*	Blnd RT Aperture panel-Upper rail					0.9
5	R&I	RT Rocker molding w/o ST				0.9	
6		<b>FRONT DOOR</b>					
7	Blnd	RT Outer panel					1.5
8	R&I	RT Belt w'strip w/o chrome Note: LABOR: Time is after door glass is removed.				0.2	
9	R&I	RT R&I mirror				0.3	
10	R&I	RT Door glass Ford				0.6	
11	R&I	RT Handle, outside primed w/o passive entry				0.4	
12	R&I	RT R&I trim panel				0.5	
13		<b>REAR DOOR</b>					
14	* Repl	LKQ RT door assy +25% Add for Three Stage	DMSZ5824630C	1	337.50	1.6	3.1
15							2.2
16	* R&I	RT Applique front				0.2	
17	R&I	RT Belt w'strip black Note: LABOR: Time is after door glass is removed.				0.2	
18	* R&I	RT Applique rear				0.2	
19	R&I	RT Door glass Ford				0.4	
20	R&I	RT Handle, outside primed w/o passive				0.4	
21	R&I	RT Latch assy w/o passive entry				0.5	
22	R&I	RT Door w'strip				0.6	
23		<b>QUARTER PANEL</b>					
24	* Rpr	RT Quarter panel w/o RS Overlap Major Adj. Panel Add for Three Stage				12.0	2.2
25							-0.4
26							0.7
27	# Rpr	Align rt quarter for repair				2.0	
28	Repl	RT Stone guard	BMSZ5420000A	1	18.45	0.2	
29	R&I	RT Qtr glass Ford black molding				1.3	
30	R&I	RT Splash shield w/o RS				0.3	
31	R&I	RT Upper qtr trim w/o RS from 12/08/2014				0.2	
32	R&I	Fuel door				0.1	
33	* Rpr	Fuel door Add for Three Stage				0.5	0.3
34							0.1
35		<b>REAR LAMPS</b>					
36	R&I	RT Tail lamp assy w/o LED from 03/26/2015				0.3	
37	R&I	LT Tail lamp assy w/o LED from 03/26/2015				0.3	
38		<b>REAR BUMPER</b>					
39		O/H rear bumper				1.6	
40	R&I	R&I bumper cover Note: Time is after tail lamps are removed. This part is eligible for a Core Charge. Part Price does not include the Core Charge.				Incl.	
41	* <>	Rpr Bumper cover				2.0	2.6
42		Overlap Major Non-Adj. Panel					-0.2
43		Add for Three Stage					1.0
44	#	basecoat reduction		1			-0.6
45	* R&I	Valance w/o skirt				Incl.	
46	R&I	RT Reflector				Incl.	
47	R&I	LT Reflector				Incl.	
48	Repl	Add for park sensor		1	m	0.4	

Review the steps needed to complete this repair per the estimate

1. Blend R/F door
2. Repl recycled R/R door
3. Rep RT Quarter panel
4. Align RT Quarter panel
5. Repair rear bumper
6. Add for park sensors
7. R&I Quarter glass
8. Blend Aperture panel - upper rail
9. Corrosion protection

# Production Planning to Improve Efficiency

Line	Oper	Description	Part Number	Qty	Extended Price \$	Labor	Paint
1	<b>ROOF</b>						
2	R&I	RT Roof molding hatchback				0.4	
3	<b>PILLARS, ROCKER &amp; FLOOR</b>						
4	*	Blnd RT Aperture panel-Upper rail					0.9
5	R&I	RT Rocker molding w/o ST				0.9	
6	<b>FRONT DOOR</b>						
7	Blnd	RT Outer panel					1.5
8	R&I	RT Belt w/strip w/o chrome Note: LABOR: Time is after door glass is removed.				0.2	
9	R&I	RT R&I mirror				0.3	
10	R&I	RT Door glass Ford				0.6	
11	R&I	RT Handle, outside primed w/o passive entry				0.4	
12	R&I	RT R&I trim panel				0.5	
13	<b>REAR DOOR</b>						
14	*	Repl LKQ RT door assy +25% Add for Three Stage	DMSZ5824630C	1	337.50	1.6	3.1
15							2.2
16	*	R&I RT Applique front				0.2	
17	R&I	RT Belt w/strip black Note: LABOR: Time is after door glass is removed.				0.2	
18	*	R&I RT Applique rear				0.2	
19	R&I	RT Door glass Ford				0.4	
20	R&I	RT Handle, outside primed w/o passive				0.4	
21	R&I	RT Latch assy w/o passive entry				0.5	
22	R&I	RT Door w/strip				0.6	
23	<b>QUARTER PANEL</b>						
24	*	Rpr RT Quarter panel w/o RS Overlap Major Adj. Panel Add for Three Stage				12.0	2.2
25							-0.4
26							0.7
27	#	Rpr Align rt quarter for repair				2.0	
28	Repl	RT Stone guard	BMSZ5420000A	1	18.45	0.2	
29	R&I	RT Qtr glass Ford black molding				1.3	
30	R&I	RT Splash shield w/o RS				0.3	
31	R&I	RT Upper qtr trim w/o RS from 12/08/2014				0.2	
32	R&I	Fuel door				0.1	
33	*	Rpr Fuel door				0.5	0.3
34		Add for Three Stage					0.1
35	<b>REAR LAMPS</b>						
36	R&I	RT Tail lamp assy w/o LED from 03/26/2015				0.3	
37	R&I	LT Tail lamp assy w/o LED from 03/26/2015				0.3	
38	<b>REAR BUMPER</b>						
39		O/H rear bumper				1.6	
40	R&I	R&I bumper cover Note: Time is after tail lamps are removed. This part is eligible for a Core Charge. Part Price does not include the Core Charge.				Incl.	
41	*	Rpr Bumper cover				2.0	2.6
42		Overlap Major Non-Adj. Panel					-0.2
43		Add for Three Stage					1.0
44	#	basecoat reduction		1			-0.6
45	*	R&I Valance w/o skirt				Incl.	
46	R&I	RT Reflector				Incl.	
47	R&I	LT Reflector				Incl.	
48	Repl	Add for park sensor		1	m	0.4	

Review the steps according to the 5 planning steps

1. Blend R/F door
2. Replace R/R door – recycled
  - Step 4 – painted off the car?
3. Repair RT Quarter panel
4. Align RT Quarter panel
5. Repair rear bumper
6. Add for park sensors
  - Step 1 - calibration
7. R&I Quarter glass
  - Step 1 – two separate operations
    - Removal
    - Reinstallation
  - Step 2 – Internal or external
8. Blend Aperture panel – upper rail
9. Corrosion protection
  - Step 1 – what type

# Production Planning to Improve Efficiency

Line	Oper	Description	Part Number	Qty	Extended Price \$	Labor	Paint
1	<b>ROOF</b>						
2	R&I	RT Roof molding hatchback				0.4	
3	<b>PILLARS, ROCKER &amp; FLOOR</b>						
4	*	Blnd RT Aperture panel-Upper rail					0.9
5	R&I	RT Rocker molding w/o ST				0.9	
6	<b>FRONT DOOR</b>						
7	Blnd	RT Outer panel					1.5
8	R&I	RT Belt w/strip w/o chrome Note: LABOR: Time is after door glass is removed.				0.2	
9	R&I	RT R&I mirror				0.3	
10	R&I	RT Door glass Ford				0.6	
11	R&I	RT Handle, outside primed w/o passive entry				0.4	
12	R&I	RT R&I trim panel				0.5	
13	<b>REAR DOOR</b>						
14	*	Repl LKQ RT door assy +25% Add for Three Stage	DMSZ5824630C	1	337.50	1.6	3.1
15							2.2
16	*	R&I RT Applique front				0.2	
17	R&I	RT Belt w/strip black Note: LABOR: Time is after door glass is removed.				0.2	
18	*	R&I RT Applique rear				0.2	
19	R&I	RT Door glass Ford				0.4	
20	R&I	RT Handle, outside primed w/o passive				0.4	
21	R&I	RT Latch assy w/o passive entry				0.5	
22	R&I	RT Door w/strip				0.6	
23	<b>QUARTER PANEL</b>						
24	*	Rpr RT Quarter panel w/o RS Overlap Major Adj. Panel Add for Three Stage				12.0	2.2
25							-0.4
26							0.7
27	#	Rpr Align rt quarter for repair				2.0	
28	Repl	RT Stone guard	BMSZ5420000A	1	18.45	0.2	
29	R&I	RT Qtr glass Ford black molding				1.3	
30	R&I	RT Splash shield w/o RS				0.3	
31	R&I	RT Upper qtr trim w/o RS from 12/08/2014				0.2	
32	R&I	Fuel door				0.1	
33	*	Rpr Fuel door				0.5	0.3
34		Add for Three Stage					0.1
35	<b>REAR LAMPS</b>						
36	R&I	RT Tail lamp assy w/o LED from 03/26/2015				0.3	
37	R&I	LT Tail lamp assy w/o LED from 03/26/2015				0.3	
38	<b>REAR BUMPER</b>						
39		O/H rear bumper				1.6	
40	R&I	R&I bumper cover Note: Time is after tail lamps are removed. This part is eligible for a Core Charge. Part Price does not include the Core Charge.				Incl.	
41	*	Rpr Bumper cover				2.0	2.6
42		Overlap Major Non-Adj. Panel					-0.2
43		Add for Three Stage					1.0
44	#	basecoat reduction		1			-0.6
45	*	R&I Valance w/o skirt				Incl.	
46	R&I	RT Reflector				Incl.	
47	R&I	LT Reflector				Incl.	
48	Repl	Add for park sensor		1	m	0.4	

## Validating the repair process

1. Blend R/F door
2. Replace R/R door - recycled
  - Step 4 - painted off the car = verified
3. Repair RT Quarter panel
4. Align RT Quarter panel
5. Repair rear bumper
6. Add for park sensors
  - Step 1 - calibration = required
7. R&I Quarter glass
  - Step 1 - two separate operations
    - Removal
    - Reinstallation
  - Step 2 - Internal or external = verified external
8. Blend Aperture panel - upper rail
9. Corrosion protection
  - Step 1 - what type = verified cavity wax and e-coating

# Production Planning to Improve Efficiency

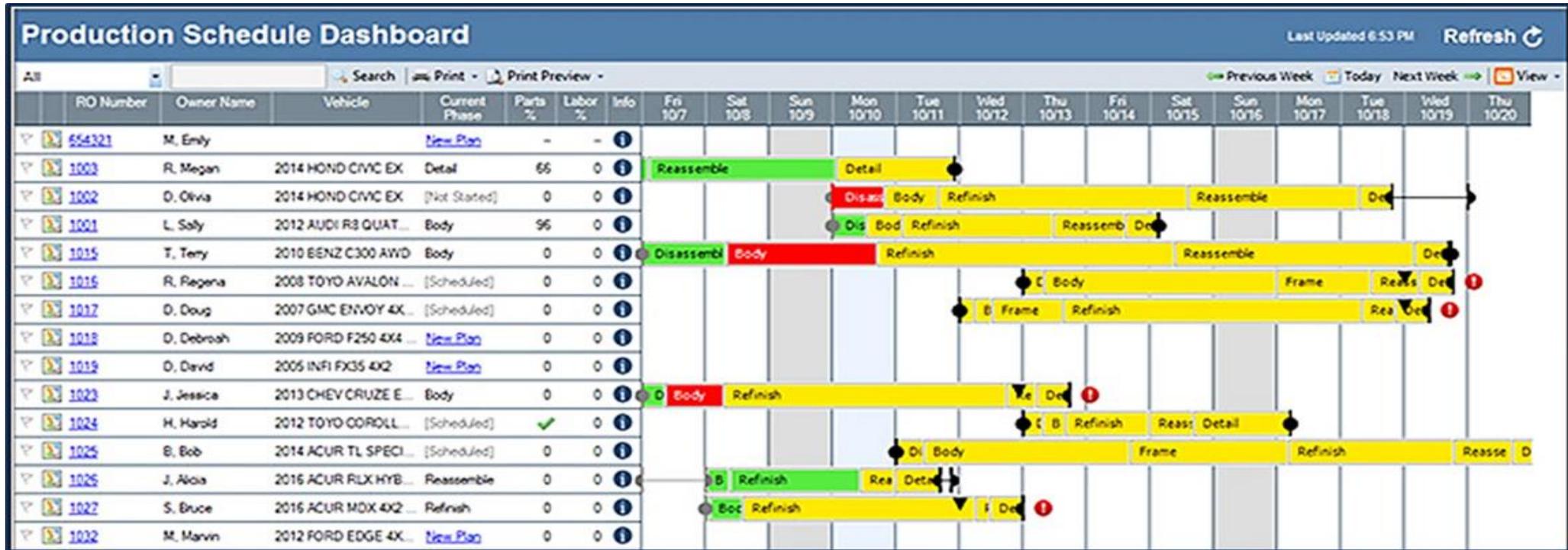
## Determining the repair process steps

1. Blend R/F door
2. Replace R/R door - recycled
  - Step 4 - painted off the car = verified
3. Repair RT Quarter panel
4. Align RT Quarter panel
5. Repair rear bumper
6. Add for park sensors
  - Step 1 - calibration = required
7. R&I Quarter glass
  - Step 1 - two separate operations
    - Removal
    - Reinstallation
  - Step 2 - Internal or external = verified external
8. Blend Aperture panel - upper rail
9. Corrosion protection
  - Step 1 - what type = verified cavity wax and e-coating

1. Remove quarter glass
2. Align RT quarter panel
3. Repair RT quarter panel
4. Repair Rear bumper
5. Refinish operations
  - a. Blend R/F door
  - b. Refinish R/R door
  - c. Refinish rear bumper
  - d. Blend aperture panel
6. Reinstall quarter glass
7. Reassembly operations
8. Apply corrosion protection
  - a. Cavity wax
  - b. E-coating
9. Calibrate park sensors



# Production Planning to Improve Efficiency



Having an accurate repair plan will allow you to create timelines for each step, monitor the progression, and allow all involved to understand what needs to be done when.

# Production Planning to Improve Efficiency

Having a solid repair production plan allowing to you keep your customers properly informed is the first step in having them completely satisfied when the job is complete



# Production Planning to Improve Efficiency

A quote from Glen B. Alleman says it best

“A plan is the strategy for the successful completion of a project  
any project with out a plan is a project wandering in the wilderness”



# Production Planning to Improve Efficiency

Thank You!

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