

# Top Brush

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## TR Manual



## Owner's Manual

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### APPLICATION BRIEFING

The AVW Top Brush is designed to clean hoods, windshields and roofs of vehicles. It is floor mounted on either driver or passenger side for easy installation. The Dual Top Brush works in the same amount of space as the single except cleaning is enhanced with rotating the brush in the opposite direction.

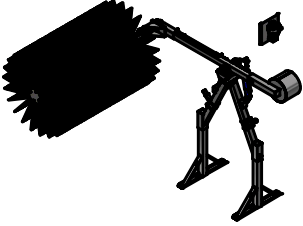
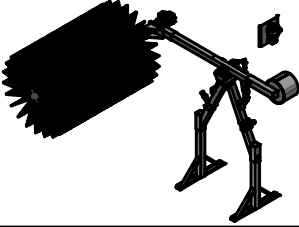
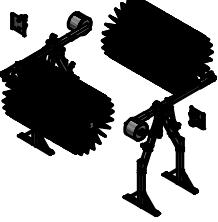
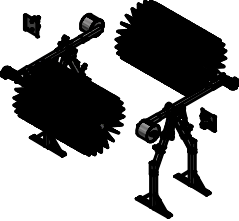
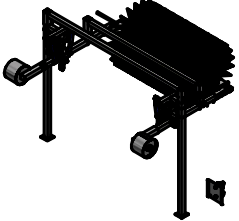
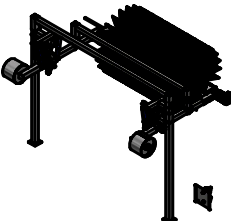
- Stainless steel construction
- Pneumatic controls
- Side floor mounting
- Foam material



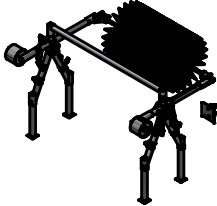
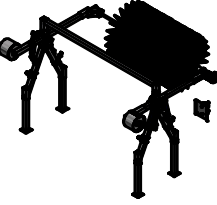
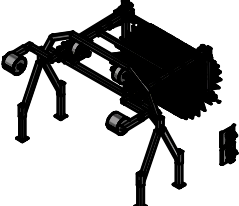
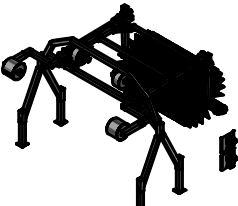
Specifications	
Description	Value(s)
EQUIPMENT WIDTH	*130" to 183"
EQUIPMENT LENGTH	*142" to 160"
STANDARD ROTATION SPEED	80 RPM
-----HYDRAULIC MOTOR-----	
PORT SIZE	1/2" NPT
FLOW REQUIRED	Approximately 1.67 GPM
MAX PRESSURE	1100 PSI
-----ELECTRIC MOTOR-----	
POWER	1.5 HP
VOLTAGE	230/460
CURRENT	4.60/2.30
GEARBOX	22.32:1 Ratio
-----AIR CYLINDER-----	
STANDARD OPERATING PRESSURE	25 - 30 PSI (Adjust if necessary)
MAX STROKE LENGTH	3 Inches
STROKE ANGLE	-20° TO 20°

\*Check Configuration Dimension Pages for Respective Values

Note: Brushes are sold separately

CONFIGURATIONS				
Model	Part Number	Description	ID	Page No.
	TR1105	Top Brush with Air Assist Panel, Hydraulic Drive	A	11-16
	TR1105-EL	Top Brush with Air Assist Panel, Electric Drive	B	11-15
	2TR1105	Dual Top Brush with Air Assist Panels, Hydraulic Drive	C	11-16
	2TR1105-EL	Dual Top Brush with Air Assist Panels, Electric Drive	D	11-15
	TR3	Rack Mounted Kaady Dual Arm Top Brush, Hydraulic Drive	E	17-23
	TR3-EL	Rack Mounted Kaady Dual Arm Top Brush, Electric Drive	F	17-23

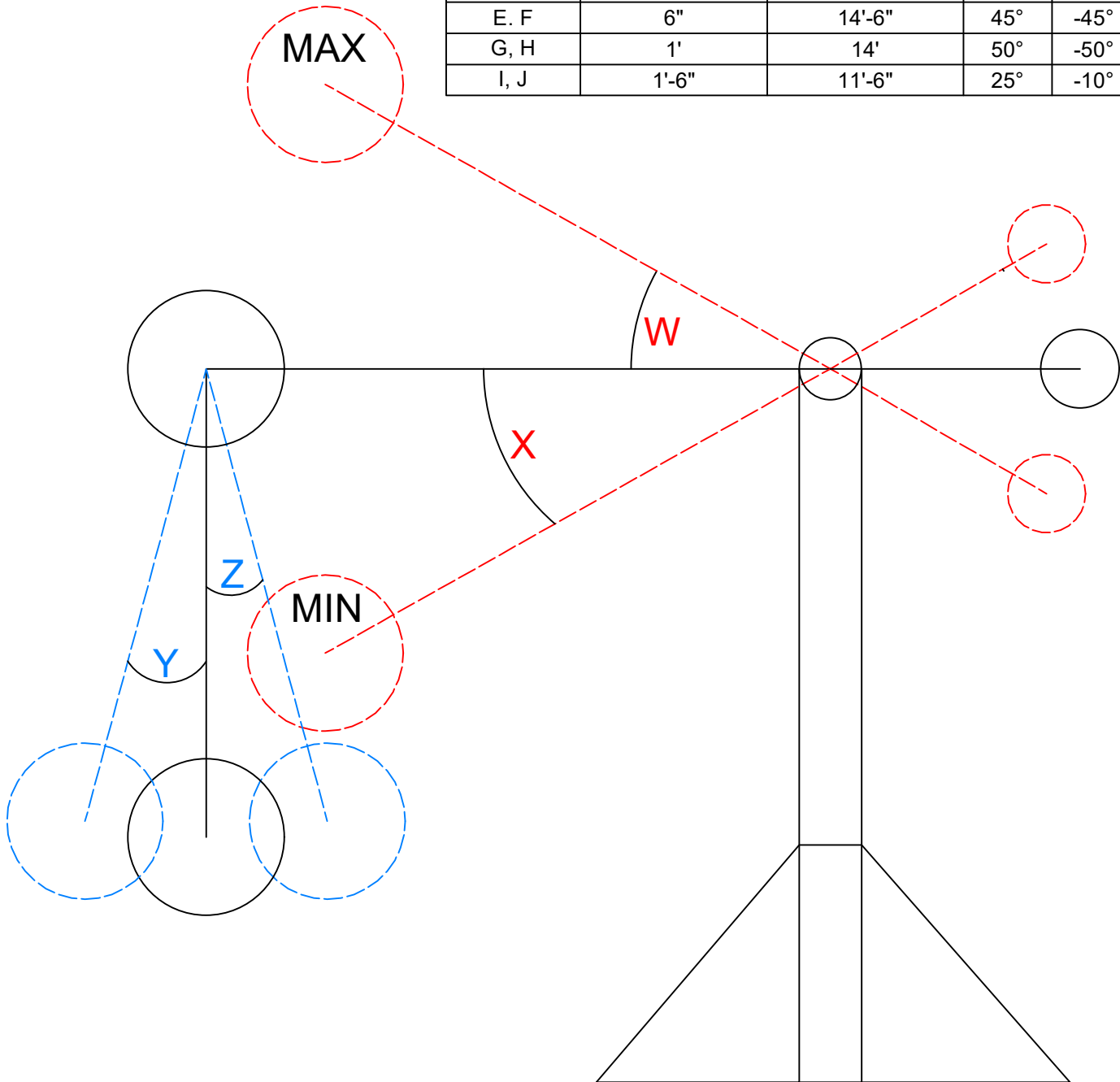
Note: Brushes are sold separately

CONFIGURATIONS				
Model	Part Number	Description	ID	Page No.
	TR4	Free Standing Dual Arm Top Brush with Air Assist Panel, Hydraulic Drive	G	24-27
	TR4-EL	Free Standing Dual Arm Top Brush with Air Assist Panel, Electric Drive	H	24-27
	OT2-TR5	TopFlex Top Brush with Air Assist Panels, Hydraulic Drive  *Available Upon Request	I	N/A
	OT2-TR5-EL	TopFlex Top Brush with Air Assist Panels, Electric Drive	J	28-34

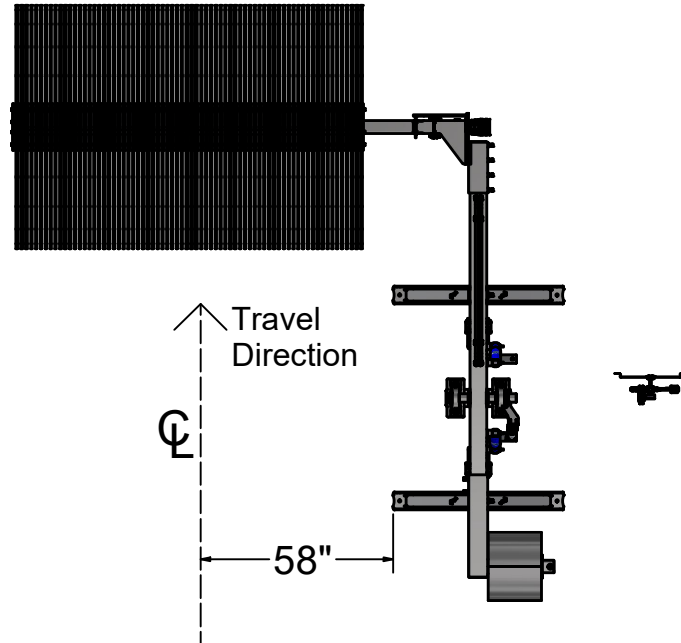


### Equipment Range of Motion & Heights:

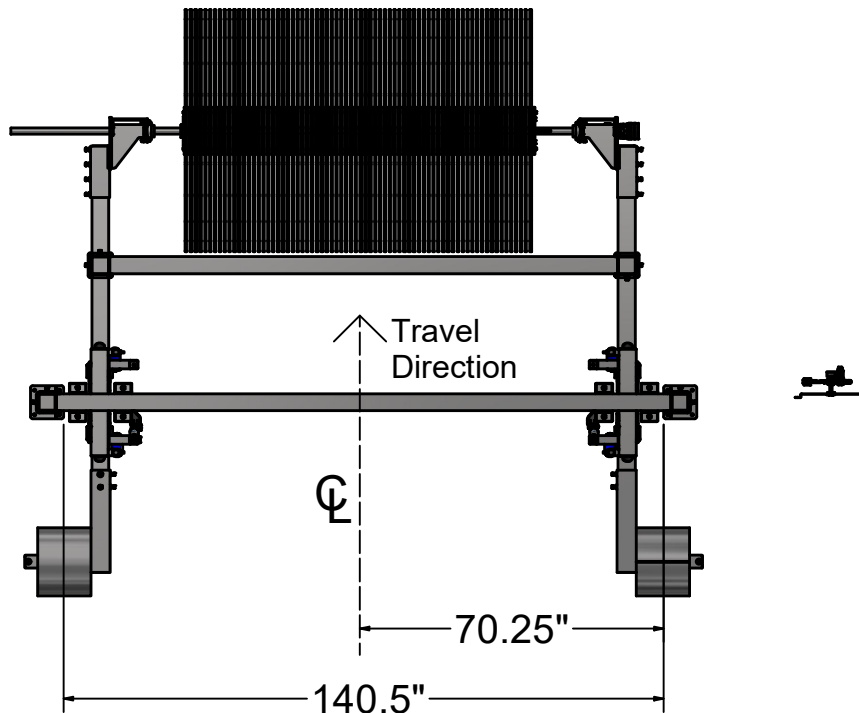
Specifications						
ID	Height with Brush (MIN)	Height with Brush (MAX)	W	X	Y	Z
A, B, C, D	1'	14'	50°	-50°		
E, F	6"	14'-6"	45°	-45°		
G, H	1'	14'	50°	-50°		
I, J	1'-6"	11'-6"	25°	-10°	35°	-20°



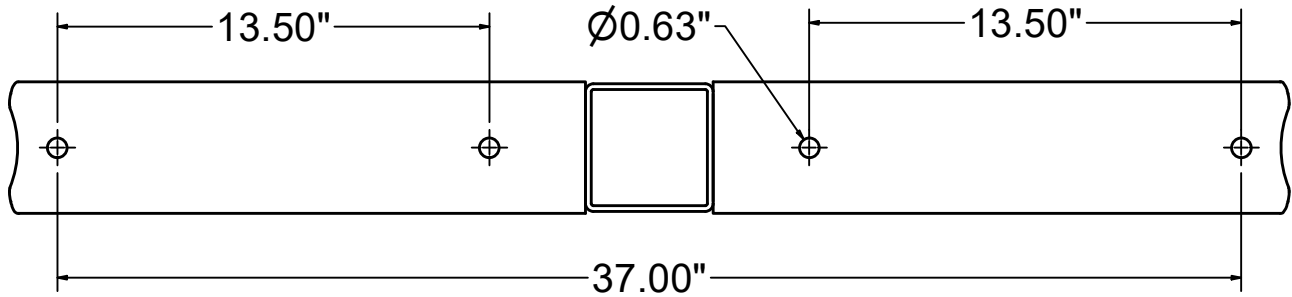
### CONFIGURATIONS: A, B, C, D



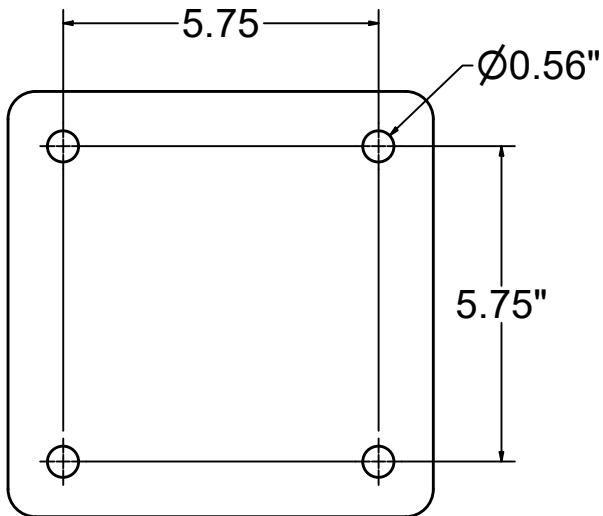
### CONFIGURATIONS: E, F, G, H, I, J



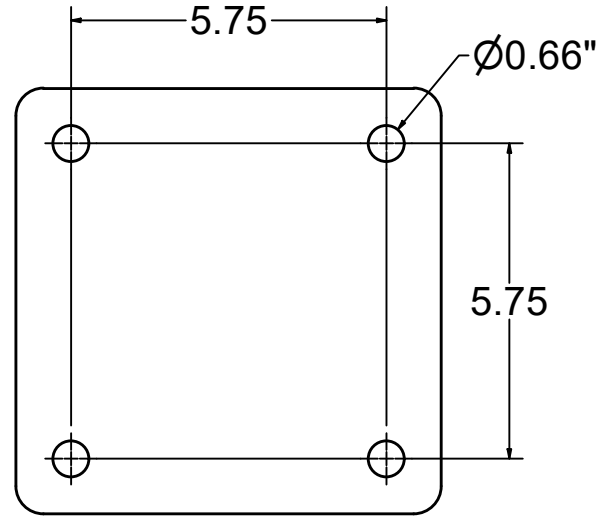
**MOUNTING:**



Configurations: A, B, C, D



Configurations: E, F



Configurations: G, H, I, J

### INSTALLATION:

- 1.) Find the centerline of the tunnel:
  - a.) With Dual Belt Conveyor configurations, find the overall width of the belt conveyor section and halve it to find the tunnel centerline.
  - b.) With Chain Conveyor configurations, measure 28" out from the right-most inside rail of the chain conveyor to find the tunnel centerline.
- 2.) After the centerline has been identified, use Page 7 of the TR Manual to determine where the mounting locations should be for the Top Brush.
- 3.) For all configurations, use 1/2" x 4" expansion wedge concrete anchors.  
Pre-drill the concrete all the way through for draining purposes.  
(Use anchor manufacturer pre-drill size and torque recommendations)
- 4.) When assembling the remaining components, use Anti-sieze and the appropriate torque specs provided in the table below.

TORQUE TABLE Apply to all fasteners, unless specified otherwise. +/- 10% tolerance			
Nom Dia	Threads per Inch	Torque (in-lbs)	Torque (ft-lbs)
2	56	2.5	-
4	40	5.4	-
5	40	8.0	-
6	32	10.0	-
8	32	18.4	-
10	24	26.6	-
1/4	20	63.6	-
5/16	18	131	-
3/8	16	-	19.4
7/16	14	-	31.0
1/2	13	-	47.0
5/8	11	-	94.0
3/4	10	-	125.0
7/8	9	-	202.0
1	8	-	303.0

### **INSTALLATION:**

#### 5.) For Hydraulics:

a.) If you have a variable displacement pump from a competitor:

- Set the operating pressure in the 400 - 600psi range and adjust it based on the desired torque settings. The brush should stop rotating if it's caught.

b.) If you have a constant displacement pump from AVW Equipment:

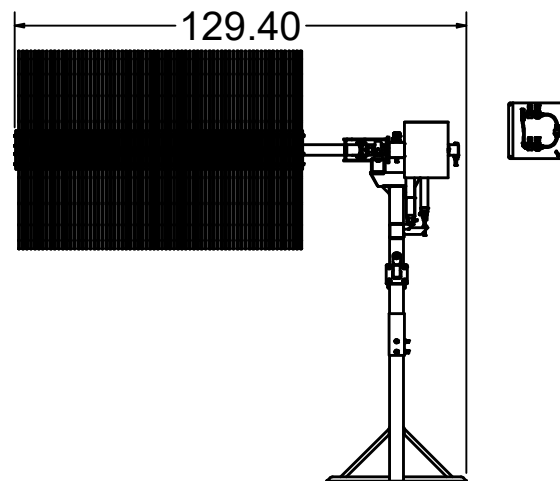
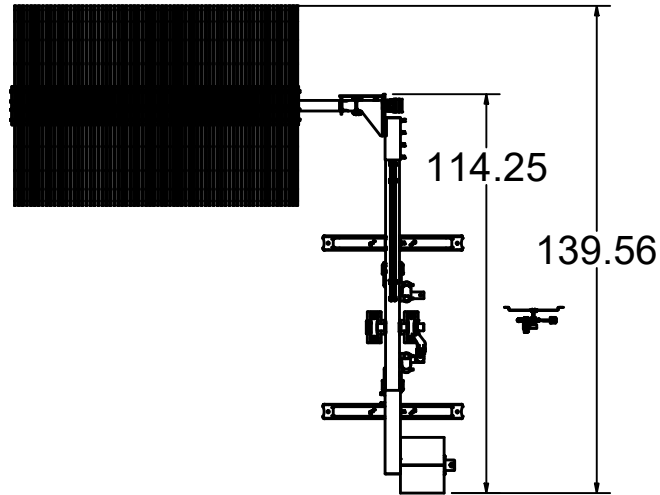
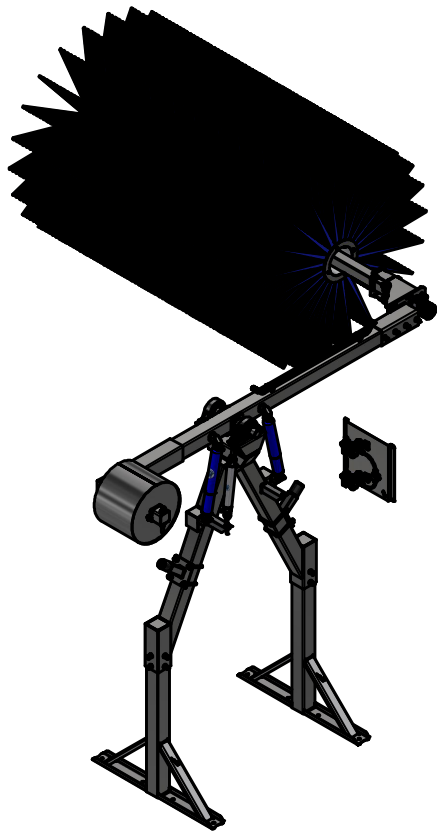
- Adjust the flow until the desired rotation speed is reached. It's optional to set the pneumatic retract cylinder to a value within 50 - 60psi.

6.) Assure that the rotation of the brushes turn against the vehicle passing through on the conveyor.

7.) When installing the hydraulic line assure that the lines are tight, but not touching. There should be enough slack for a full range of motion.

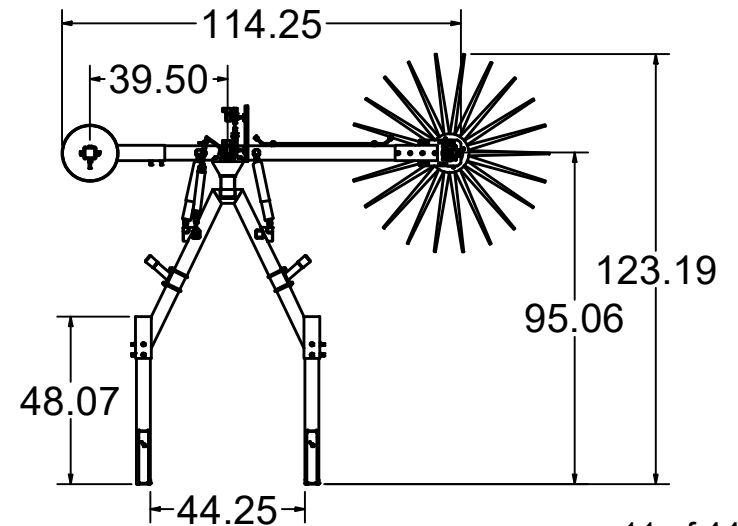
### **MAINTENANCE:**

- 1.) Oil change frequency: Once per year
- 2.) Bearing lubrication frequency: Once per month  
\*Grease should not protrude externally
- 3.) Brush replacements: Start by checking the diameter after 6 months of operating. The diameter of the brush will decrease with use over time due to wear and tear. Brush replacements should be completed when the brush is no longer effective in cleaning. Document the final brush diameter and adjust the maintenance/inspection schedule as necessary.
- 4.) Shock absorbers: Check your shock absorbers on a monthly basis. Start by completely depressurizing the air panel for the Top Brush air cylinders. Push the Top Brush arm up. The shock absorber counteracting the upward movement should not be moved easily. If the arm moves easily, this is a good indication that the gas contained inside may be low and that the absorber will need to be replaced. Repeat the process for the downward movement.
- 5.) Air cylinders: Check your air cylinders on a monthly basis. Start by initiating the retract position and listening for a hissing sound. If a hissing sound can be heard, an air leak is present in either the hose connection or the O-ring seals. To test the hose connection pull lightly on the air hoses. They should be snug inside the push-to-connect fittings and shouldn't budge.

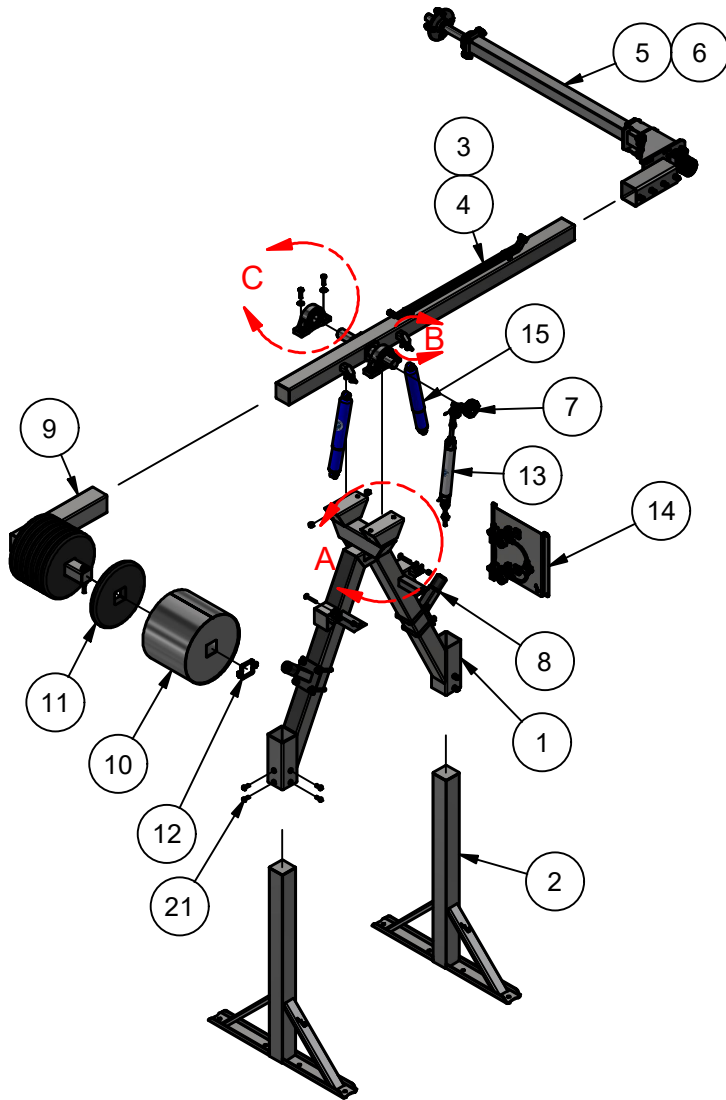


### Top Brush Configurations A, B, C, D

Note: Brush is sold separately

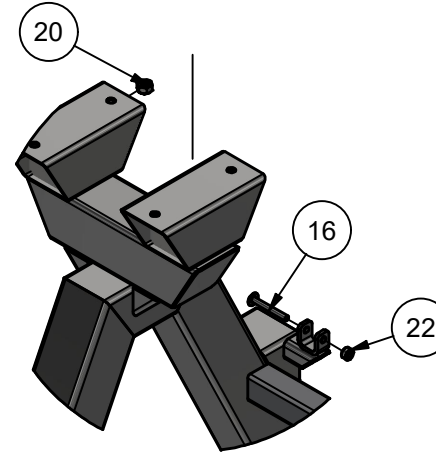




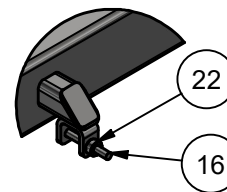


### Top Brush Configurations A, B, C, D

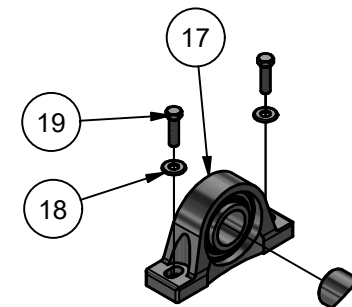
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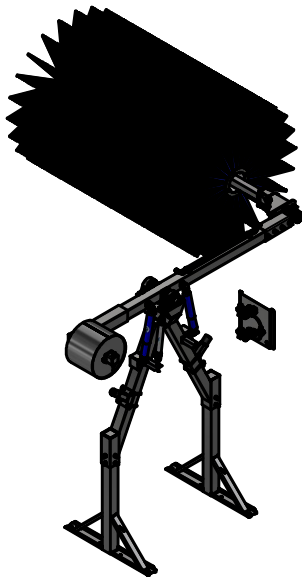
DETAIL A



DETAIL B



DETAIL C



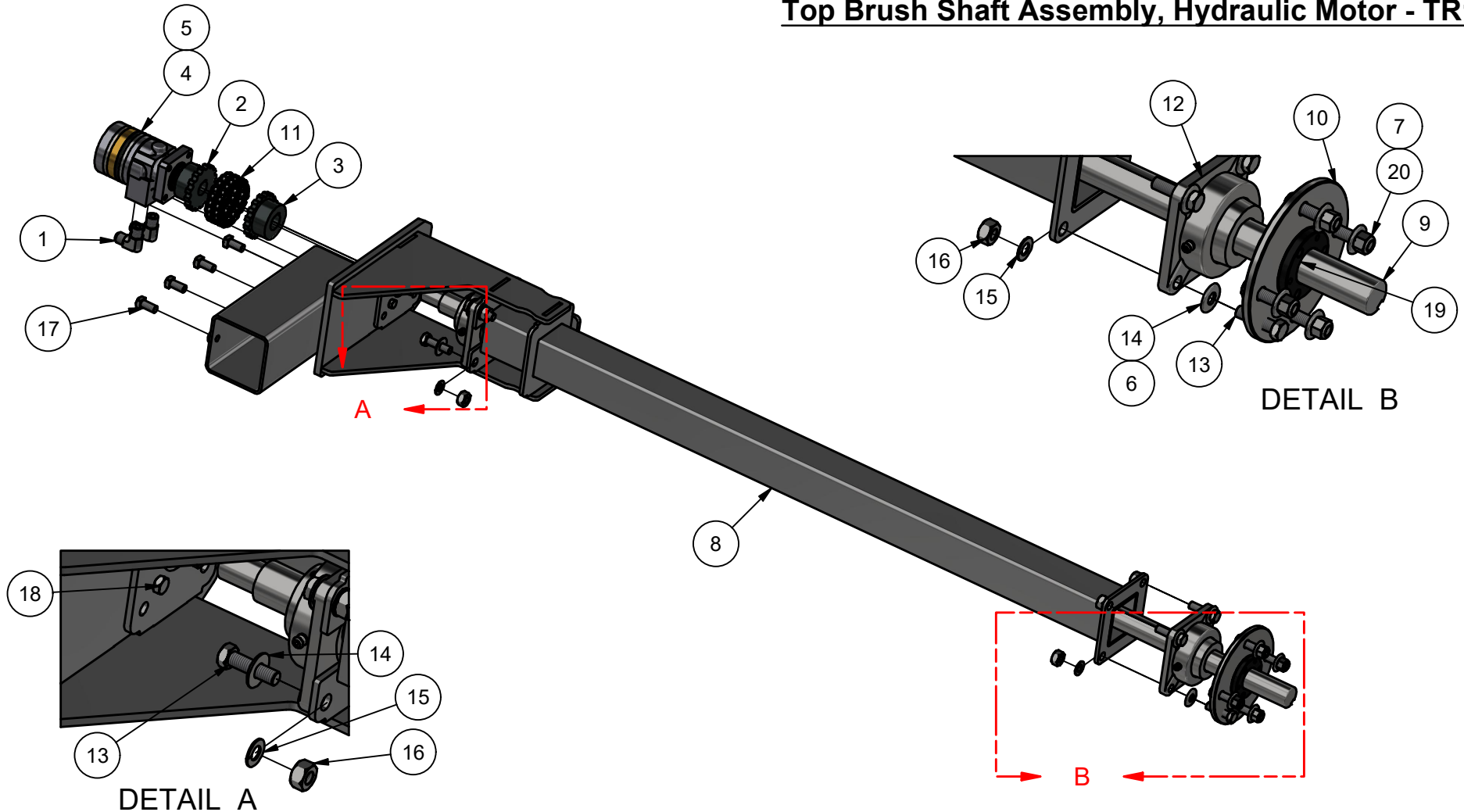
### Top Brush Configurations A, B, C, D

Note: Brush is sold separately

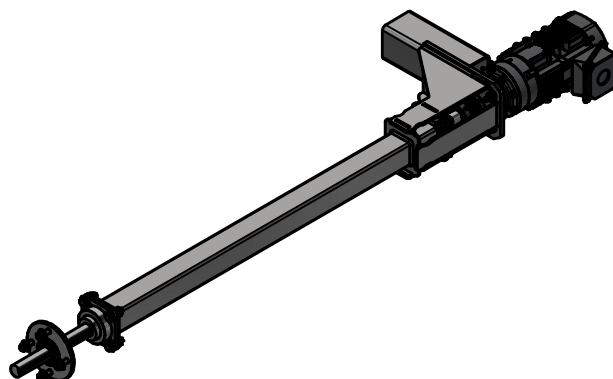
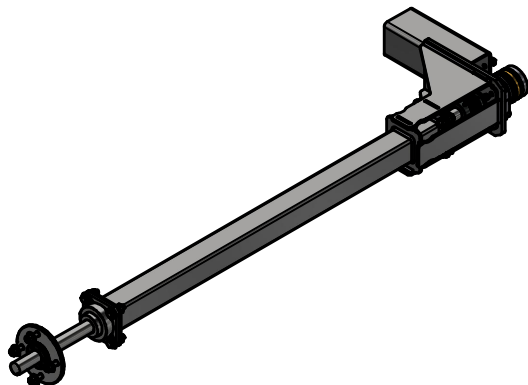
Parts List						
ITEM	PART NUMBER	DESCRIPTION	ID	QTY	ID	QTY
1	TR1B0513	Top Brush Penta Arch	A, B	1	C, D	2
2	TR1A	Leg, for Top Brush Frame	A, B	2	C, D	4
3	TR1C0304	Top Brush Arm	A	1	C, E	2
4	TR1C0304-EL	Top Brush Arm Assembly, Electric	B	1	D	2
5	TR1G	Top Brush Shaft Assembly, Hydraulic Motor	A	1	C	2
6	TR1G-EL	Top Brush Shaft Assembly, Electric Motor	B	1	D	2
7	TR1ACF0304	Air Cylinder Front Mount Bracket for Top Brush	A, B	1	C, D	2
8	TR1DB1122	Top Brush Bumper Assembly	A, B	2	C, D	4
9	TR1D	Sleeve and Shaft Assembly, Top Brush Counterweight	A, B	1	C, D	2
10	TR1FH	Housing for Top Brush Counterweight, With Cover	A, B	1	C, D	2
11	TR1F0304-50	Counterweight 50 lb	A, B	8	C, D	16
12	TR1FHA	Square Collar, 3"	A, B	1	C, D	2
13	TR1R	Retract Air Cylinder 2" x 10"	A, B	1	C, D	2
14	TR1-SKP-2011	Retract and Air Assist Panel for Top Brush	A, B	1	C, D	2
15	WA1FA	Blue Shock Absorber Assembly	A, B	2	C, D	4
16	TB1AEA	Pin 3/8" x 3" LG	A, B	4	C, D	8
17	BRG-WA1WB-SS	Bearing (Pillow Block): 2"	A, B	2	C, D	4
18	FW12	1/2" Flat Washer	A, B	4	C, D	8
19	HHCS1213175	Hex Head Cap Screw: 1/2"-13 x 1-3/4" , SS	A, B	4	C, D	8
20	HN1213	Hex Nut, 1/2-13, SS	A, B	4	C, D	8
21	SQHS1213100	Sq. Head Set Scw 1/2"-13 x 1" LG SS	A, B	8	C, D	16
22	WA1FC	3/8" Set Screw Collar	A, B	4	C, D	8
23	TR1H (Optional)	Single Arm Top brush core with foam material	A, B	1	C, D	2

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## Top Brush Shaft Assembly, Hydraulic Motor - TR1G



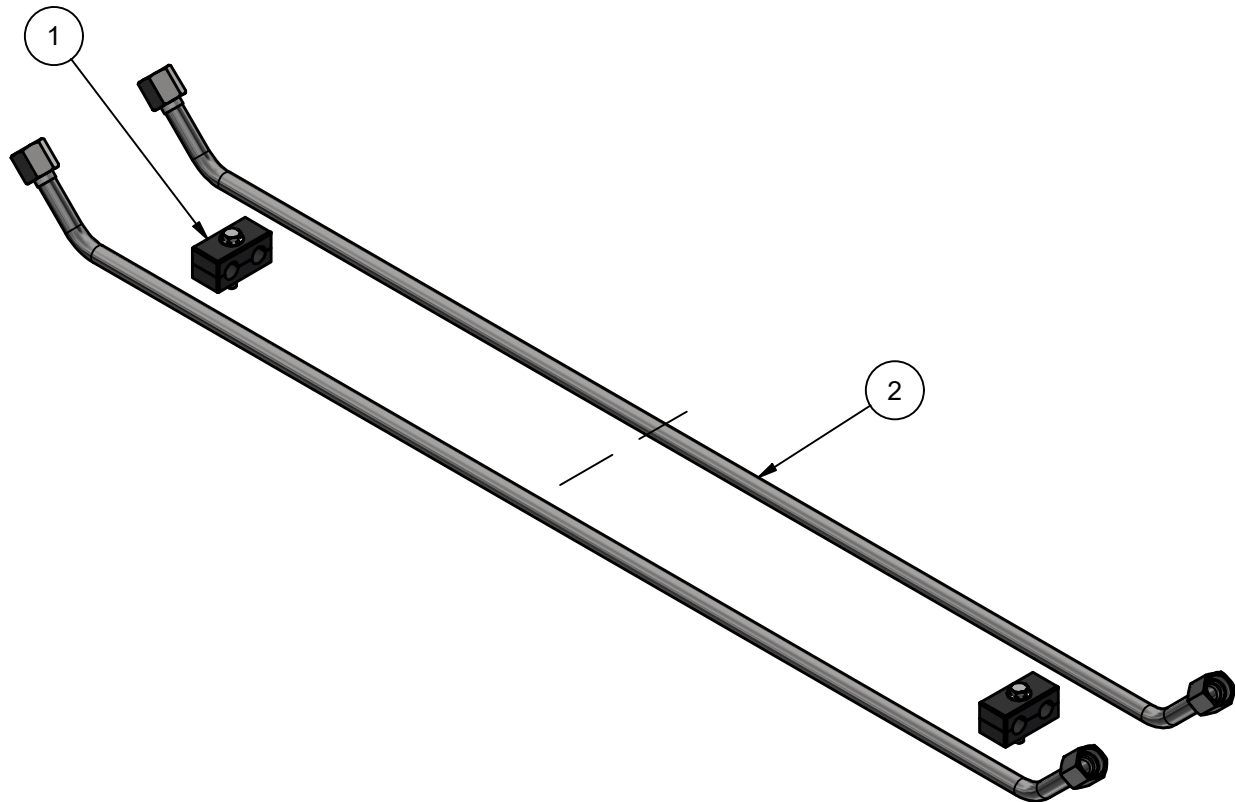
## Top Brush Shaft Assembly - TR1G & TR1G-EL

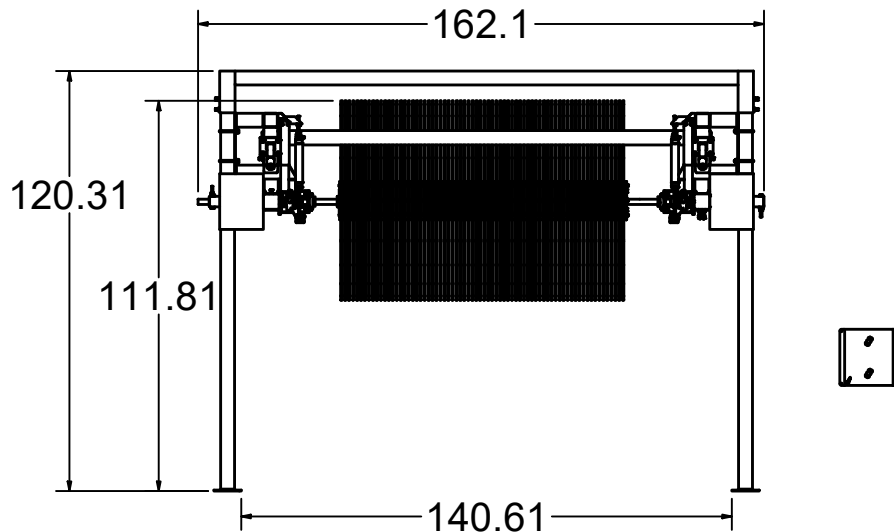
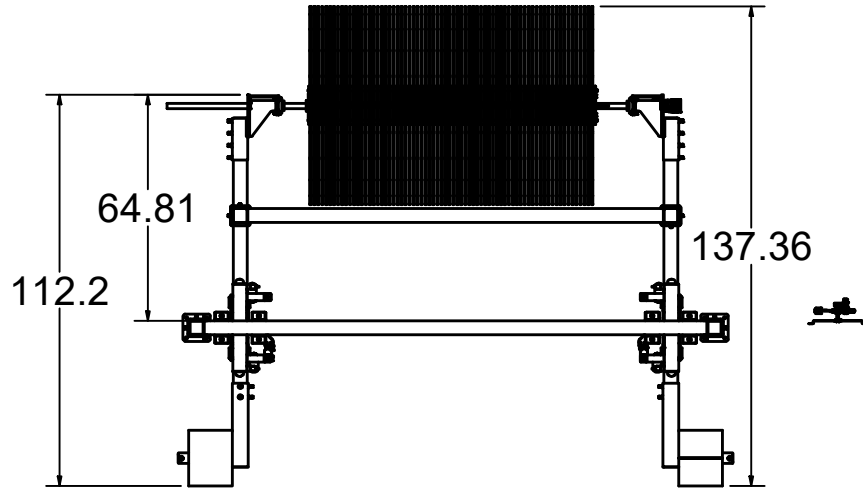


Parts List								
ITEM	PART NUMBER	DESCRIPTION	ID	QTY	ID	QTY	ID	QTY
1	EL90STL050JIC050NPTF	Elbow (1/2" NPTF Male X 1/2" JIC Male)	A	2	C	4		
2	CPLG5016X100	Chain Coupling Flange 1"	A	1	C	2		
3	CPLG5016X118	Chain Coupling Flange 1 1/8"	A	1	B, C	2	D	4
4	TB0080-TB1ADBM	Parker Motor	A	1	C	2		
5	GRMTR-SUMI-1-5HP-81-230-460	Sumitomo Gearmotor, 1.5HP, 1 1/8" Shaft	B	1	D	2		
6	FW38	Flat Washer: 3/8"	B	8	D	16		
7	NLN3816	Nylon Lock Nut: 3/8"-16 SS	B	4	D	8		
8	TR1GA	Motor mount, Top Brush, Weldment	A, B	1	C, D	2		
9	TR1GB-70-EL	Top Brush Shaft 1-1/2" x 70"LG	A, B	1	C, D	2		
10	RB2AEB-P1-1-0106	Brush Connecting Disc	A, B	1	C, D	2		
11	CPLGCHAIN5016	Chain Assembly, Chain Coupling 5016 - 10in Length	A, B	1	C, D	2		
12	BRG-WA1KCB-SS	Bearing-Flange (4-Bolt), 1-1/2", All SS	A, B	2	C, D	4		
13	HHCS1213175	Hex Head Cap Screw: 1/2"-13 x 1-3/4", SS	A, B	8	C, D	16		
14	FW12	1/2" Flat Washer	A, B	12	C, D	24		
15	SLW12	1/2" Split Lock Washer	A, B	8	C, D	16		
16	HN1213	1/2"-13 Stainless Steel Hex Nut	A, B	8	C, D	16		
17	SQHS1213100	Sq. Head Set Scw 1/2"-13 x 1" LG SS	A, B	4	C, D	8		
18	HHCS3816125	3/8"-16 x 1 1/4" UNC Hex Screw	A, B	4	C, D	8		
19	STB-P1X112	1 1/2" Split Taper Bushing	A, B	1	C, D	2		
20	NLN1213	Nylon Lock Nut: 1/2"-13	A, B	4	C, D	8		

### Top Brush Hydraulic Tube Assembly - TR1CH0304

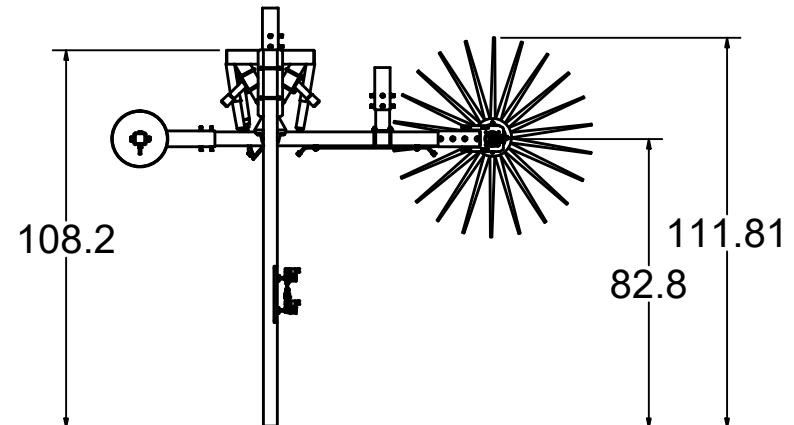
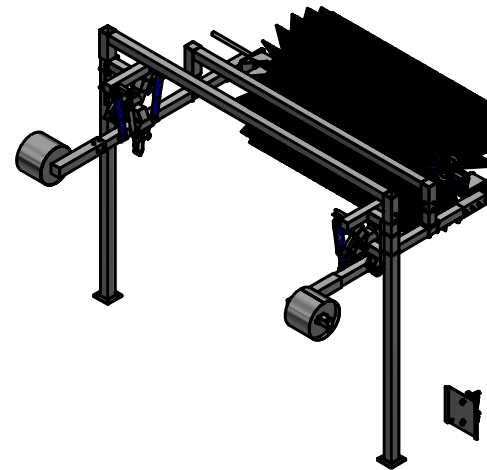
Parts List						
ITEM	PART NUMBER	DESCRIPTION	ID	QTY	ID	QTY
1	DMP12	Clamp (Damping)	A	2	C	4
2	TR1CHA0304	Hydraulic Tube	A	2	C	4



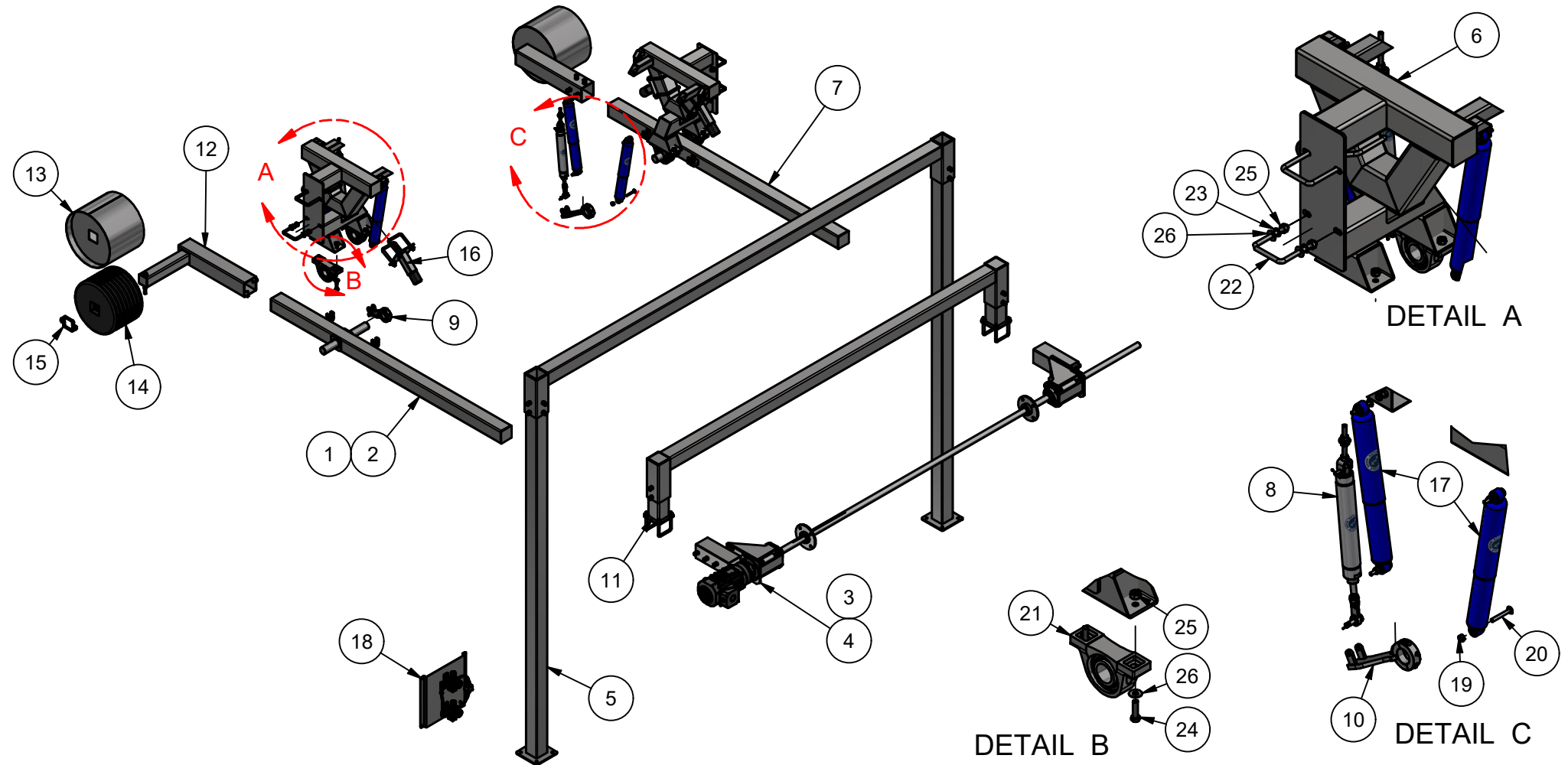


### Top Brush Configurations E, F

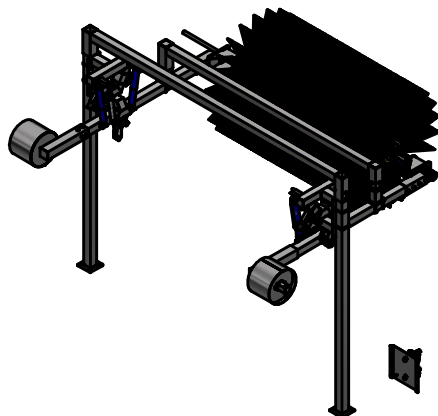
Note: Brush is sold separately



### Top Brush Configurations E, F







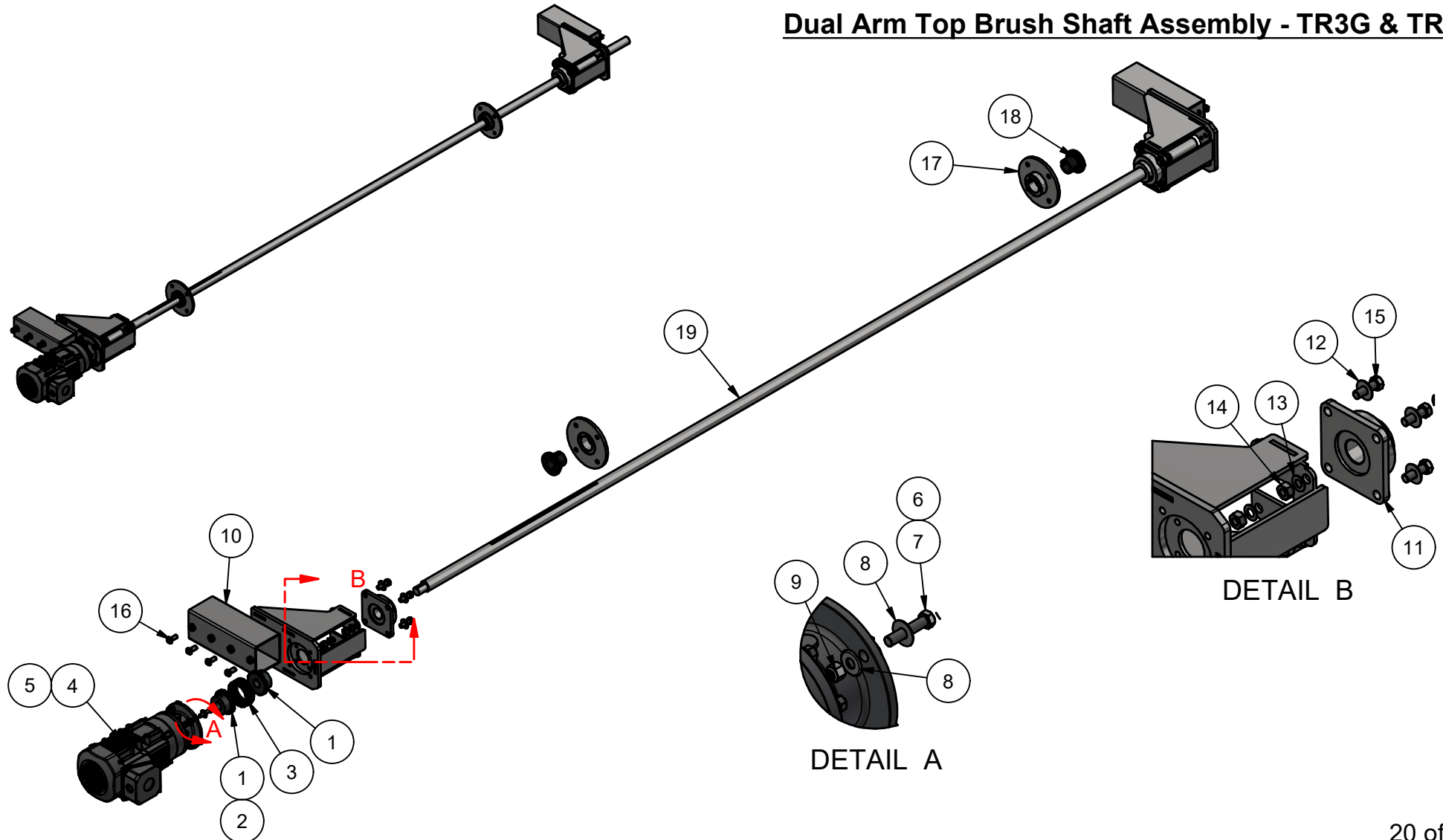
### Top Brush Configurations E, F

Note: Brush is sold separately

Parts List

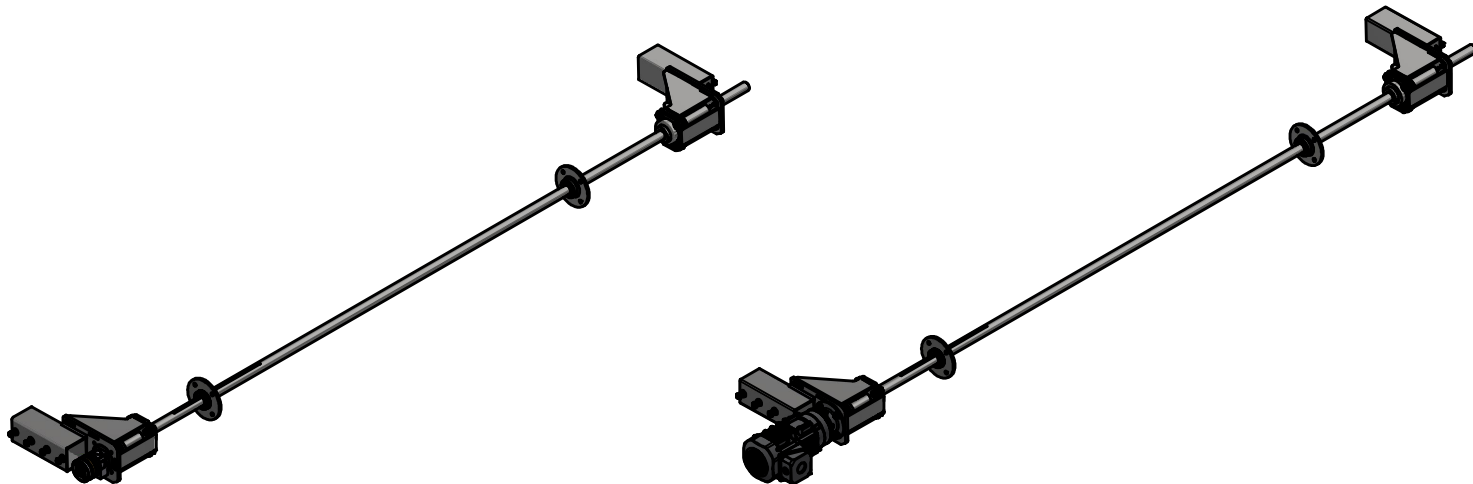
ITEM	PART NUMBER	QTY	DESCRIPTION	ID
1	TR1C0304	1	Top Brush Passenger Side Assembly Hydraulic	E
2	TR1C0304-EL	1	Top Brush Passenger Side Arm	F
3	TR3G	1	Dual Arm Top Brush Shaft Assembly Hydraulic	E
4	TR3G-EL	1	Dual Arm Top Brush Shaft Assembly Electric	F
5	AA012-10	1	Empty Arch-12FT Wide- 10FT Height	E, F
6	TR3A	2	TR3 Top Brush Beam Weldment	E, F
7	TR3C0304	1	Top Brush Driver Side Arm	E, F
8	TR1R	2	Retract Air Cylinder 2" x 10"	E, F
9	TR1ACF0304	1	Air Cylinder Front Mount Bracket for Top Brush [L]	E, F
10	TR1ACR0304	1	Air Cylinder Front Mount Bracket for Top Brush [R]	E, F
11	TR3B	1	TR3 Dual Arm Top Brush Crossbar 119 in	E, F
12	TR1D	2	Sleeve and Shaft Assembly, Top Brush Counterweight	E, F
13	TR1FH	2	Housing for Top Brush Counterweight, With Cover	E, F
14	TR1F0304-50	16	Counterweight 50 lb	E, F
15	TR1FHA	2	Square Collar, 3"	E, F
16	TR1DB1122	4	Top Brush Bumper Assembly	E, F
17	WA1FA	4	Blue Shock Absorber Assembly	E, F
18	TR1-SKP-2011	1	Retract and Air Assist Panel for Top Brush	E, F
19	WA1FC	8	3/8" Set Screw Collar	E, F
20	TB1AEA	8	Pin 3/8" x 3" LG	E, F
21	BRG-WA1WB-SS	4	Bearing (Pillow Block): 2"	E, F
22	UB-SQ050x1500	4	Square U Bolt D 1/2" x 4" x 6 1/4" LG	E, F
23	SLW12	8	1/2" Split Lock Washer	E, F
24	HHCS1213175	8	Hex Head Cap Screw: 1/2"-13 x 1-3/4", SS	E, F
25	HN1213	16	Hex Nut, 1/2-13, SS	E, F
26	FW12	16	1/2" Flat Washer	E, F
27	TR3H (Optional) *Not Shown	1	Dual arm top brush core with foam	E, F

## Dual Arm Top Brush Shaft Assembly - TR3G & TR3G-EL



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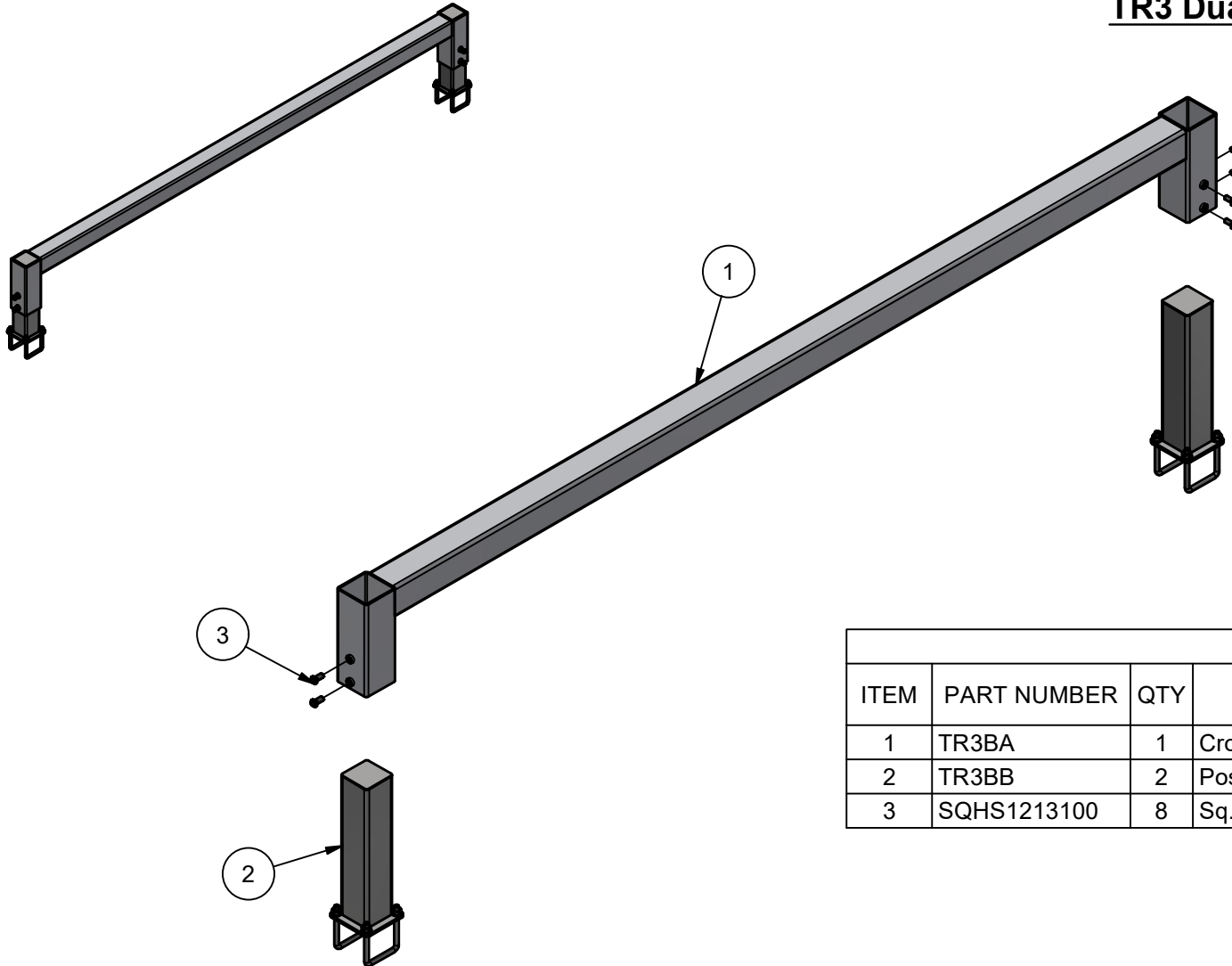
### Dual Arm Top Brush Shaft Assembly - TR3G & TR3G-EL



Parts List

ITEM	PART NUMBER	DESCRIPTION	ID	QTY	ID	QTY
1	CPLG5016X118	Chain Coupling Flange 1 1/8"	E, G	1	F, H	2
2	CPLG5016X100	Chain Coupling Flange 1"	E, G	1		
3	CPLGCHAIN5016	Chain Assembly, Chain Coupling 5016 - 10in Length	E, F, G, H	1		
4	GRMTR-SUMI-1-5HP-81-230-460	Sumitomo Gearmotor, 1.5HP, 1 1/8" Shaft	F, H	1		
5	TB0080-TB1ADB	Parker Motor	E, G	1		
6	HHCS3816125	3/8"-16 x 1 1/4" UNC Hex Screw	E, G	4		
7	HHCS3816175	Hex Head Cap Screw: 3/8"-16 x 1-3/4", SS	F, H	4		
8	FW38	Flat Washer: 3/8" SS	F, H	8		
9	NLN3816	Nylon Lock Nut: 3/8"-16 SS	F, H	4		
10	TR4GA-IL	Top Brush Inline Universal Motor Mount	E, F, G, H	2		
11	BRG-WA1KCB-SS	Bearing-Flange (4-Bolt), 1-1/2", All SS	E, F, G, H	2		
12	FW12	1/2" Flat Washer	E, F, G, H	8		
13	SLW12	1/2" Split Lock Washer	E, F, G, H	8		
14	HN1213	Hex Nut, 1/2-13, SS	E, F, G, H	8		
15	HHCS1213150	1/2" - 13 x 1 1/2" UNC Hex Screw	E, F, G, H	8		
16	SQHS1213100	Sq. Head Set Scew 1/2"-13 x 1" LG SS	E, F, G, H	8		
17	TR3GC	Dual Arm Top Brush Connecting Disc Weldment	E, F, G, H	2		
18	STB-P1X112	1 1/2" Split Taper Bushing	E, F, G, H	2		
19	TR3GB-EL	Top Brush Shaft Electric 1-1/2" x 140"LG	E, F, G, H	1		

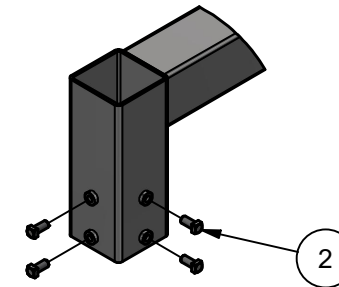
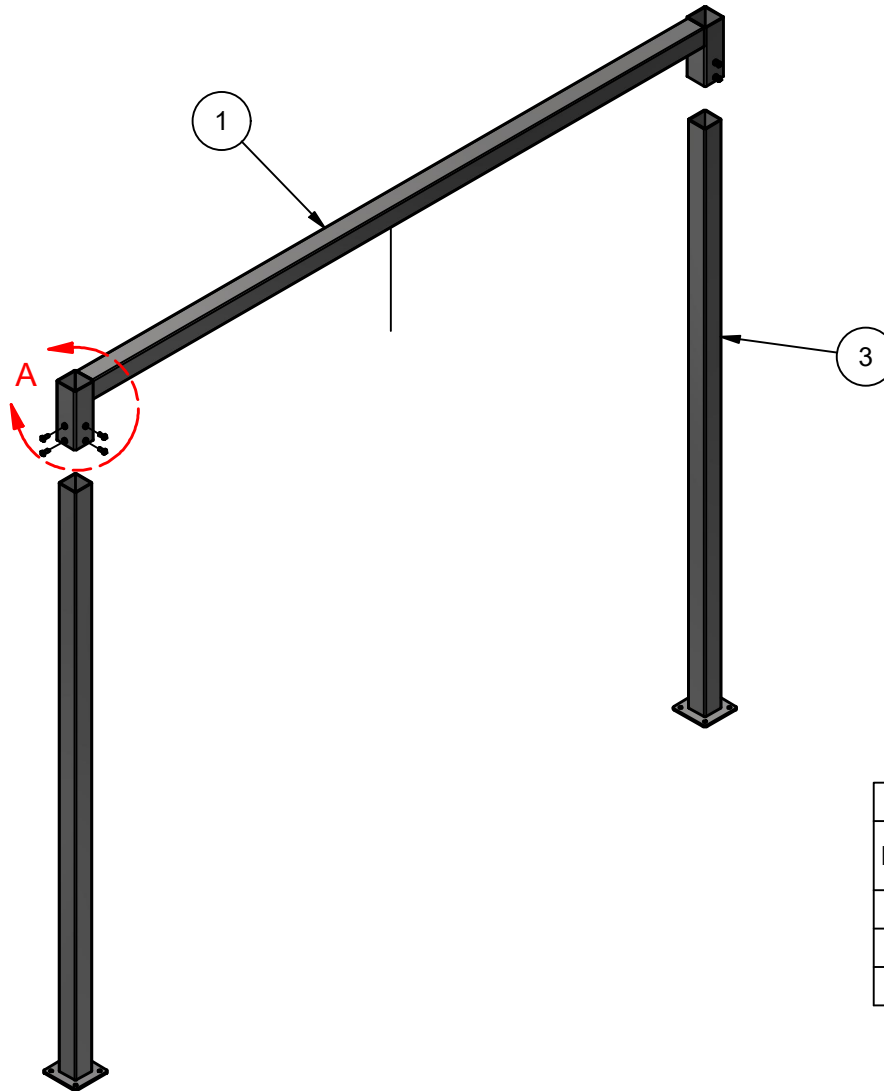
### TR3 Dual Arm Top Brush Crossbar - TR3B



Parts List

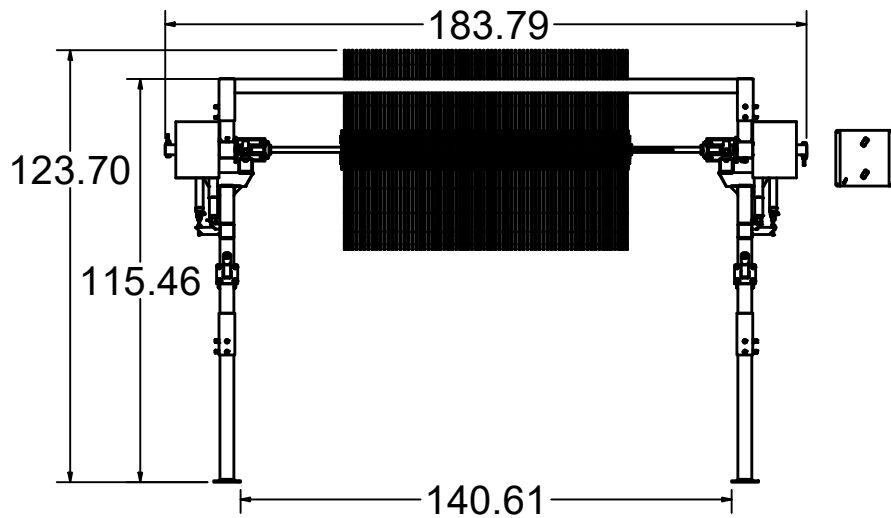
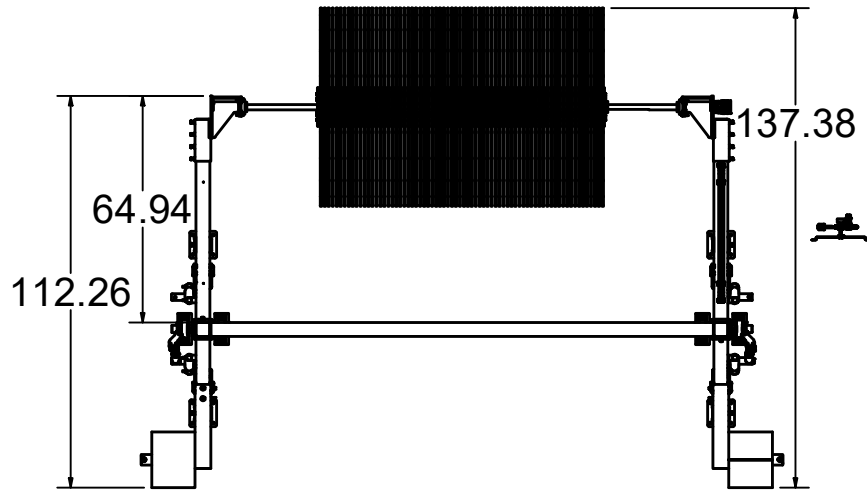
ITEM	PART NUMBER	QTY	DESCRIPTION	ID
1	TR3BA	1	Crossbar 119" LG Weldment	E, F
2	TR3BB	2	Post for Crossbar, Dual Arm Top Brush	E, F
3	SQHS1213100	8	Sq. Head Set ScREW 1/2"-13 x 1" LG SS	E, F

### Empty Arch - AA012-10



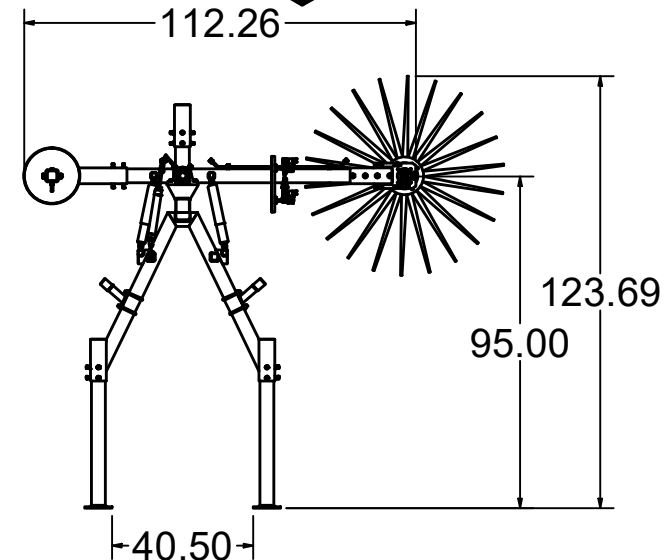
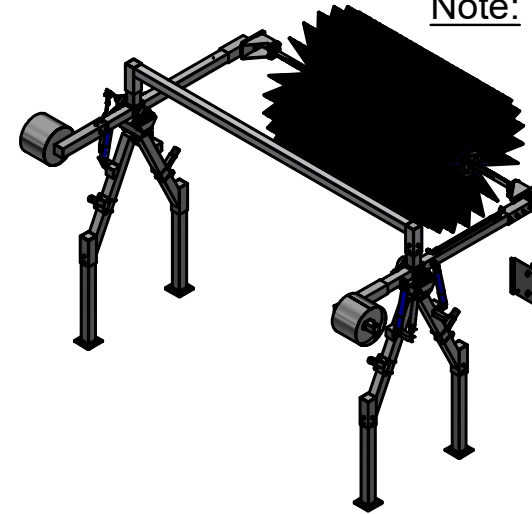
DETAIL A

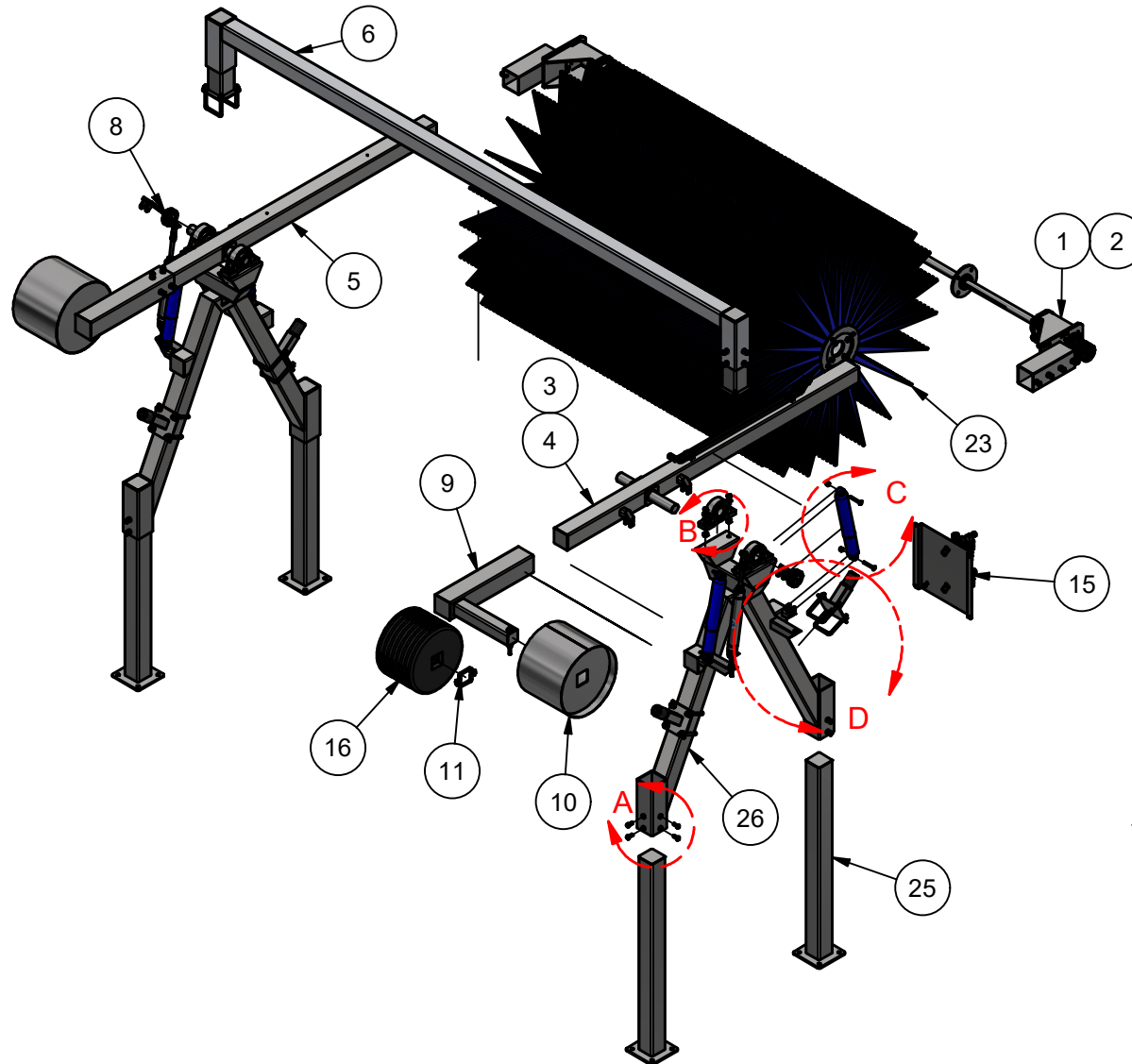
Parts List				
ITEM	PART NUMBER	QTY	DESCRIPTION	ID
1	AA0B	1	TOP CROSSBAR ASSEMBLY - 12ft	E, F
2	SQHS1213100	8	Sq. Head Set Scw 1/2"-13 x 1" LG SS	E, F
3	MC1A	2	Mitter Curtain Leg, 120"	E, F



### Top Brush Configurations G, H

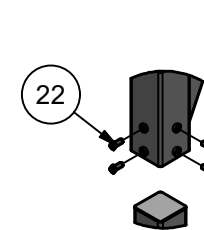
Note: Brush is sold separately



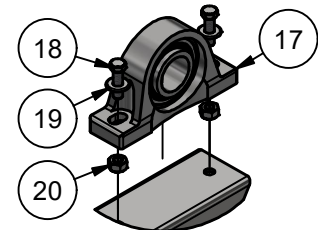


### Top Brush Configurations G, H

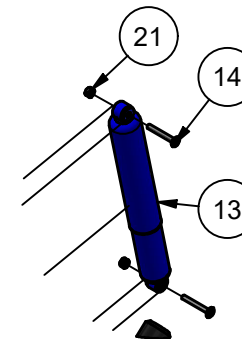
Note: Brush is sold separately



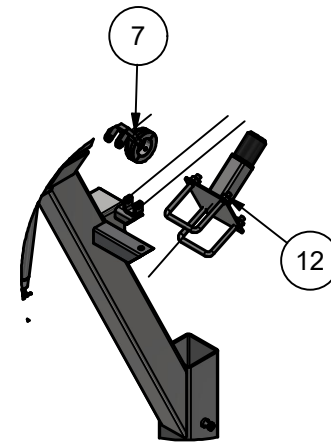
DETAIL A



DETAIL B



DETAIL C

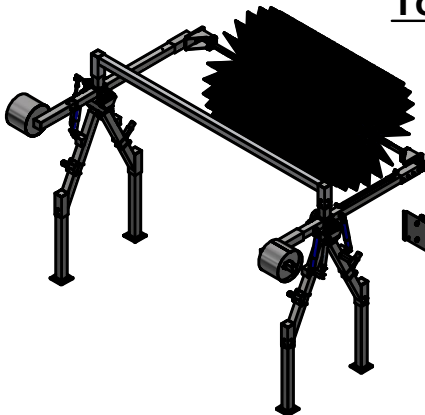


DETAIL D



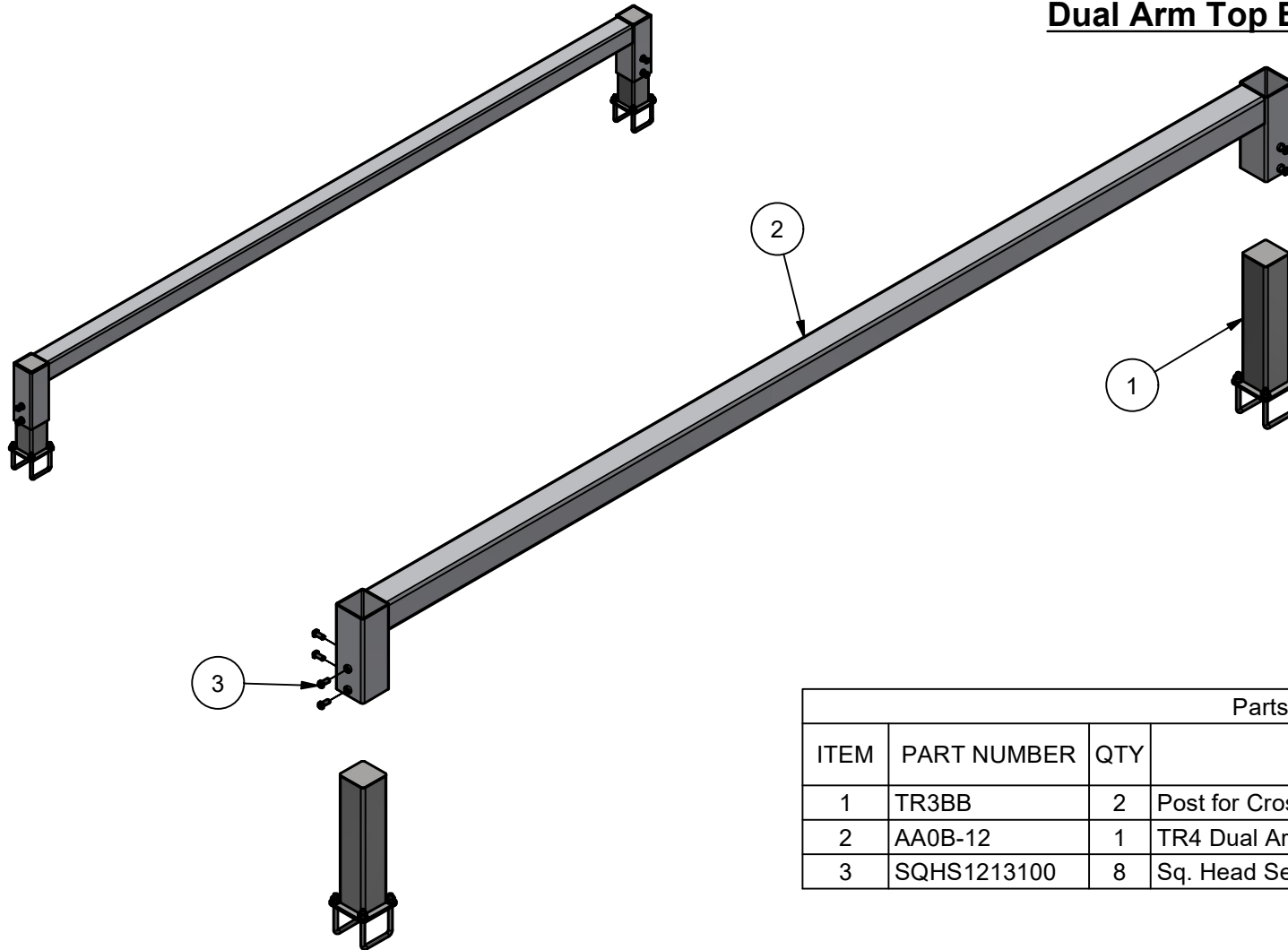
### Top Brush Configurations G, H

Note: Brush is sold separately

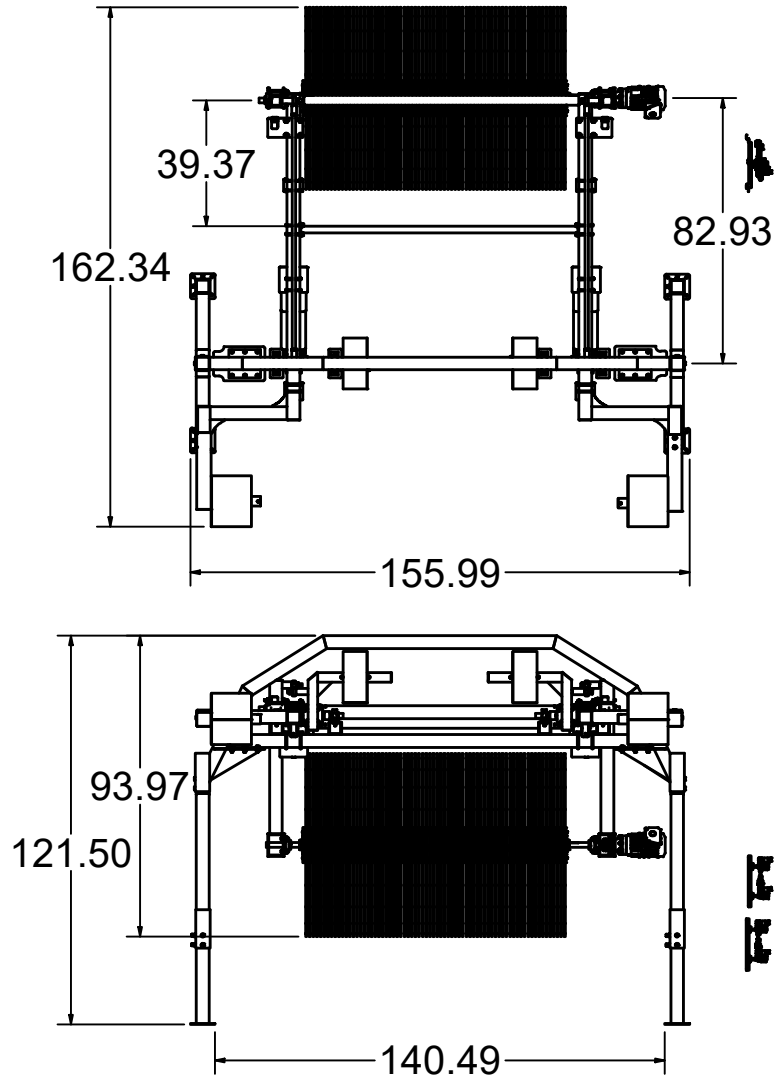


Parts List				
ITEM	PART NUMBER	QTY	DESCRIPTION	ID
1	TR3G	1	TR3 shaft Assembly Hydraulic	G
2	TR3G-EL	1	Dual Arm Top Brush Shaft Assembly Electric	H
3	TR1C0304	1	Top Brush Arm Passenger Side Assembly Hydraulic	G
4	TR1C0304-EL	1	Top Brush Arm	H
5	TR3C0304	1	Top Brush Driver Side Arm	G, H
6	TR4B	1	Dual Arm Top Brush Crossbar 144" LG	G, H
7	TR1ACF0304	1	Air Cylinder Front Mount Bracket for Top Brush [L]	G, H
8	TR1ACR0304	1	Air Cylinder Front Mount Bracket for Top Brush [R]	G, H
9	TR1D	2	Sleeve and Shaft Assembly, Top Brush Counterweight	G, H
10	TR1FH	2	Housing for Top Brush Counterweight, With Cover	G, H
11	TR1FHA	2	Square Collar, 3"	G, H
12	TR1DB1122	4	Top Brush Bumper Assembly	G, H
13	WA1FA	4	Blue Shock Absorber Assembly	G, H
14	TB1AEA	8	Pin 3/8" x 3" LG	G, H
15	TR1-SKP-2011	1	Retract and Air Assist Panel for Top Brush	G, H
16	TR1F0304-50	16	Counterweight 50 lb	G, H
17	BRG-WA1WB-SS	4	Bearing (Pillow Block): 2"	G, H
18	HHCS1213175	8	Hex Head Cap Screw: 1/2"-13 x 1-3/4", SS	G, H
19	FW12	8	1/2" Flat Washer	G, H
20	HN1213	8	Hex Nut, 1/2-13, SS	G, H
21	WA1FC	8	3/8" Set Screw Collar	G, H
22	SQHS1213100	16	Sq. Head Set ScREW 1/2"-13 x 1" LG SS	G, H
23	TR3H (Optional)	1	Dual arm top brush core with foam	G, H
24	TR1R	2	Retract Air Cylinder 2" x 10"	G, H
25	TR4A	4	Top Brush Leg Weldment	G, H
26	TR1B0513	2	Top Brush Penta Arch	G, H

### Dual Arm Top Brush Crossbar 144" LG - TR4B

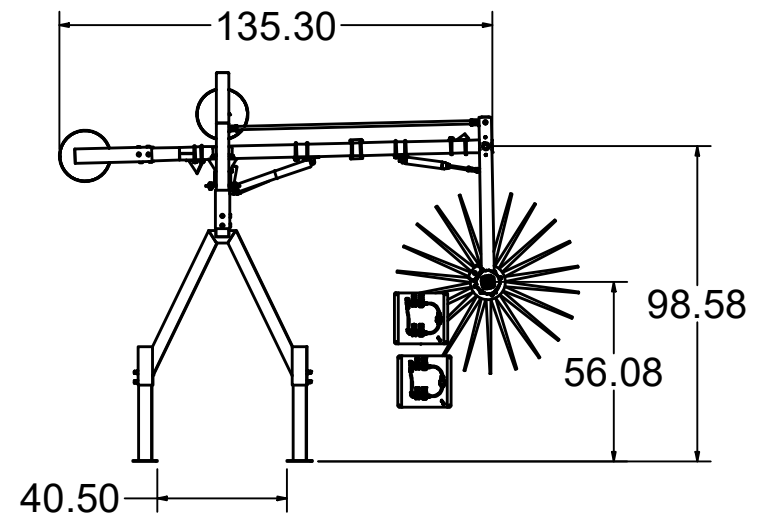
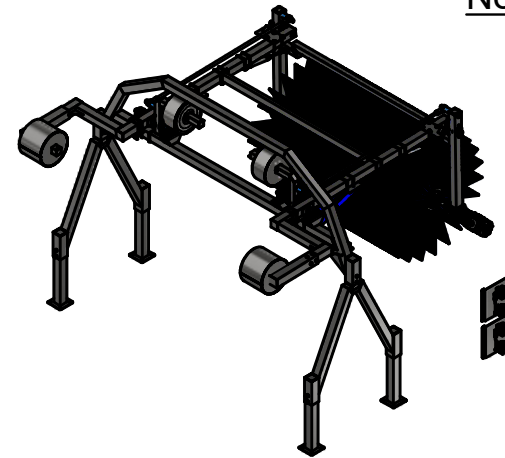


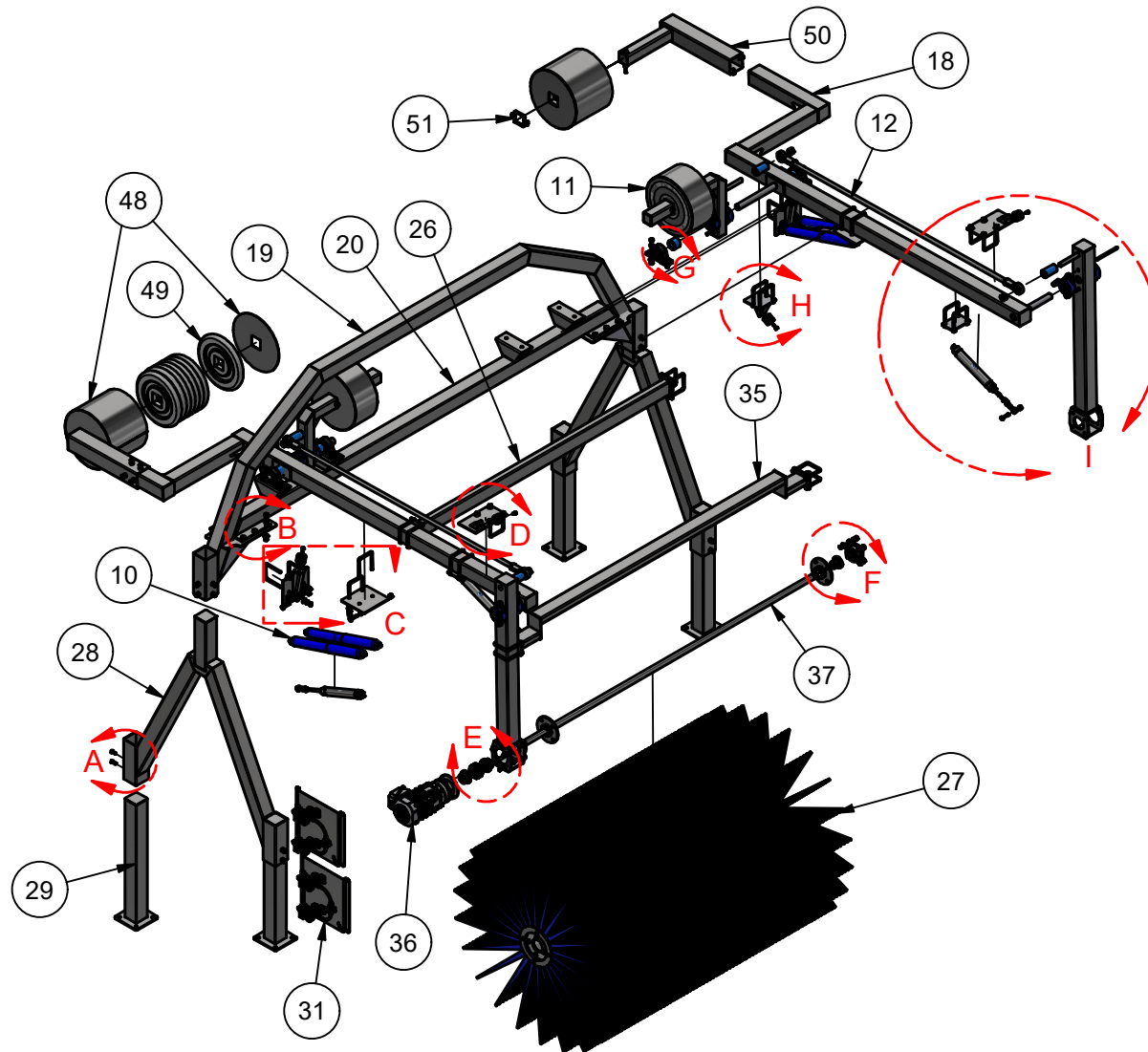
Parts List				
ITEM	PART NUMBER	QTY	DESCRIPTION	ID
1	TR3BB	2	Post for Crossbar, Dual Arm Top Brush	G, H
2	AA0B-12	1	TR4 Dual Arm Top Brush Crossbar 144" LG	G, H
3	SQHS1213100	8	Sq. Head Set ScREW 1/2"-13 x 1" LG SS	G, H



### Top Brush Configuration J

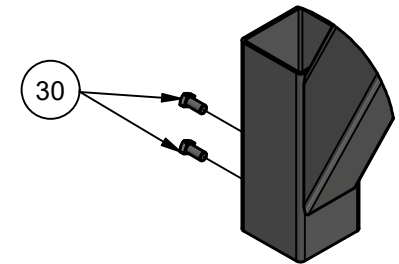
Note: Brush is sold separately



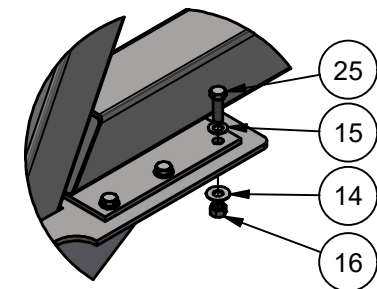


### Top Brush Configuration J

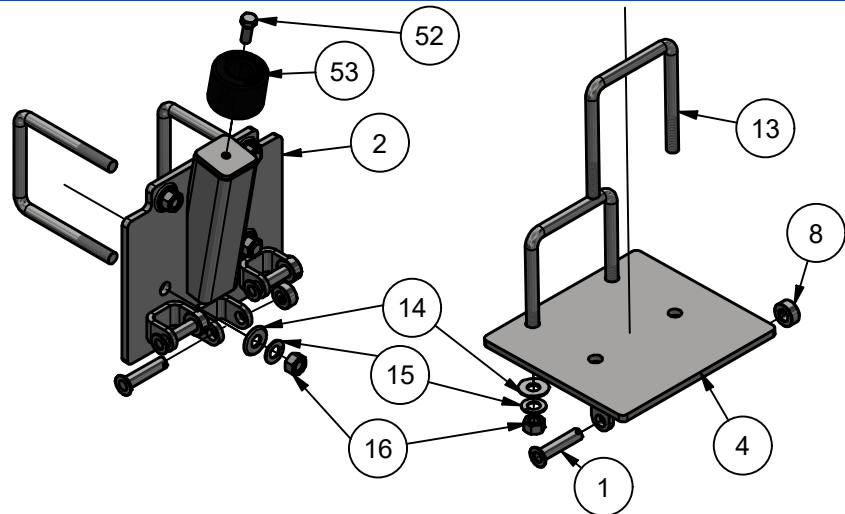
Note: Brush is sold separately



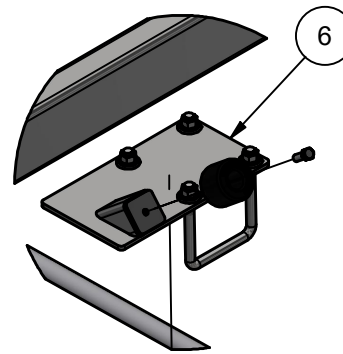
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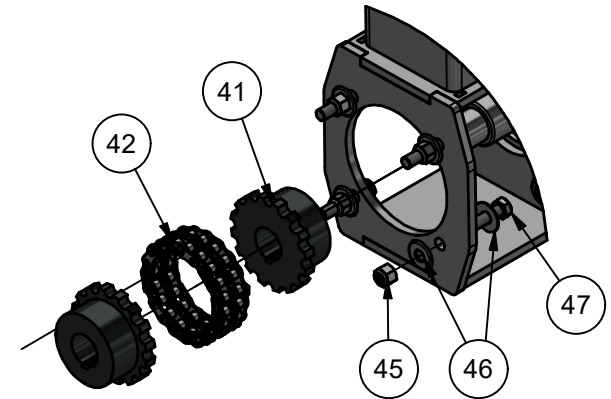
DETAIL B



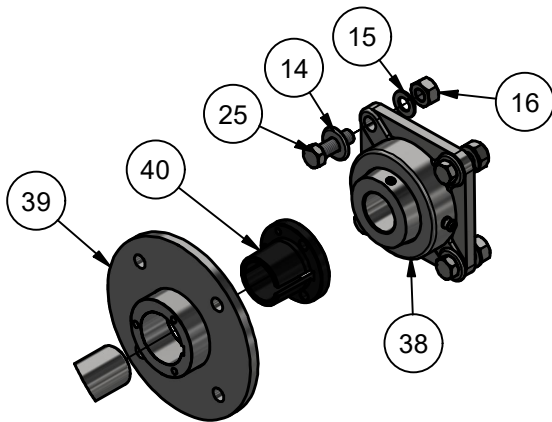
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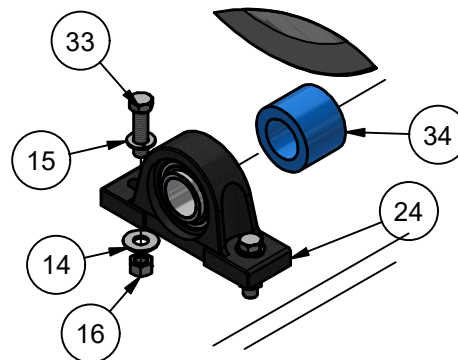
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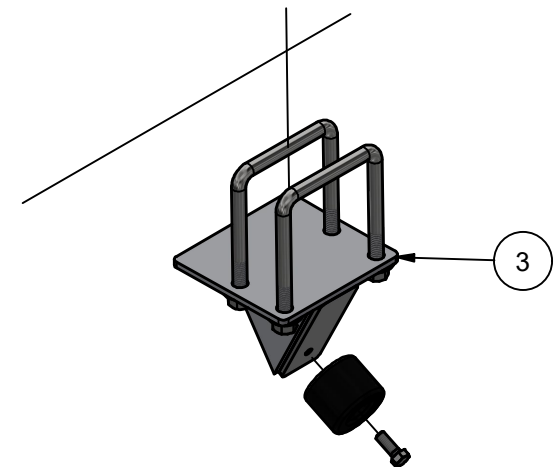
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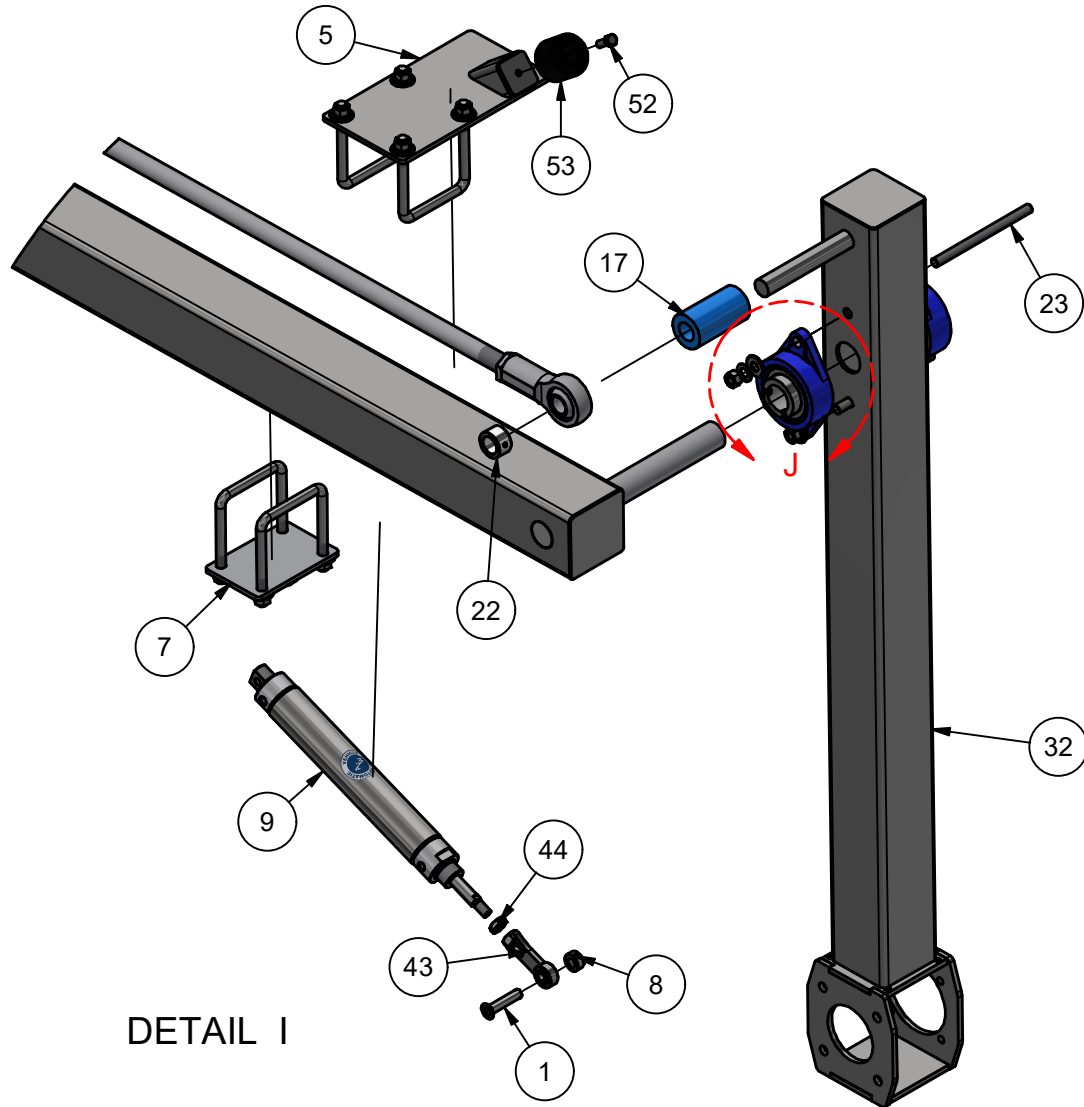
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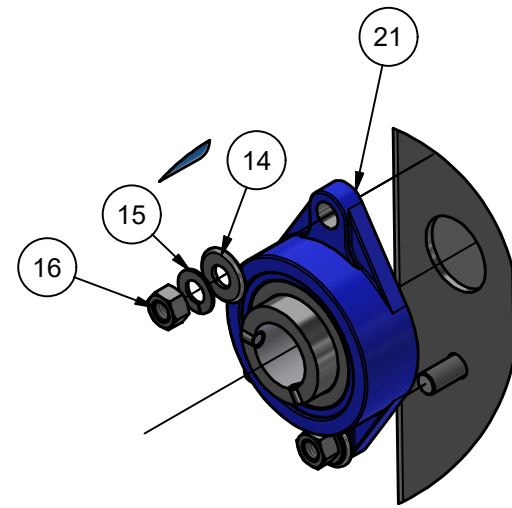
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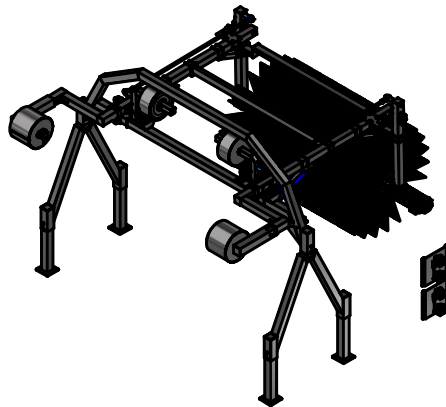
DETAIL H



DETAIL I



DETAIL J

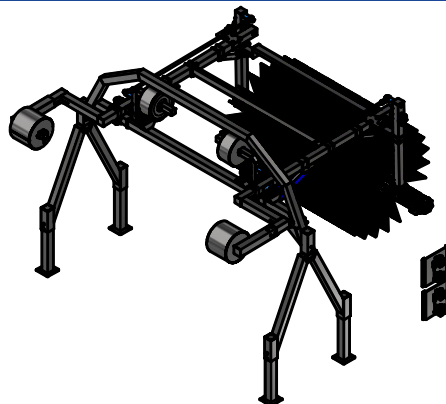


### Top Brush Configuration J

Note: Brush is sold separately

Parts List				
ITEM	PART NUMBER	QTY	DESCRIPTION	ID
1	WA1GC-0318	16	Pin #1/2" D x 2 1/4" LG	J
2	TR5H	2	Shock + Air Cylinder w/ Bump Stop Mounting Bracket	J
3	TR5L	2	Top Arm Bumper	J
4	TR5F	2	Shock + Air Cylinder Arm Mount	J
5	TR5J	1	Short Arm Bumper RH	J
6	TR5K	1	Short Arm Bumper LH	J
7	TR5M	2	Air Cylinder Mount	J
8	WA1GD	16	1/2" Set Screw Collar	J
9	AC2X10	4	Air Cylinder, 2" x 10"	J
10	WA2FA	4	Shock Absorber Assembly (1/2"ID UHMW Bushing)	J
11	TR5EA	2	Top Counterbalance Single Assembly	J
12	TR5P	2	Relay Rod Assembly	J
13	UB-SQ050X1500	28	Square U Bolt D 1/2" x 4" x 5" LG	J
14	FW12	92	1/2" Flat Washer	J
15	SLW12	93	1/2" Split Lock Washer	J
16	HN1213	93	Hex Nut, 1/2-13, SS	J
17	TR5R	4	UHMW Bushing 1" ID x 2" OD x 3 3/4" L	J
18	TR5CA	2	Top Brush Arm Weldment Assembly	J
19	OT2-TR5-EL-A	1	AVW OT2 Arch with Main Crossbar Support	J
20	OT2-TR5-EL-C	1	Tripleline Top Brush Pivot Bar	J
21	BRG-TR5-WB150	4	1.5 in Self Aligning Pillow Block	J
22	CLRSS100x150x087	4	Collar 1" ID x 1 1/2" OD x 7/8" L	J
23	TRSS05020X0700	4	Threaded Rod 1/2"-20 x 7" L.G.	J
24	BRG-WA1KCB-INSERT_SS	4	1-1_2 Pillow Block	J
25	HHCS1213150	20	1/2" - 13 x 1 1/2" UNC Hex Screw	J
26	TR5CAA	1	Crossbar 2 x 4 x 87.5in LG	J

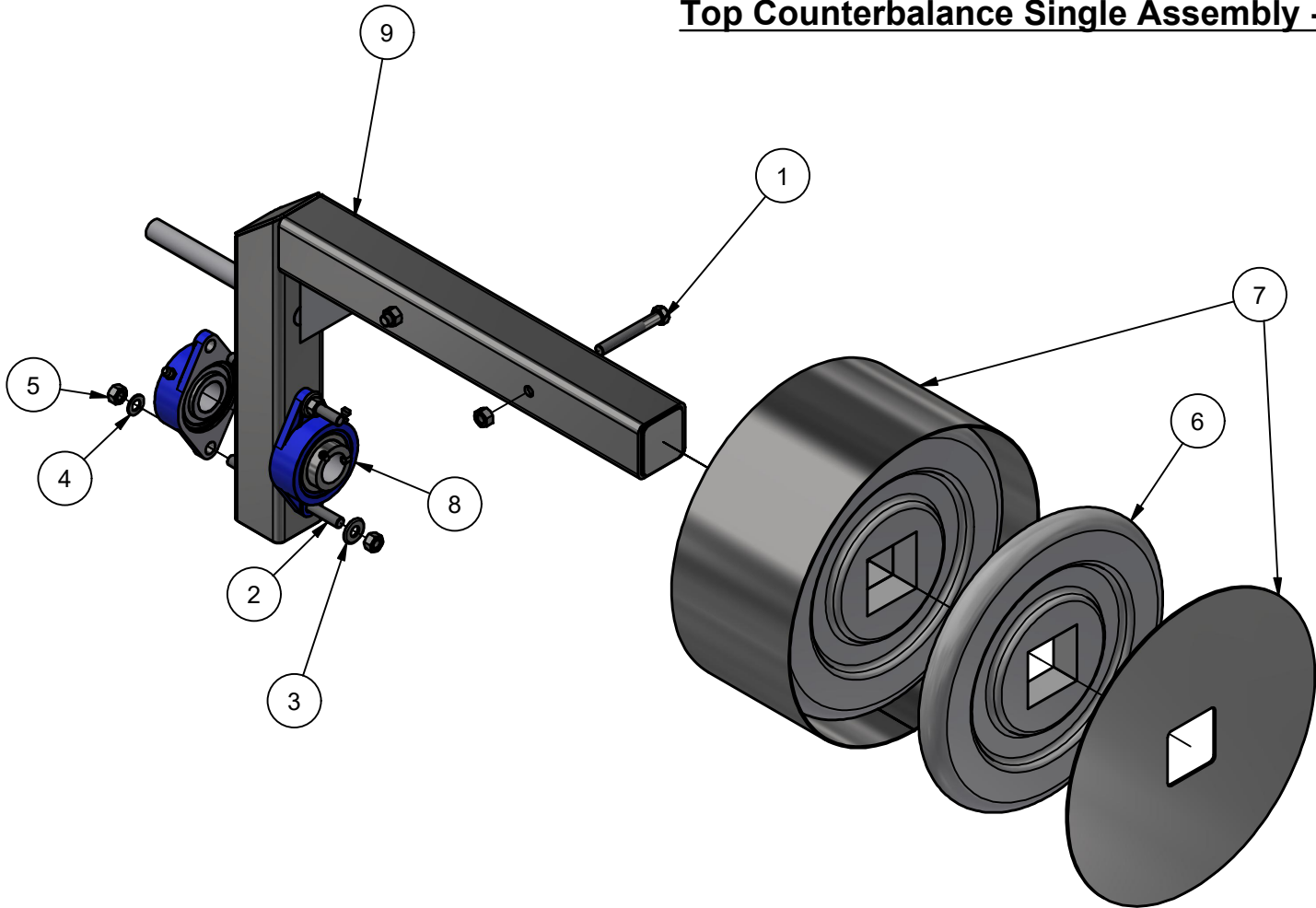




**Top Brush Configuration J**  
Note: Brush is sold separately

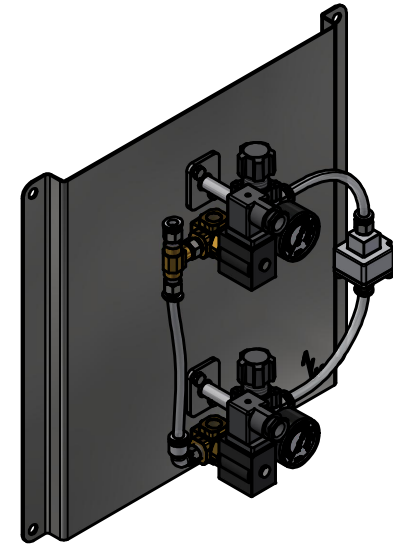
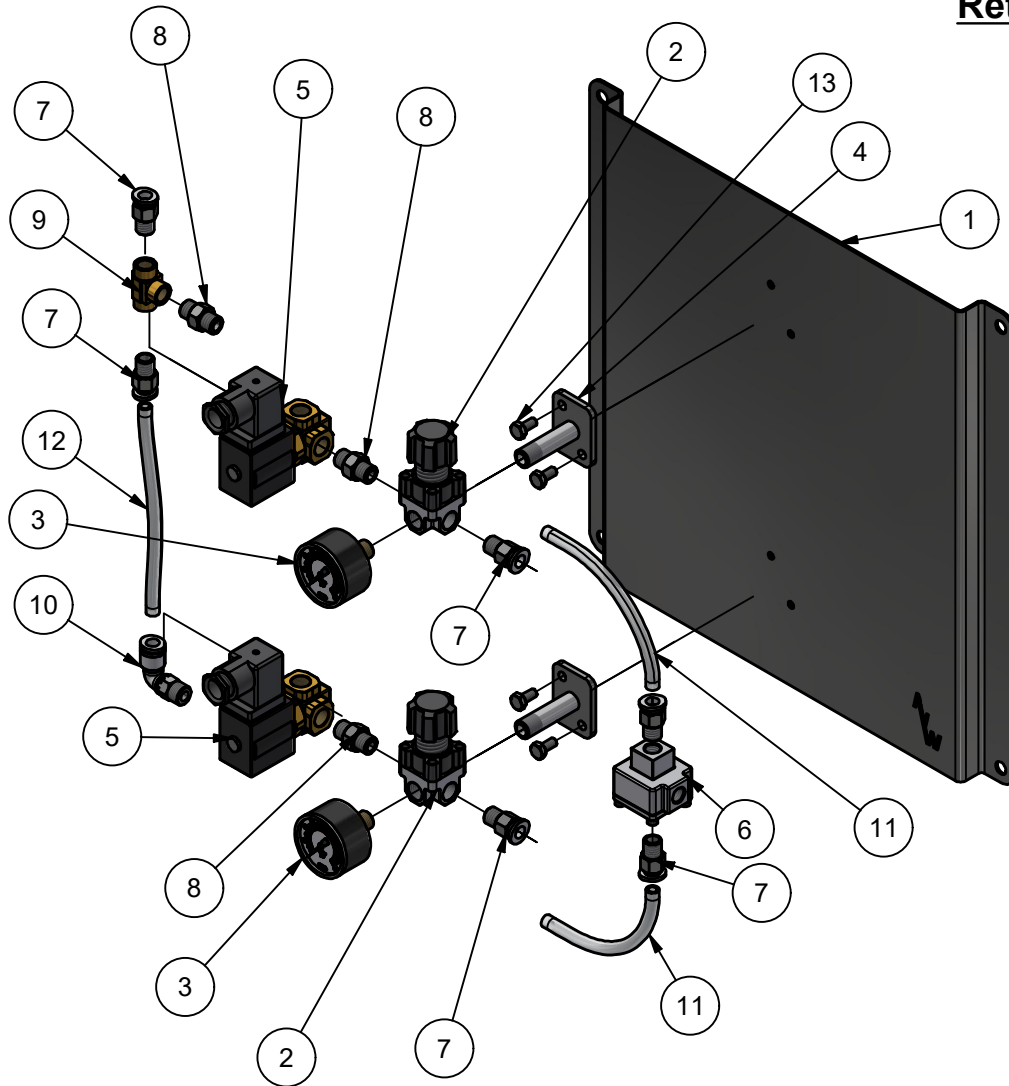
Parts List				
ITEM	PART NUMBER	QTY	DESCRIPTION	ID
27	TR3H (Optional)	1	Dual arm top brush core with foam	J
28	TR5B1024	2	Penta Arch for Top Flex Top Brush	J
29	TR5A	4	Leg, for Top Flex Top Brush Frame	J
30	SQHS1213100	24	Sq. Head Set ScREW 1/2"-13 x 1" LG SS	J
31	TR1-SKP-2011	2	Retract and Air Assist Panel for Top Brush	J
32	TR5D	2	Motor Mounting Drop Down Arm	J
33	HHCS1213200F	8	1/2"-13 x 2" L Hex Screw	J
34	TR5Q	4	UHMW Bushing 1 9/16" ID x 2 1/2" OD x 1 7/8" L	J
35	TR5I	1	Arm Drop Down Brace Bar	J
36	GRMTR-SUMI-1-5HP-81-230-460	1	Sumitomo Gearmotor, 1.5HP, 1 1/8" Shaft	J
37	TR5GB-EL	1	Top Brush Shaft Electric 1-1/2" x 106"LG	J
38	BRG-WA1KCB-SS	2	Bearing-Flange (4-Bolt), 1-1/2", All SS	J
39	TR3GC	2	Dual Arm Top Brush Connecting Disc Weldment	J
40	STB-P1X112	2	1 1/2" Split Taper Bushing	J
41	CPLG5016X118	2	Chain Coupling Flange 1 1/8"	J
42	CPLGCHAIN5016	1	Chain Assembly, Chain Coupling 5016 - 10in Length	J
43	BJ1-2-20	4	Ball Joint End Rod Female 1/2"-20	J
44	JN1220	4	Jam Nut: 1/2-20, SS	J
45	NLN3816	4	Nylon Lock Nut: 3/8"-16 SS	J
46	FW38	8	Flat Washer: 3/8" SS	J
47	HHCS3816175	4	Hex Head Cap Screw: 3/8"-16 x 1-3/4", SS	J
48	TR1FH	2	Housing for Top Brush Counterweight, With Cover	J
49	TR1F0304-50	16	Counterweight 50 lb	J
50	TR1D	2	Sleeve and Shaft Assembly, Top Brush Counterweight	J
51	TR1FHA	2	Square Collar, 3"	J
52	HHCS3816100	6	Hex Screw - 3/8"-16 x 1" LG (For Mounting WA1DBB)	J
53	WA1DBB	6	Rubber bumper 1 3/4" LG	J

### Top Counterbalance Single Assembly - TR5EA

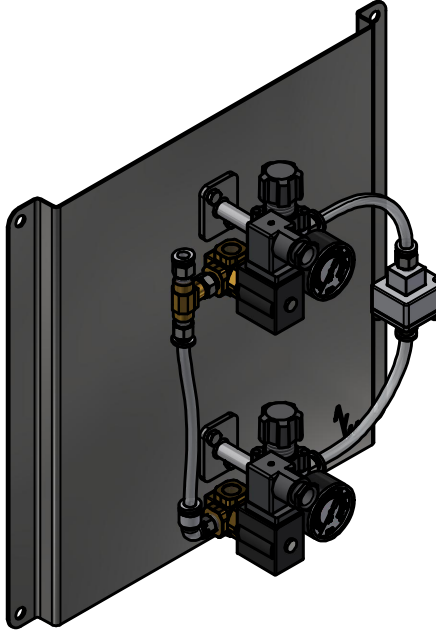


Parts List				
ITEM	PART NUMBER	QTY	DESCRIPTION	ID
1	HHCS1213375	2	1/2"-13 x 3.75" L Hex Screw	J
2	TRSS05020X0700	2	Threaded Rod 1/2"-20 x 7" L.G.	J
3	FW12	2	1/2" Flat Washer	J
4	SLW12	2	1/2" Split Lock Washer	J
5	HN1213	6	Hex Nut, 1/2-13, SS	J
6	TR1F0304-50	5	Counterweight 50 lb	J
7	TR5EAB	1	Short Counterbalance Cover 7.5 in L	J
8	BRG-TR5-WB150	2	1.5 in Self Aligning Pillow Block	J
9	TR5EAA	1	Top Counterweight Arm Weldment	J

### Retract and Air Assist Panel for Top Brush - TR1-SKP-2011

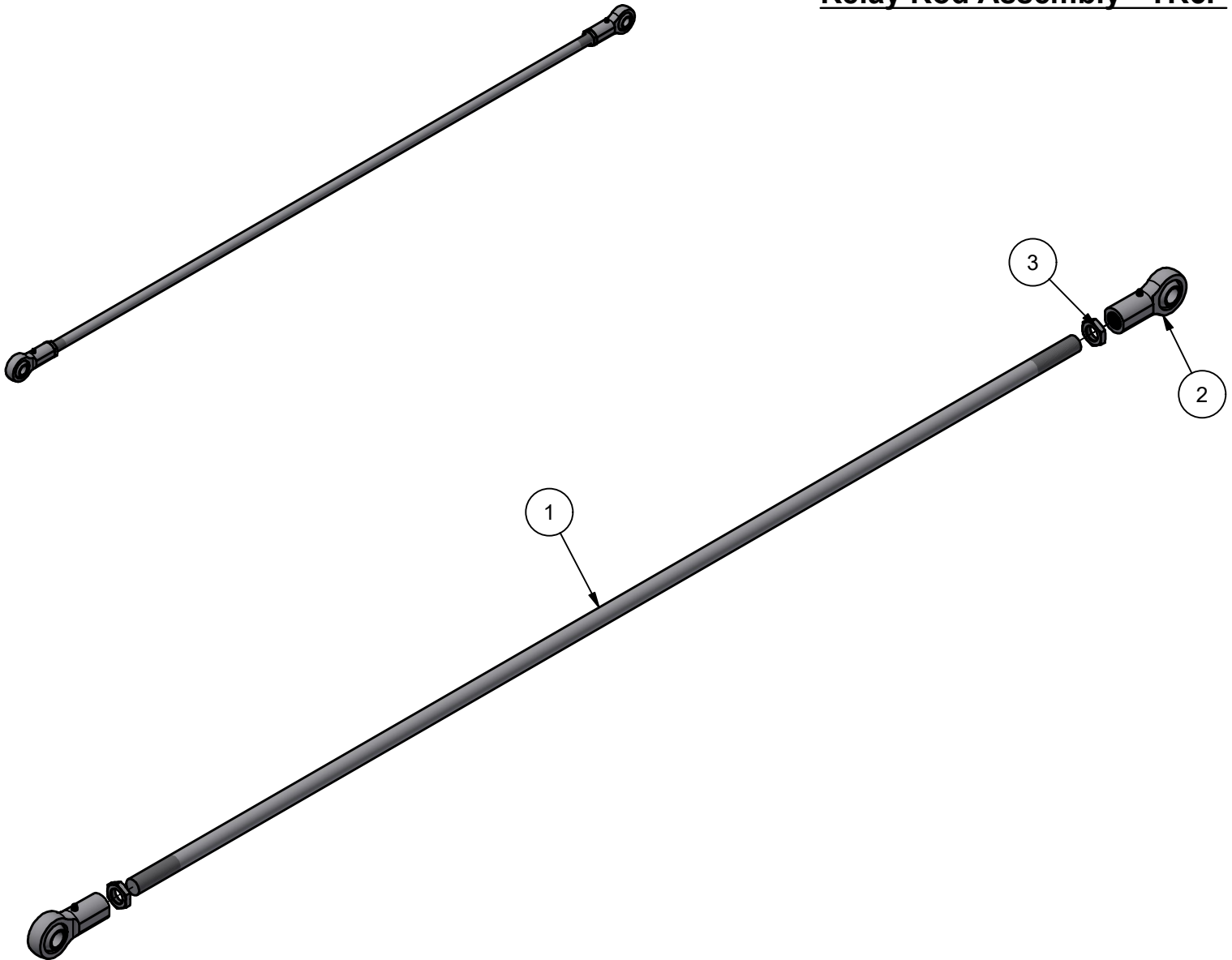


### Retract and Air Assist Panel for Top Brush - TR1-SKP-2011



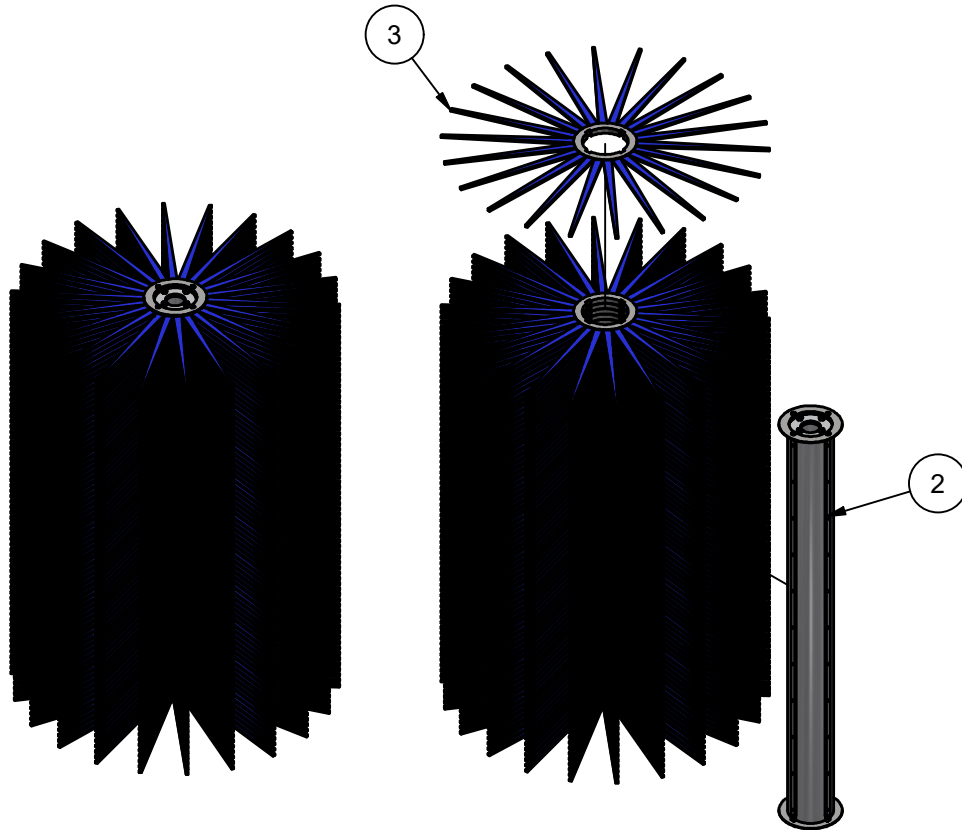
Parts List						
ITEM	PART NUMBER	DESCRIPTION	ID	QTY	ID	QTY
1	TR1-SKP-2011A	Panel Weldment	A, B, E, F, G, H	1	C, D, J	2
2	AREG1-4-R-SMC	Piston Type Air Regulator, .05MPa (7ps) - 2Mpa (123psi)	A, B, E, F, G, H	2	C, D, J	4
3	AREG1-G14	Gauge 0-160 PSI, 1/4" NPT	A, B, E, F, G, H	2	C, D, J	4
4	APS1SFB	Stand-off bracket, Air Pumping Station	A, B, E, F, G, H	2	C, D, J	4
5	SL1-4-SMC-120-3220	Valve Assembly-Solenoid: 1/4"	A, B, E, F, G, H	2	C, D, J	4
6	OR25B	Valve-1/4" quick Exhaust (Shuttle Valve)	A, B, E, F, G, H	1	C, D, J	2
7	APF3814	3/8" x 1/4" NPT Push connect fitting	A, B, E, F, G, H	6	C, D, J	12
8	NPLBR025HEX	Brass Hex Nipple 1/4" NPT	A, B, E, F, G, H	3	C, D, J	6
9	TEEBR025	Tee(Female) 1/4" FNPT	A, B, E, F, G, H	1	C, D, J	2
10	APF3814-EL90	Push-Connect Fitting, 90° Elbow, 3/8" x 1/4" NPT	A, B, E, F, G, H	1	C, D, J	2
11	TR1-SKP-2011B	Air Hose, 3/8"OD (.062Wall) x 6-1/2"LG	A, B, E, F, G, H	2	C, D, J	4
12	TR1-SKP-2011C	Air Hose, 3/8"OD (.062Wall) x 8"LG	A, B, E, F, G, H	1	C, D, J	2
13	HHCS1420050	Hex Head Cap Screw: 1/4" - 20 x 1/2"	A, B, E, F, G, H	4	C, D, J	8

### Relay Rod Assembly - TR5P

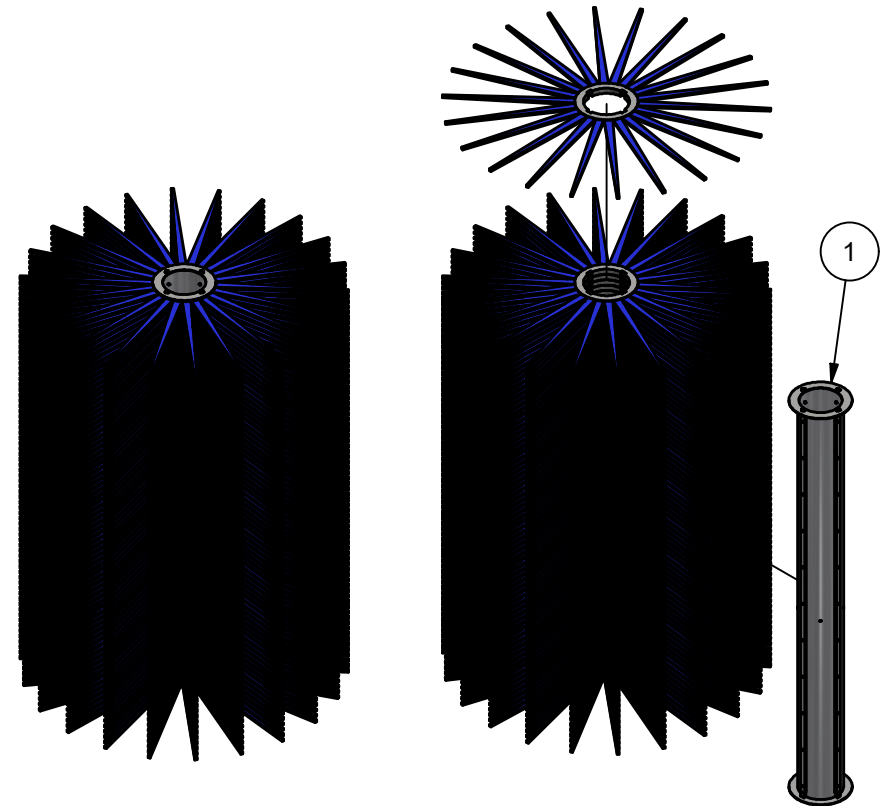


Parts List				
ITEM	PART NUMBER	QTY	DESCRIPTION	ID
1	TR5PA	1	Connecting Rod 1" OD x 77" LG	J
2	TR5PB	2	rod end 1.00 in. shaft internally threaded	J
3	HN114	2	Hex Nut 1"-14	J

### Dual Arm Top Brush With Core - TR3H



### Top Brush With Core - TR1H



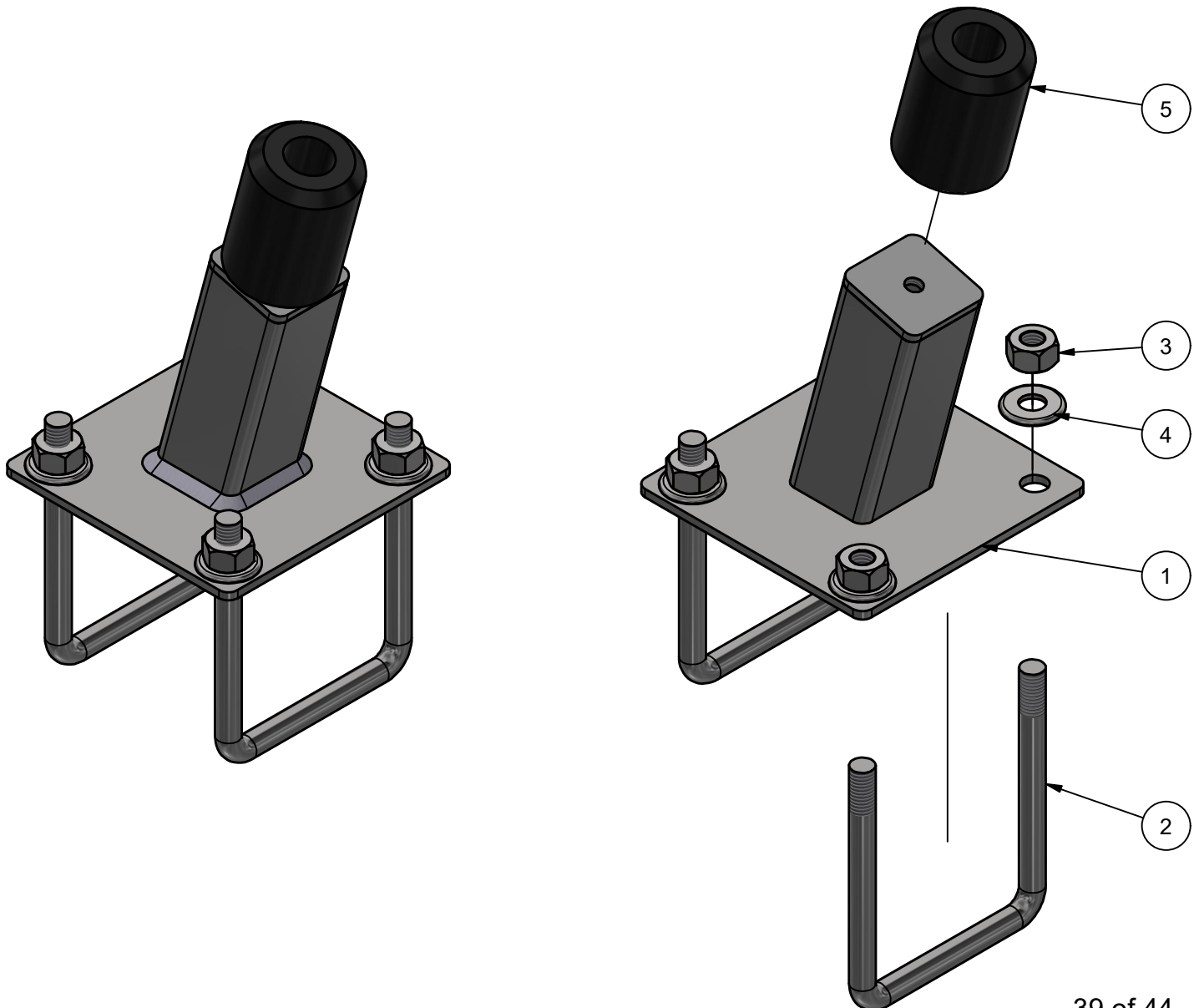
Parts List						
ITEM	PART NUMBER	DESCRIPTION	ID	QTY	ID	QTY
1	TR1HB-82	Top Brush Core: 8" Diax 82" LG	A, B	1	C, D	2
2	TR3HB-82	Dual Arm Top Brush Core:8"Diax 82"LG	E, F, G, H, J	1		
3	TR1-DISC-BLUE	Top Brush Foamaid Disc, Blue	A, B, E, F, G, H, J	72	C, D	144

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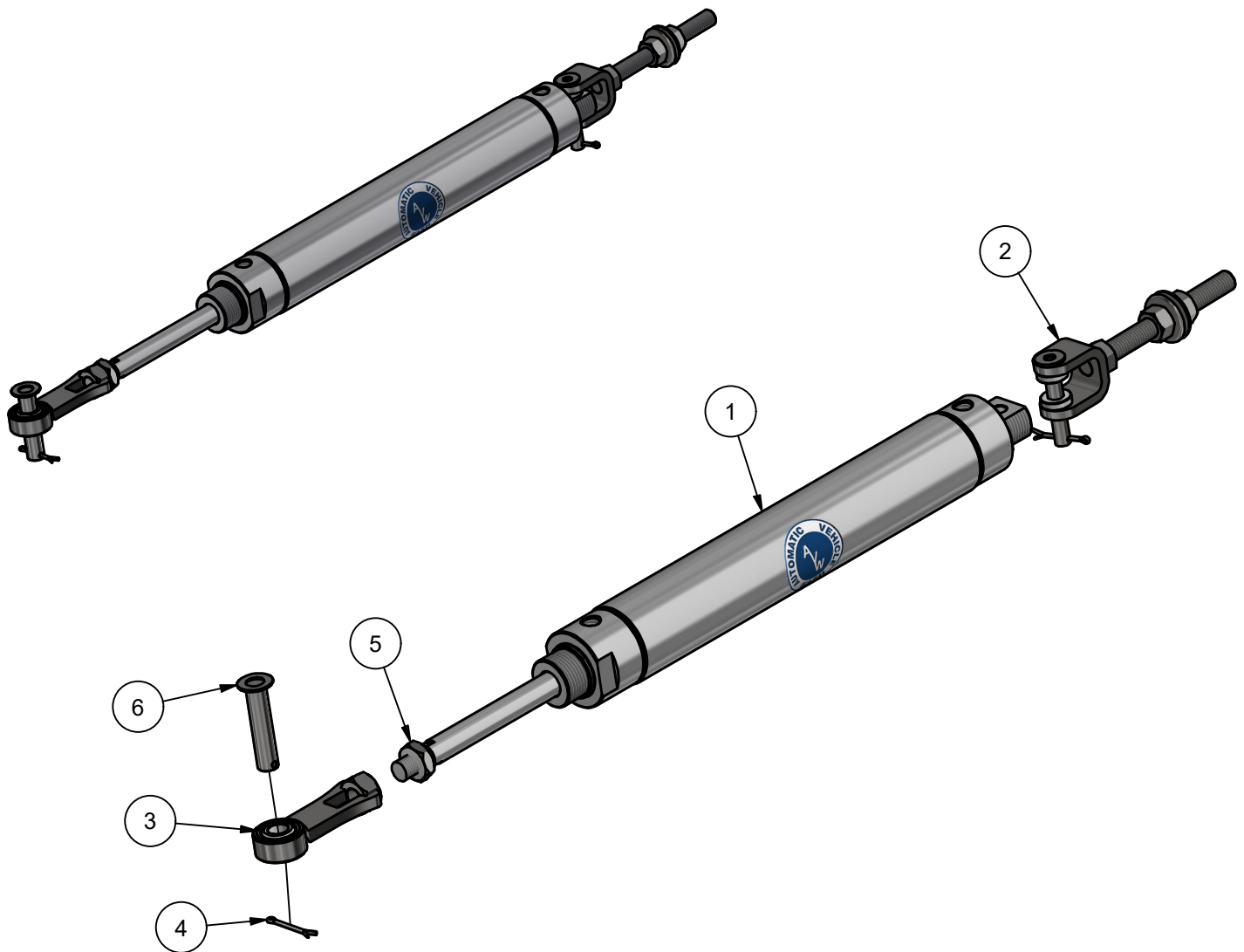
### Top Brush Bumper Assembly - TR1DB1122

Parts List								
ITEM	PART NUMBER	DESCRIPTION	ID	QTY	ID	QTY	ID	QTY
1	TR1DBA1122	Rubber Stop Weldment	A, B	1	C, D	2	E, F, G, H	4
2	UB-SQ050x1500	Square U Bolt D 1/2" x 4" x 6 1/4" LG	A, B	2	C, D	4	E, F, G, H	8
3	HN1213	Hex Nut, 1/2-13, SS	A, B	4	C, D	8	E, F, G, H	16
4	FW12	1/2" Flat Washer	A, B	4	C, D	8	E, F, G, H	16
5	WA1DBB-0521	Rubber Bumper, 3" Long	A, B	1	C, D	2	E, F, G, H	4



### Top Brush Retract Kit - TR1R

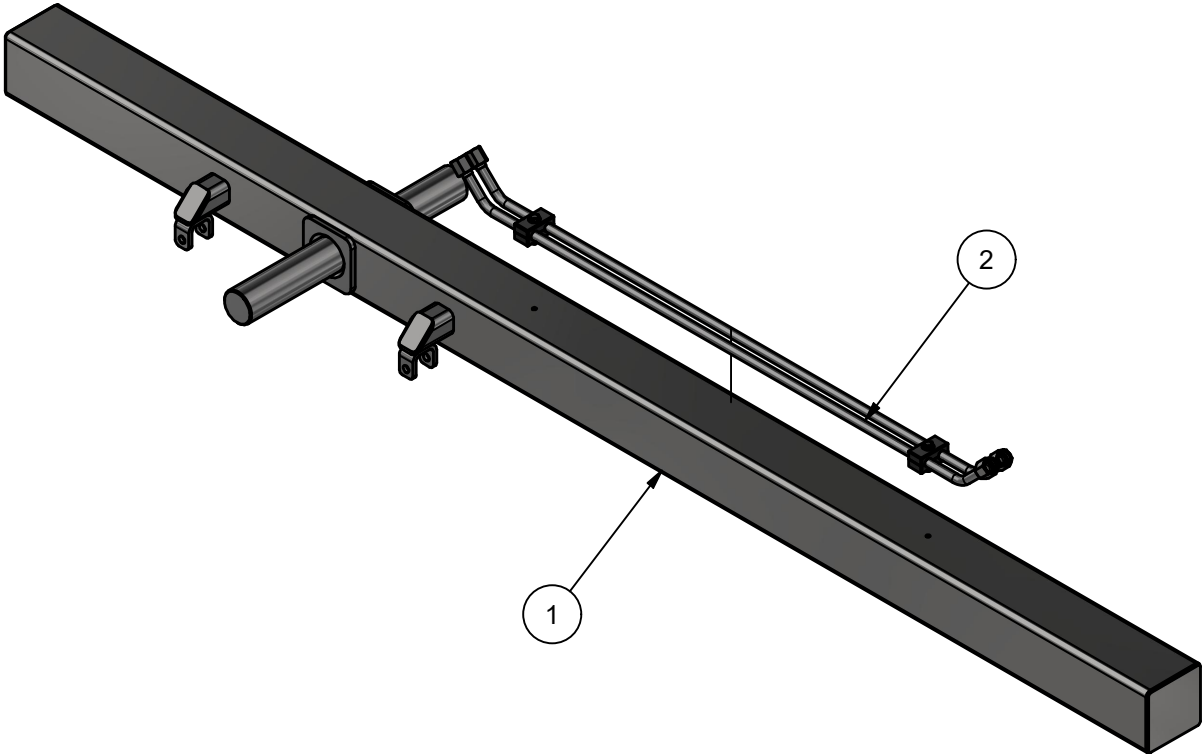
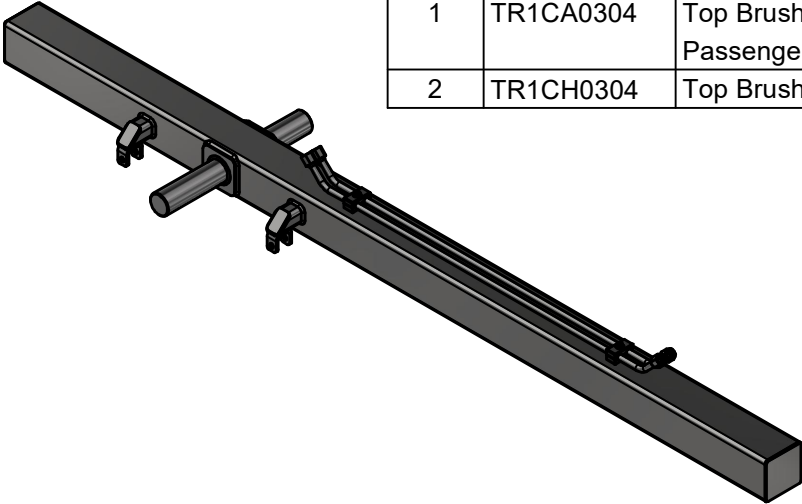
Parts List						
ITEM	PART NUMBER	DESCRIPTION	ID	QTY	ID	QTY
1	AC2X10	Air Cylinder, 2" x 10"	A, B	1	C, D, E, F, G, H	2
2	WA2GA-12	Retract kit Rear Mounting Assy	A, B	1	C, D, E, F, G, H	2
3	BJ1-2-20	Ball Joint End Rod Female 1/2"-20	A, B	1	C, D, E, F, G, H	2
4	CP	Clevis Pin	A, B	1	C, D, E, F, G, H	2
5	JN1220	Jam Nut: 1/2-20, SS	A, B	1	C, D, E, F, G, H	2
6	WA1GC-0318	Pin, 1/2" x 2-1/4", w/ hole for Cotter Pin	A, B	1	C, D, E, F, G, H	2





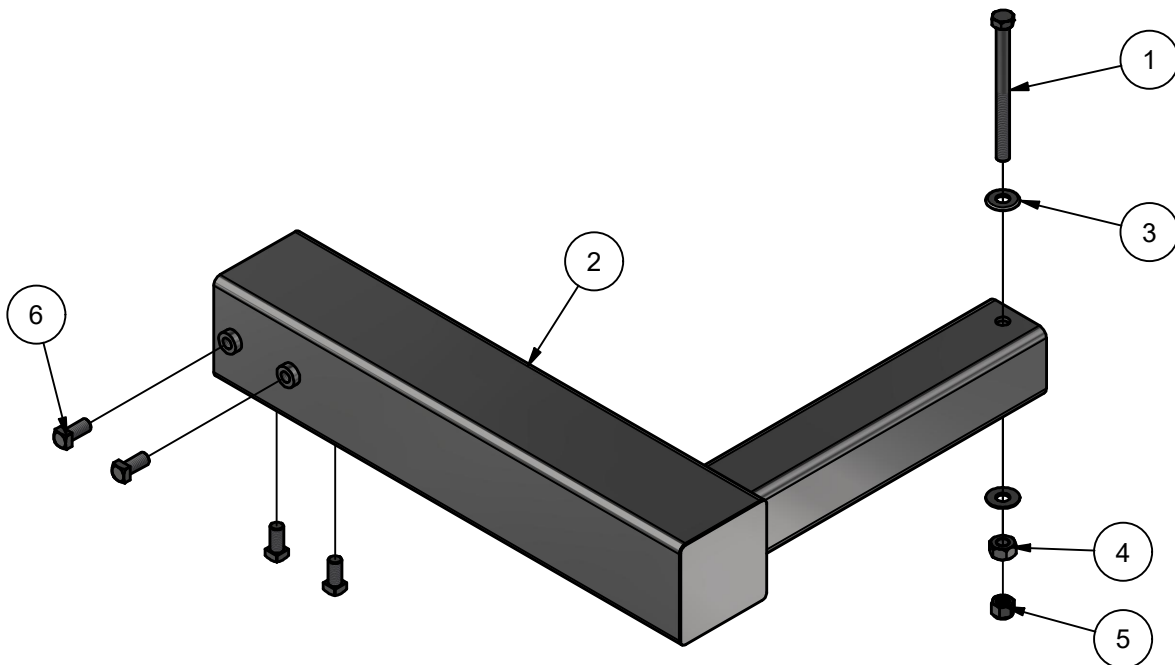
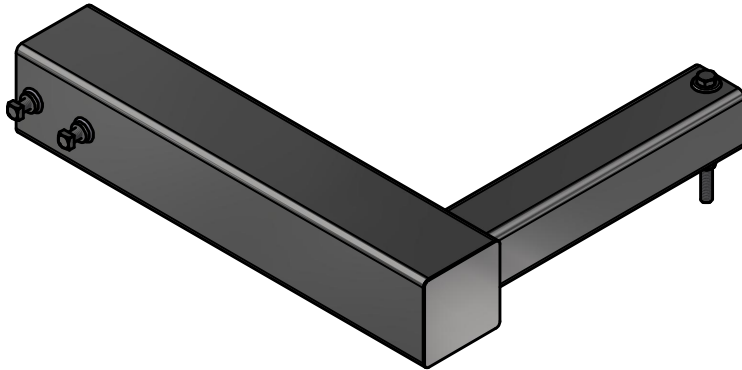
Top Brush Arm - TR1C0304

Parts List						
ITEM	PART NUMBER	DESCRIPTION	ID	QTY	ID	QTY
1	TR1CA0304	Top Brush Arm Weldment (Hydraulic) Passenger Side	A, G	1	C, E	2
2	TR1CH0304	Top Brush Hydraulic Tube Assembly	A, G	1	C, E	2



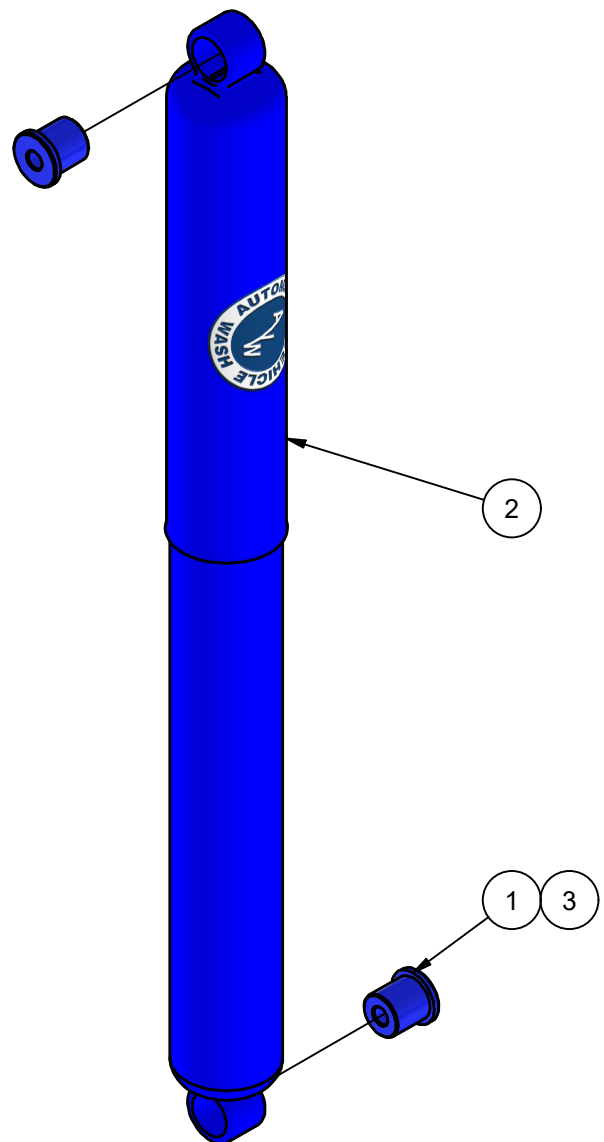
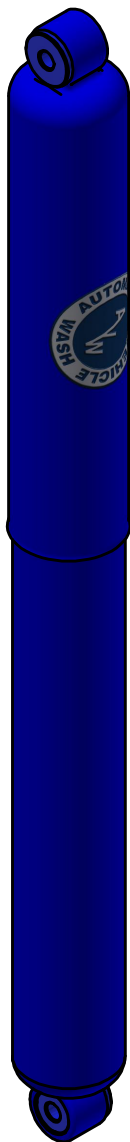
### Sleeve and Shaft Assembly, Top Brush Counterweight - TR1D

Parts List						
ITEM	PART NUMBER	DESCRIPTION	ID	QTY	ID	QTY
1	HHCS1213600	Hex Head Cap Screw: 1/2"-13 x 6", SS	A, B	1	C, D, E, F, G, H, J	2
2	TR1DB	Sleeve and Shaft Weldment for Counterweight	A, B	1	C, D, E, F, G, H, J	2
3	FW12	1/2" Flat Washer	A, B	2	C, D, E, F, G, H, J	4
4	HN1213	Hex Nut, 1/2-13, SS	A, B	1	C, D, E, F, G, H, J	2
5	NLN1213	Nylon Lock Nut: 1/2"-13 SOS	A, B	1	C, D, E, F, G, H, J	2
6	SQHS1213100	Sq. Head Set Scw 1/2"-13 x 1" LG SS	A, B	4	C, D, E, F, G, H, J	8



### Shock Absorber Assembly - WA1FA & WA2FA

Parts List								
ITEM	PART NUMBER	DESCRIPTION	ID	QTY	ID	QTY	ID	QTY
1	WA1FA1	UHMW Bush. 3/8ID x1OD x 1-1/8L	A, B	2	C, D, E, F, G, H	4		
2	MN32238	Shock Absorber w/o bushings	A, B	1	C, D, E, F, G, H	2	J	4
3	WA2FA1	UHMW Bushing ID1/2" x OD 1 1/4" x 1 3/16" LG					J	8



REVISION HISTORY				
REV	ECN #	DESCRIPTION	DATE	INITIALS
A	Initial Release	Created combined parts manual for the configurations listed on pages 6 & 7 of the TR Manual.	1/10/2025	AA