

RUNNING FLOOR II® DX

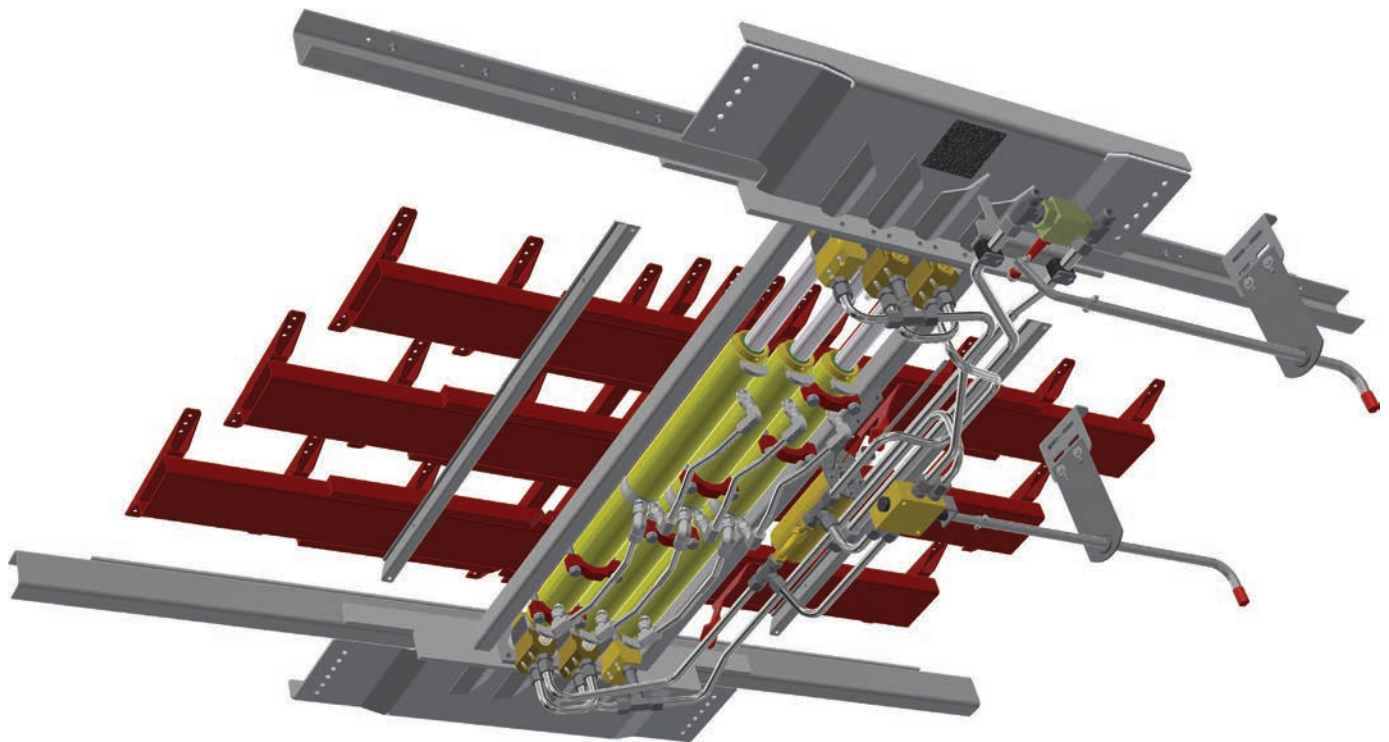
KEITH Manufacturing Co.

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11369701



PARTS CATALOG

Original Instructions

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Not all parts or services available in all regions. Some components may only be sold assembled or in kits. Contact your regional office for information on available parts and services.

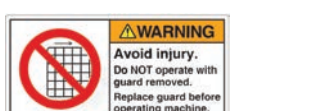
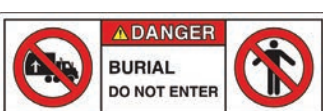
Service Information

- Use hydraulic oil or Vaseline to lubricate seals. Do NOT use grease.
- Do NOT use Teflon tape on any hydraulic components.
- When welding, ground specifically to what you are welding on, otherwise it can short across component assemblies damaging seals and gaskets.
- KEITH sells flow meters, pressure testers for troubleshooting and several tools to aid in rebuilding components and drives.

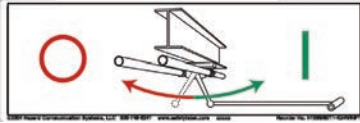
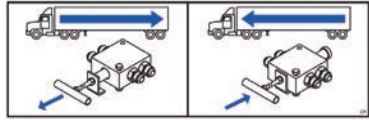
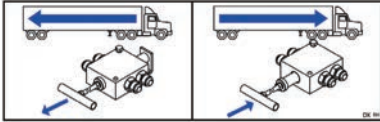
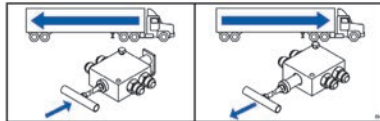
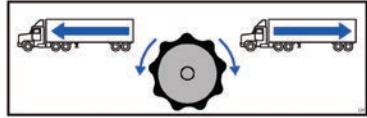
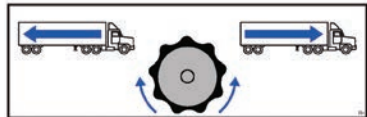
KEITH Mfg. fabricates many standard drive systems, included in this parts catalog, and also fabricates custom drive systems, too numerous to include, therefore KEITH requires the following information from your drive system to ensure we provide you with most accurate information. Please have the following information readily available before contacting KEITH for support:

- Model Number (Located on the Serial Plate of the drive unit)
- Serial Number (Located on the Serial Plate on the drive unit)
- Quantity & length of floor slats
- Vehicle make and unit installer

Safety Decals

		Safety Decal Placement Guide #'s →		84804319	84804321	84804320	84804322	84804323
Old - 2019 (Worded)	2020 - Future (Wordless)		Decal Kit #'s →	RFII MCV LH Kit #84804331	RFII MCV DX RH Kit #84804333	RFII MCV DXE RH Kit #84804332	KFD & RFII ECV LH Kit #84804334	KFD & RFII ECV RH Kit #84804335
		1	84804311	1	1	1	1	1
		2	84804312	4	4	4	4	4
		3	84804313	2	2	2	2	2
		4	84804314	2	2	2	2	2
		5	84804315	2	2	2	2	2
		6	84804316	2	2	2	2	2
		7	84804317	1	1	1	1	1
		8	84804318	1	1	1	1	1

Safety Decals

		Safety Decal Placement Guide #s →		84804319	84804321	84804320	84804322	84804323
<u>Old - 2019</u> <u>(Worded)</u>	<u>2020 - Future</u> <u>(Wordless)</u>	Decal Kit #s →		RFII MCV LH Kit #84804331	RFII MCV DX RH Kit #84804333	RFII MCV DXE RH Kit #84804332	KFD & RFII ECV LH Kit #84804334	KFD & RFII ECV RH Kit #84804335
		20	84804129	1	1	1	1	1
Controls on Left Side of Truck/Trailer		22	84804131	1				
		23	84803906		1			
		24	84804130			1		
Controls on Left Side of Truck/Trailer		25	84803904				1	
		26	84803905					1

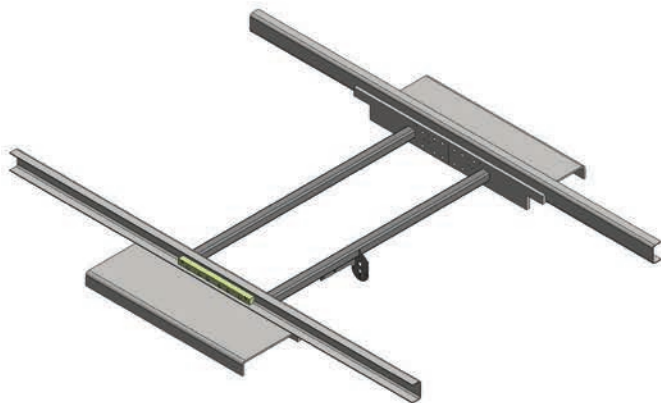
Drive Frame Styles



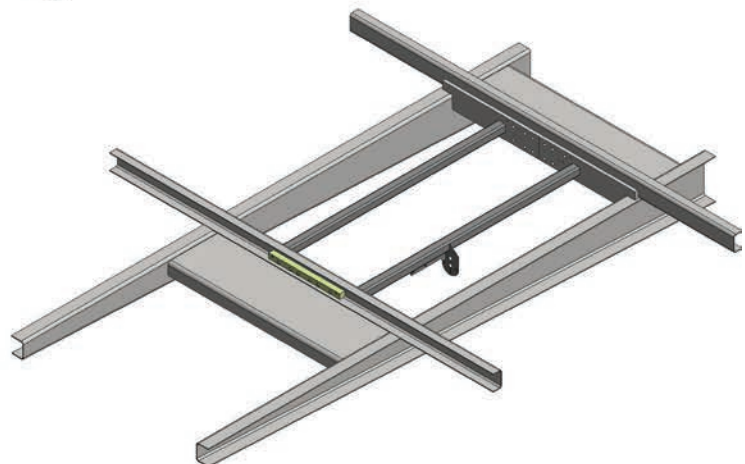
STEEL UNIVERSAL MOUNT



ALUMINUM UNIVERSAL MOUNT



STEEL CENTER MOUNT



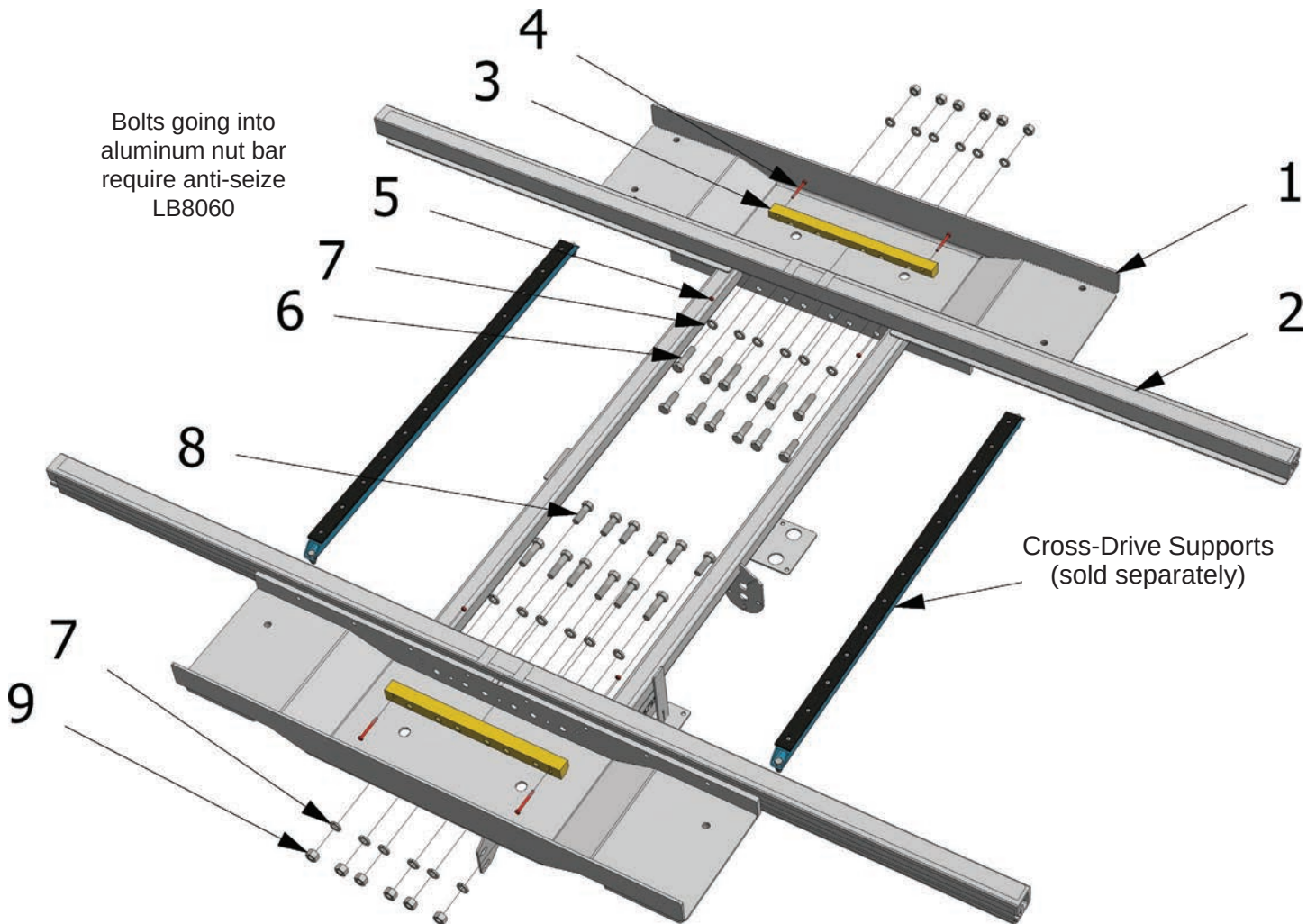
STEEL CENTER MOUNT IN RAILS



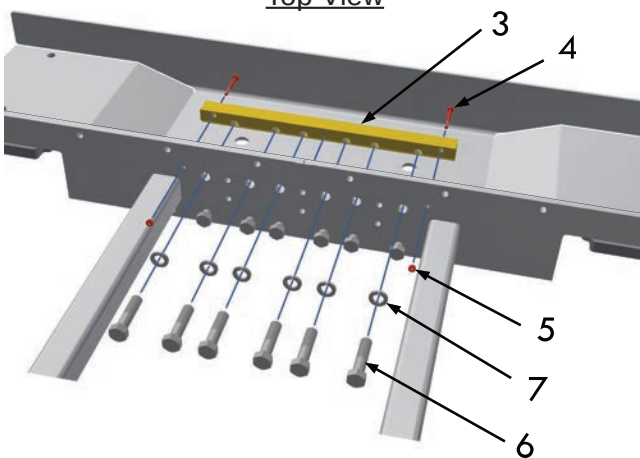
STEEL OUTSIDE PERIMETER MOUNT

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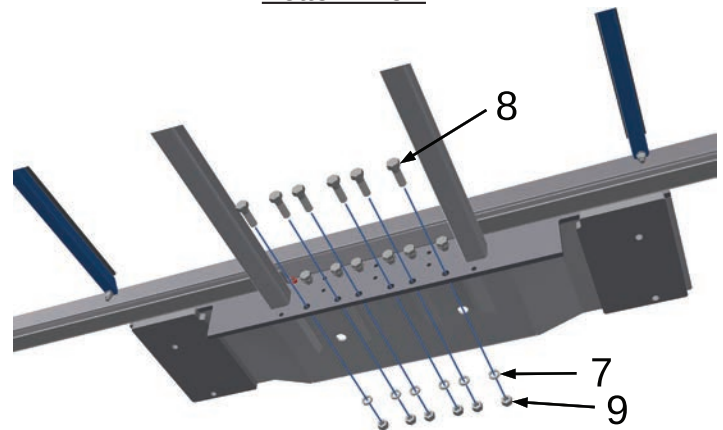
Drive Frame & Related Components



Top View



Bottom View



Drive Frame & Related Components

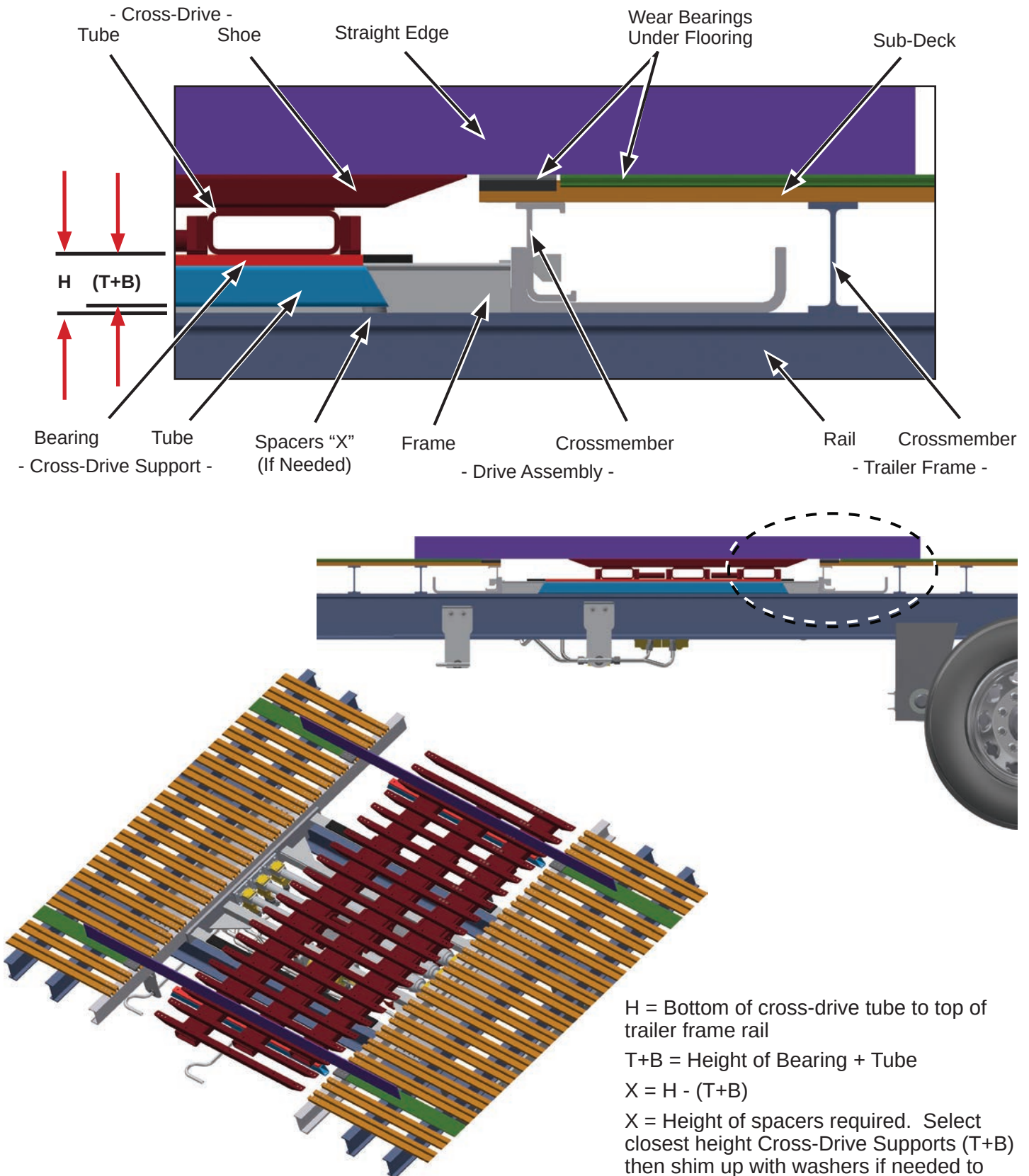
ID#	Qty	SAE Part #	Metric Part #	DESCRIPTION
-	-	-(1)	-(1)	Drive Frame Assembly (Includes items 1-16)
1 ⁽¹⁾	1	-	-	Drive Frame Steel
2 ^{(1) (2)}	2	w/frame	w/frame	Channel Formed 4"x2 1/4"x3/16"
3 ⁽¹⁾	2	01253701	01253702	Nut Bar Cylinder Mount 4.5" Cylinder Centers
	2	01173101	01173102	Nut Bar Cylinder Mount 5.0" Cylinder Centers
	2	01253801	01253802	Nut Bar Cylinder Mount 6.0" Cylinder Centers
	2	05181401	05181402	Nut Bar Cylinder Mount 10.0" Cylinder Centers
	2	05047001	05047002	Nut Bar Cylinder Mount 10.5" Cylinder Centers
4	4	86419500	87004530	Bolt Hex (GR5 1/4"x2 1/4", GR8.8 M6 x 1 x 60) (3.0" Cyl)
	4	86420500	87004570	Bolt Hex (GR5 1/4"x2 3/4", GR8.8 M6 x 1 x 70) (3.5" Cyl)
	4	86420500	87004570	Bolt Hex (GR5 1/4"x2 3/4", GR8.8 M6 x 1 x 70) (4.0" Cyl)
5	4	86626000	87100500	Hex Nut Nylock (1/4", M6 x 1) Zinc
6	12	86466500	87016650	Bolt Hex (GR8 5/8"x2 3/4", 10.9 M16 x 2 x 65) (3.0" Cyl)
	12	86467000	87016700	Bolt Hex (GR8 5/8"x3", 10.9 M16 x 2 x 70) (3.5" Cyl)
	12	86466000	87016700	Bolt Hex (GR8 5/8"x2-1/2", 10.9 M16 x 2 x 70) (4.0" Cyl)
7	24	86559000	87078000	Washer Lock (5/8", M16)
8	12	86464500	87016500	Bolt Hex (GR8 5/8"x2", 10.9 M16 x 2 x 50) (3.0" Cyl)
	12	86465500	87016520	Bolt Hex (GR8 5/8"x2 1/4", 10.9 M16 x 2 x 55) (3.5" Cyl)
	12	86464500	87016520	Bolt Hex (GR8 5/8"x2", 10.9 M16 x 2 x 55) (4.0" Cyl)
9	12	86632000	87103000	Nut Hex (5/8", M16 x 2)

⁽¹⁾ Part numbers and descriptions vary based on the drive configuration and application. Drive serial number must be provided to determine actual part numbers.

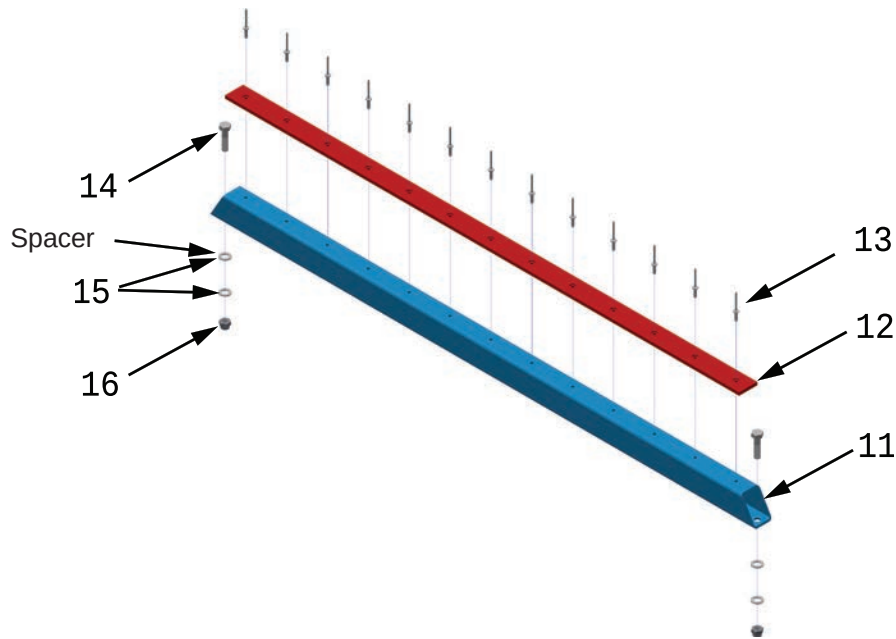
⁽²⁾ Formed Channels are included with frame. In many applications they are non-removable.

**Longer bolts (#6 & #8) may
be required for thicker
Aluminum frames!**

Drive Leveling / Installation Reference



Cross-Drive Support Assemblies

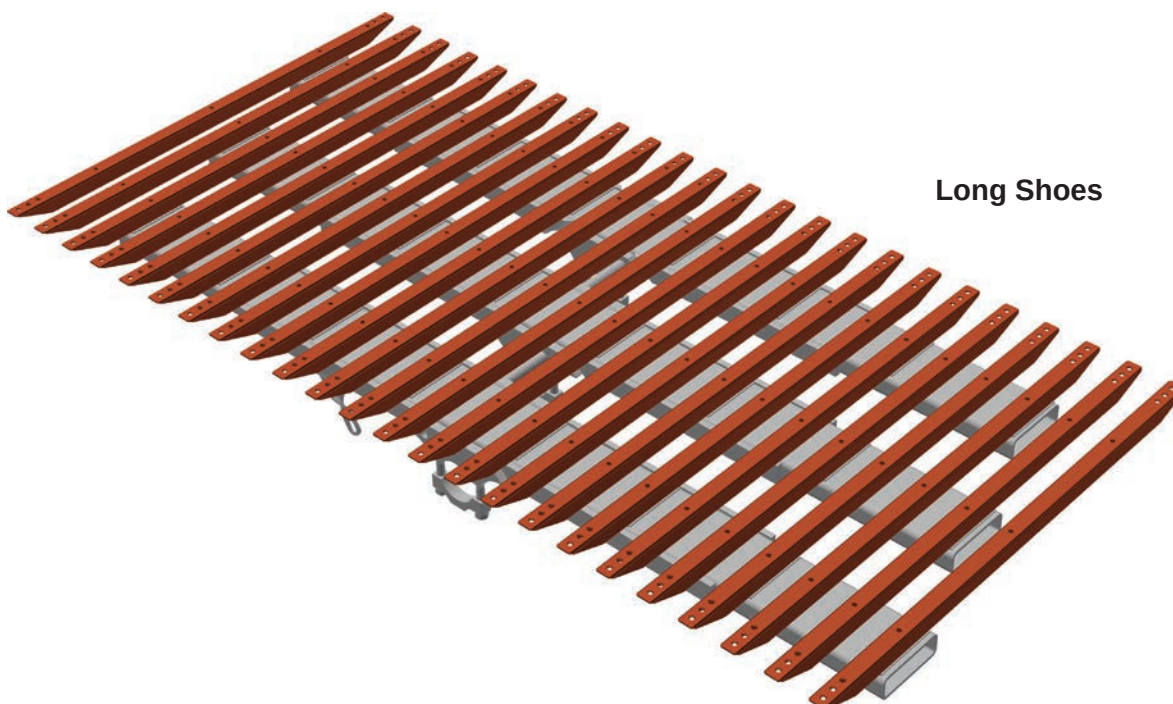
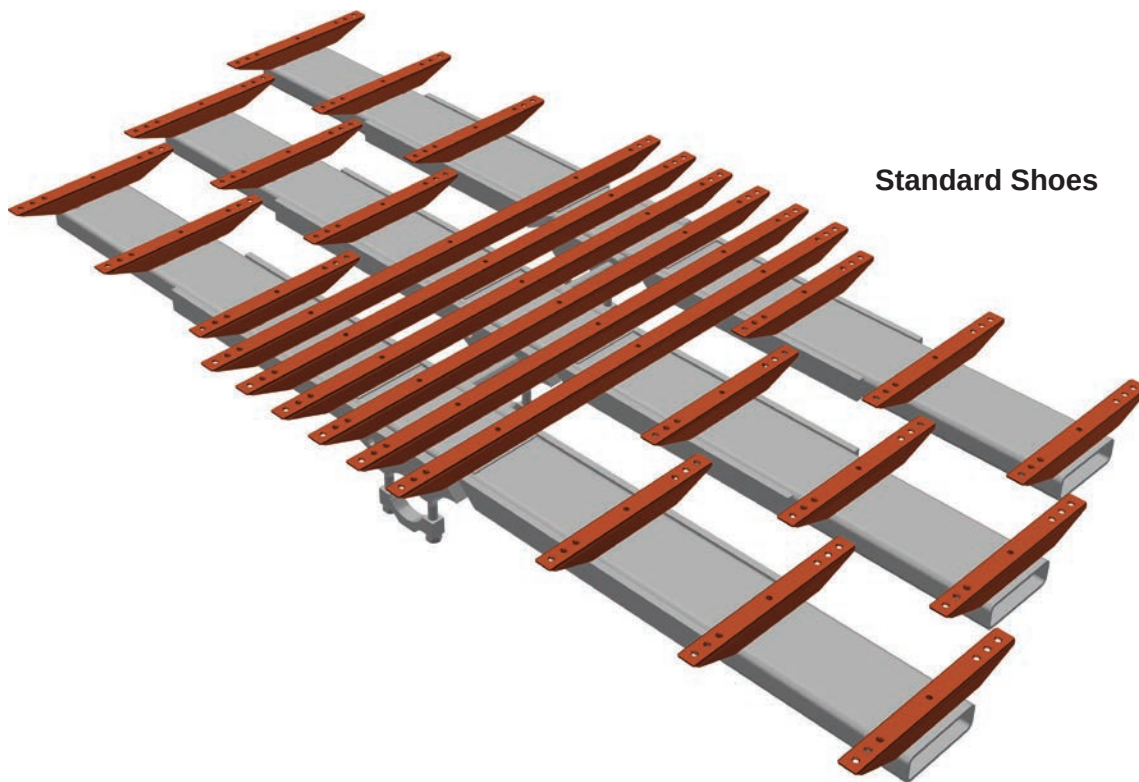


Cross-Drive Support Assemblies

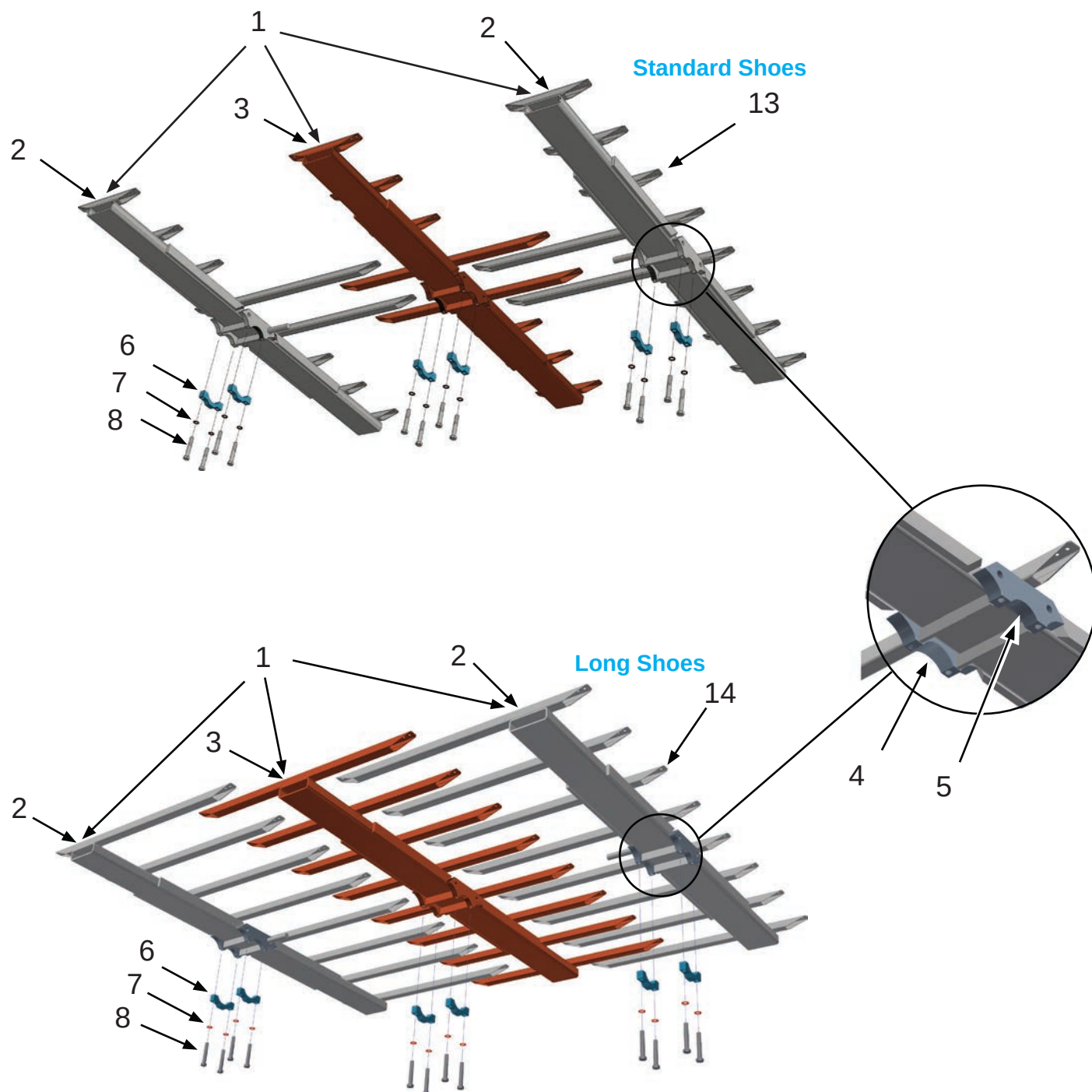
ID #	Qty	Part #	Part #	Part #	DESCRIPTION
- ⁽¹⁾	2	03467804	03467802	03467805	Cross-Drive Support Assembly (Includes items 11-17)
T+B	-	1-1/2" [38 mm]	1-5/8" [41 mm]	1-7/8" [48 mm]	Combined Height of Tube & Bearing (#11+#12)
11 ⁽¹⁾	1	03467702			Tube ST 1-1/4"x1-1/4"x45"
12 ⁽¹⁾	1	03453901	-	-	Bearing Strip UHMW 1/4"x1-1/2"x42-1/2"
		-	03453902	-	Bearing Strip UHMW 3/8"x1-1/2"x42-1/2"
		-	-	03453904	Bearing Strip UHMW 5/8"x1-1/2"x42-1/2"
13	13	86528150			Rivet 3/16"x1/2" AB6-8
14	2	87008520			Bolt Hex M10 x 1.5 x 40 mm
15	4	87076000			Washer Flat M10 (1/16" Spacer "X")
16	2	87102000			Nut Hex Nylock M10 x 1.5

⁽¹⁾ Part numbers and descriptions vary based on the drive configuration and application. Drive serial number or measurements from drive installed in trailer must be provided to determine actual part numbers.

Cross-Drive Shoe Variations



Cross-Drive Assembly

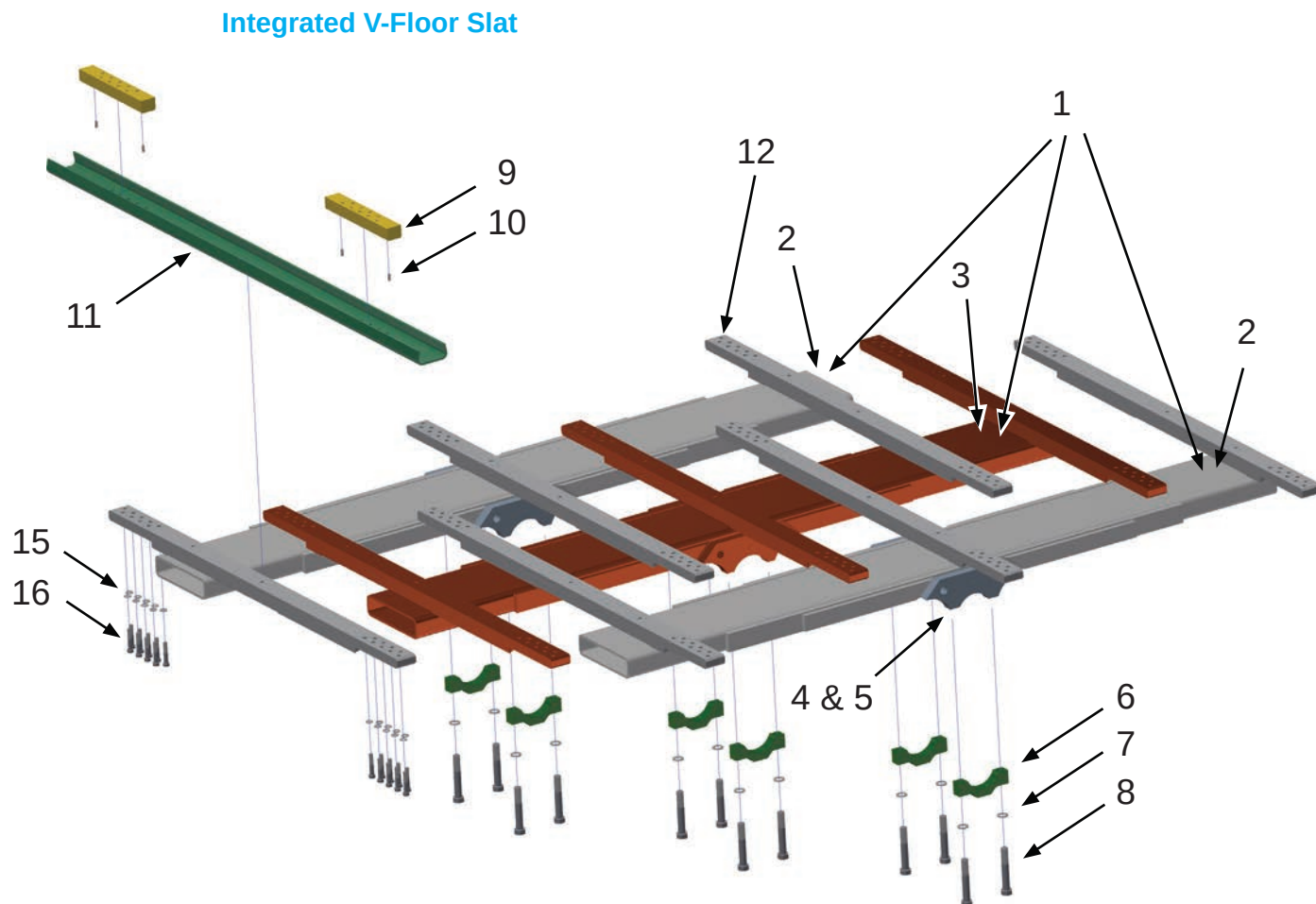


Cross-Drive Assembly

ID#	Qty	3.0" Cyl SAE Part #	3.0" Cyl Metric Part #	3.5" Cyl SAE Part #	3.5" Cyl Metric Part #	4.0" Cyl SAE Part #	4.0" Cyl Metric Part #	DESCRIPTION
1 ⁽¹⁾	-	-	-	-	-	-	-	Cross-Drive Set (Includes items 2-5)
2 ⁽¹⁾	2	-	-	-	-	-	-	Cross-Drive #1 & #3
3 ⁽¹⁾	1	-	-	-	-	-	-	Cross-Drive #2
4	1/XDR	03024501	03024502	03024601	03024602	06837801	06837802	Upper Threaded Weld On Clamp
		-	-	08053301	08053302	-	-	Upper Threaded Weld On Clamp 1.5" Thick
5	1/XDR	03024401	03024402	03024701	03024702	06837901	06837902	Upper Smooth Weld On Clamp
		-	-	08053201	08053202	-	-	Upper Smooth Weld On Clamp 1.5" Thick
6	3	-	-	-	-	09611701		Lower Threaded Cross-Drive Clamp
	6	03910501		03910601		06839301		Lower Smooth Cross-Drive Clamp
7	12	86559090				87078401		Washer Nord-Lock 5/8", 3/4" (2 PCS=1)
8	12	86470010	-	-	-	-	-	Bolt Hex Patchloc GR8 5/8"x4"
	12	-	87017880	-	-	-	-	Bolt Hex Patchloc M16x100mm CL10.9
	12	-	-	86470510	-	-	-	Bolt Hex Patchloc GR8 5/8"x4 1/2"
	12	-	-	-	87018510	-	-	Bolt Hex Patchloc M16x120mm CL10.9
	6	-	-	-	-	86474050	-	Bolt Hex 3/4"x5" GR8 ZN
	6	-	-	-	-	86474060	-	Bolt Hex 3/4"X5-1/2" GR8 ZN
	6	-	-	-	-	-	87019600	Bolt Hex M20x120 CL10.9
	6	-	-	-	-	-	87020100	Bolt Hex M20x140 CL10.9
13	1/slat	03005501				-	-	Short Drive Shoe 14" 3 Hole (Standard)
	1/slat	04213901				-	-	Short Drive Shoe 15" 4 Hole (Standard)
14	1/slat	03719001				-	-	Long Drive Shoe 43" 3 Hole
	1/slat	07690601		03005701		07975810		Long Drive Shoe 43" 4 Hole 3/8" 5/16" holes, No Holes

⁽¹⁾ Part numbers and descriptions vary based on drive configuration and application. Drive serial number must be provided to determine actual part numbers.

Cross- Drive Assembly (V-Floor)



Cross-Drive Assembly (V-Floor)

ID#	Qty	3.0" Cyl SAE Part #	3.0" Cyl Metric Part #	3.5" Cyl SAE Part #	3.5" Cyl Metric Part #	4.0" Cyl SAE Part #	4.0" Cyl Metric Part #	DESCRIPTION
1 ⁽¹⁾	-	-	-	-	-	-	-	Cross-Drive Set (Includes items 2-5)
2 ⁽¹⁾	2	-	-	-	-	-	-	Cross-Drive #1 & #3
3 ⁽¹⁾	1	-	-	-	-	-	-	Cross-Drive #2
4	1/XDR	03024501	03024502	03024601	03024602	06837801	06837802	Upper Threaded Weld On Clamp
5	1/XDR	03024401	03024402	03024701	03024702	06837901	06837902	Upper Smooth Weld On Clamp
6	3	-	-	-	-	09611701		Lower Threaded Cross-Drive Clamp
	6	03910501		03910601		06839301		Lower Smooth Cross-Drive Clamp
7	12	86559090				87078401		Washer Nord-Lock 5/8", 3/4" (2 PCS=1)
8	12	86470010	-	-	-	-	-	Bolt Hex Patchloc GR8 5/8"x4"
	12	-	87017880	-	-	-	-	Bolt Hex Patchloc M16x100mm CL10.9
	12	-	-	86470510	-	-	-	Bolt Hex Patchloc GR8 5/8"x4-1/2"
	12	-	-	-	87018510	-	-	Bolt Hex Patchloc M16x120mm CL10.9
	12	-	-	-	-	86474050	-	Bolt Hex 3/4"x5" GR8 ZN
	12	-	-	-	-	86474060	-	Bolt Hex 3/4"X5-1/2" GR8 ZN
	12	-	-	-	-	-	87019600	Bolt Hex M20x120 CL10.9
	12	-	-	-	-	-	87020100	Bolt Hex M20x140 CL10.9
9	2/slat	05979701						Nut Bar
10	1/bar	86651405						Roll Pin 1/4" x 5/8"
11	1/slat	06341401						Drive Channel Aluminum 10.0" SC
	1/slat	06191601						Drive Channel Aluminum 10.5" SC
	1/slat	10029801						Drive Channel Aluminum 11.5" SC
	1/slat	06006201						Drive Channel Steel 10.0" SC
	1/slat	05977701						Drive Channel Steel 10.5" SC
	1/slat	09884001						Drive Channel Steel 11.5" SC
12 ⁽¹⁾	1/slat	05977601						V-Floor Long Drive Shoe 9 hole
15	18/slat	86555000						Washer Lock 3/8"
16	18/slat	86439521						Bolt Hex Patchloc 3/8"x2" ZN

⁽¹⁾ Part numbers and descriptions vary based on the drive configuration and application. Drive serial number must be provided to determine actual part numbers. Some shoes #12 will require (2) shim washers (86552520 Flat Washer 5/16"x1"x1/8") under them for proper installation.

Hydraulic Tubes & Fittings

KEITH Mfg. fabricates many standard drive systems, included in this parts catalog, and also fabricates custom drive systems, too numerous to include, therefore KEITH requires the following information from your drive system to ensure we provide you with most accurate information. Please have the following information readily available before contacting KEITH for support:

- Model Number (Located on the Serial Plate of the drive unit)
- Serial Number (Located on the Serial Plate on the drive unit)
- Quantity & length of floor slats
- Vehicle make and unit installer

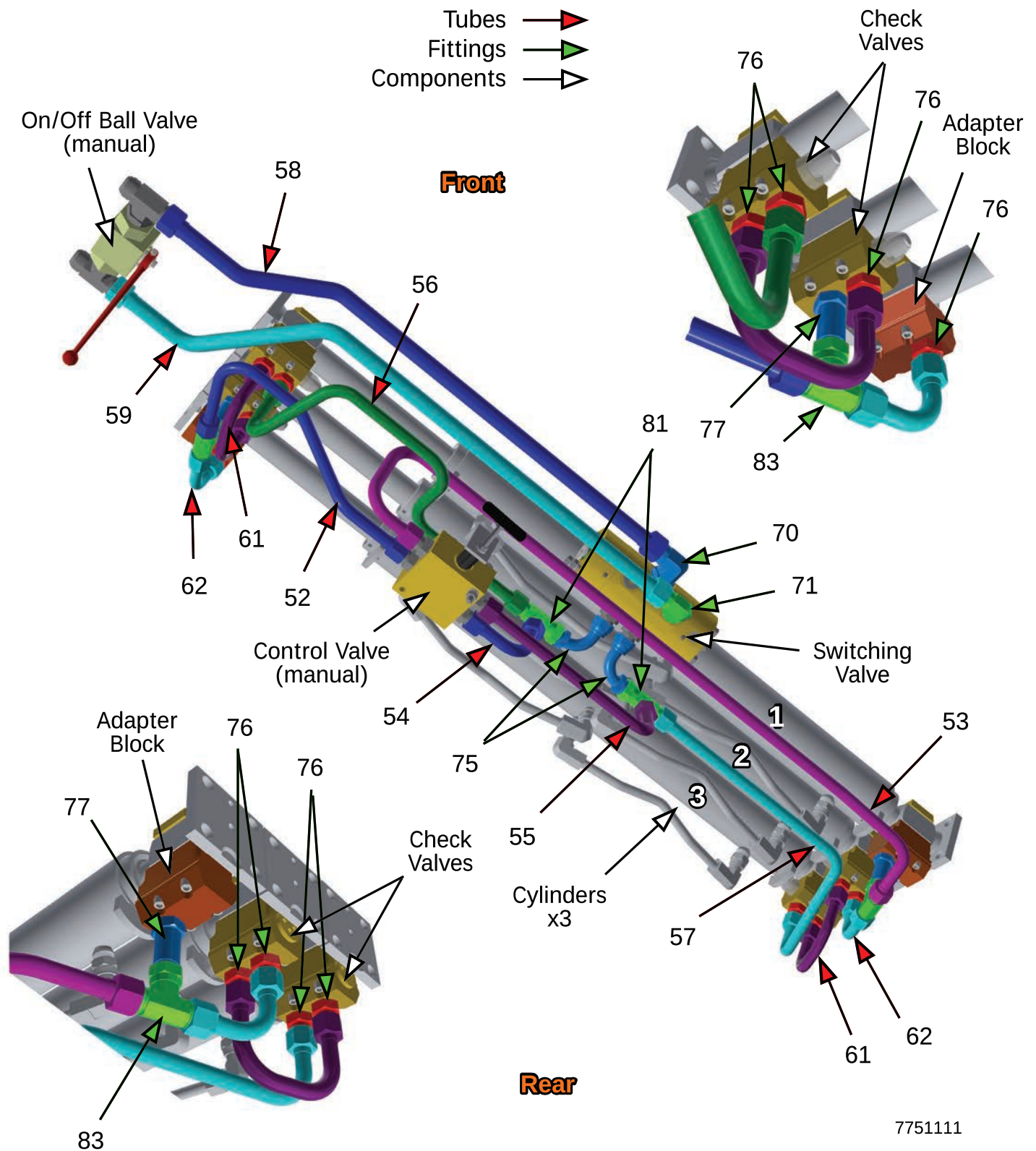
Service Information

- Use hydraulic oil or Vaseline to lubricate seals. Do NOT use grease.
- Do NOT use Teflon tape on any hydraulic components.
- Use the following chart for tightening tubes and fittings.

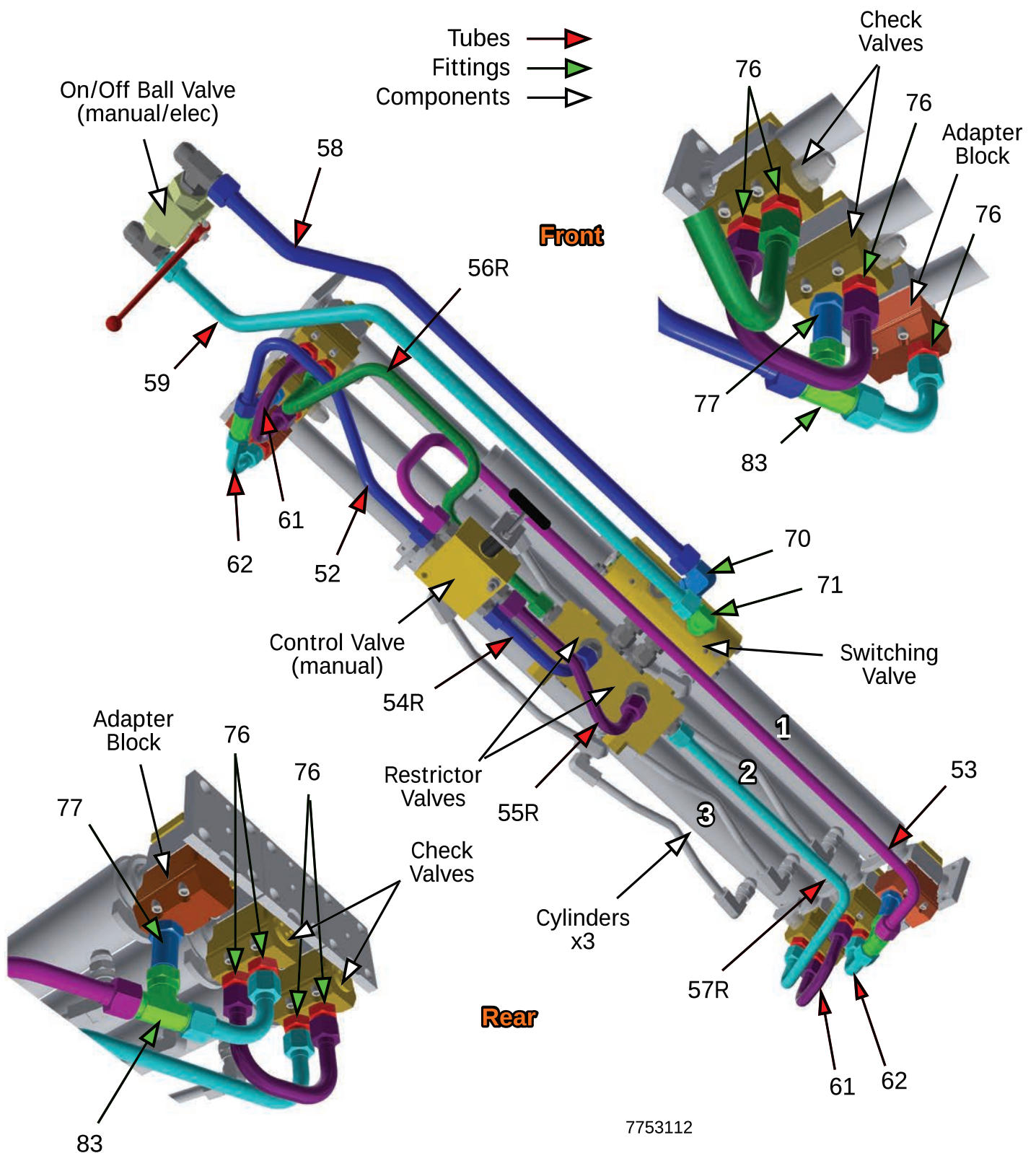
Sizes	Tubes	Swivel Nuts or Hoses
-6 JIC	2 FFWR	1-1/2 FFWR
-8 JIC	2 FFWR	1-1/2 FFWR
-12 JIC	1-1/2 FFWR	1-1/4 FFWR
-16 JIC	1-1/2 FFWR	1 FFWR
-12 ORFS	1/2 FFWR	1/2 FFWR
-16 ORFS	1/2 FFWR	1/2 FFWR

- FFWR (Flats From Wrench Resistance)
- JIC (Joint Industry Council, 37° flare seating surface)
- ORFS (O-Ring Face Seal)

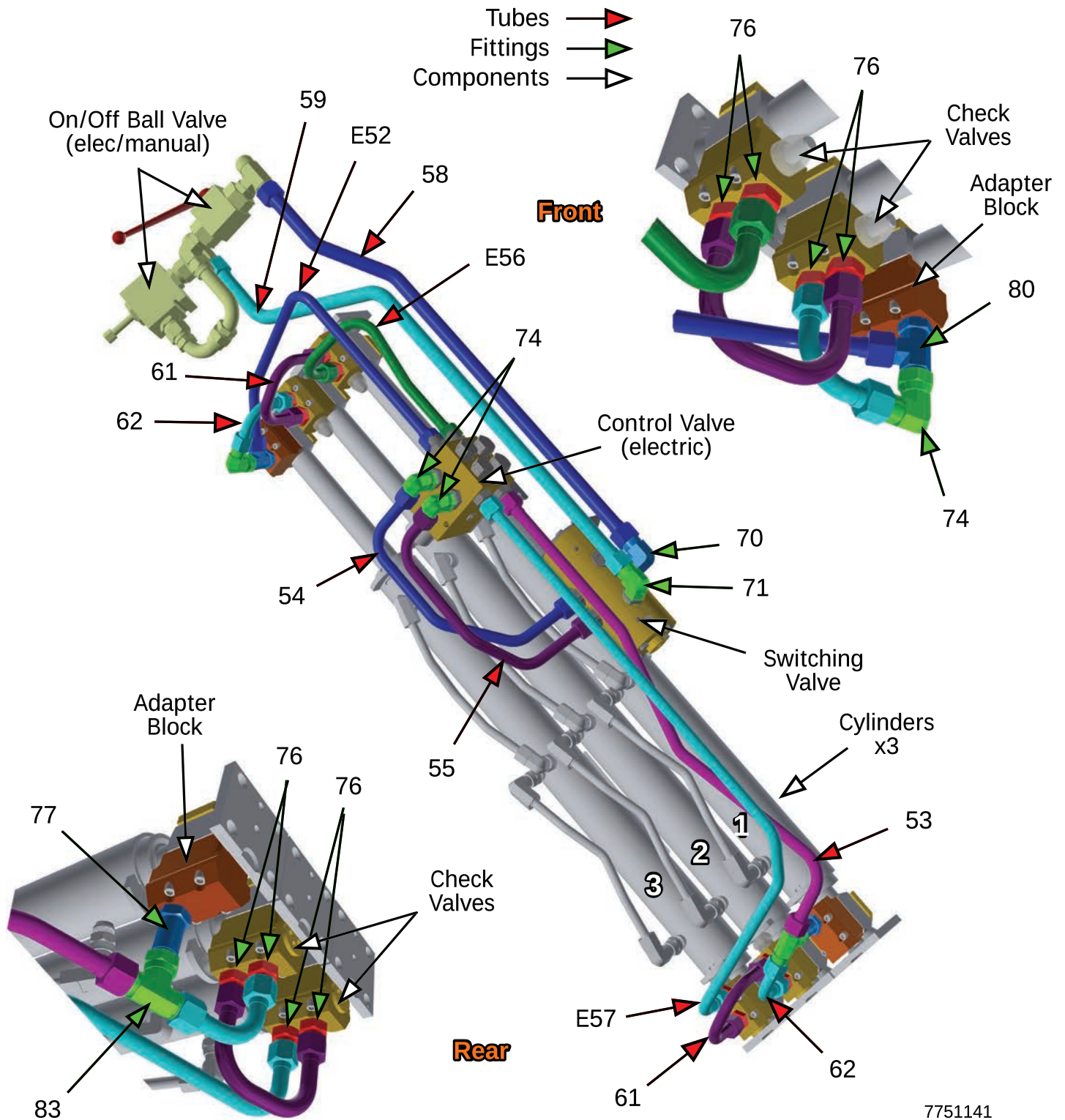
DX Left Side Controls - Manual Control Valve



DX Left Side Controls - Manual Control Valve with Restrictor Valves

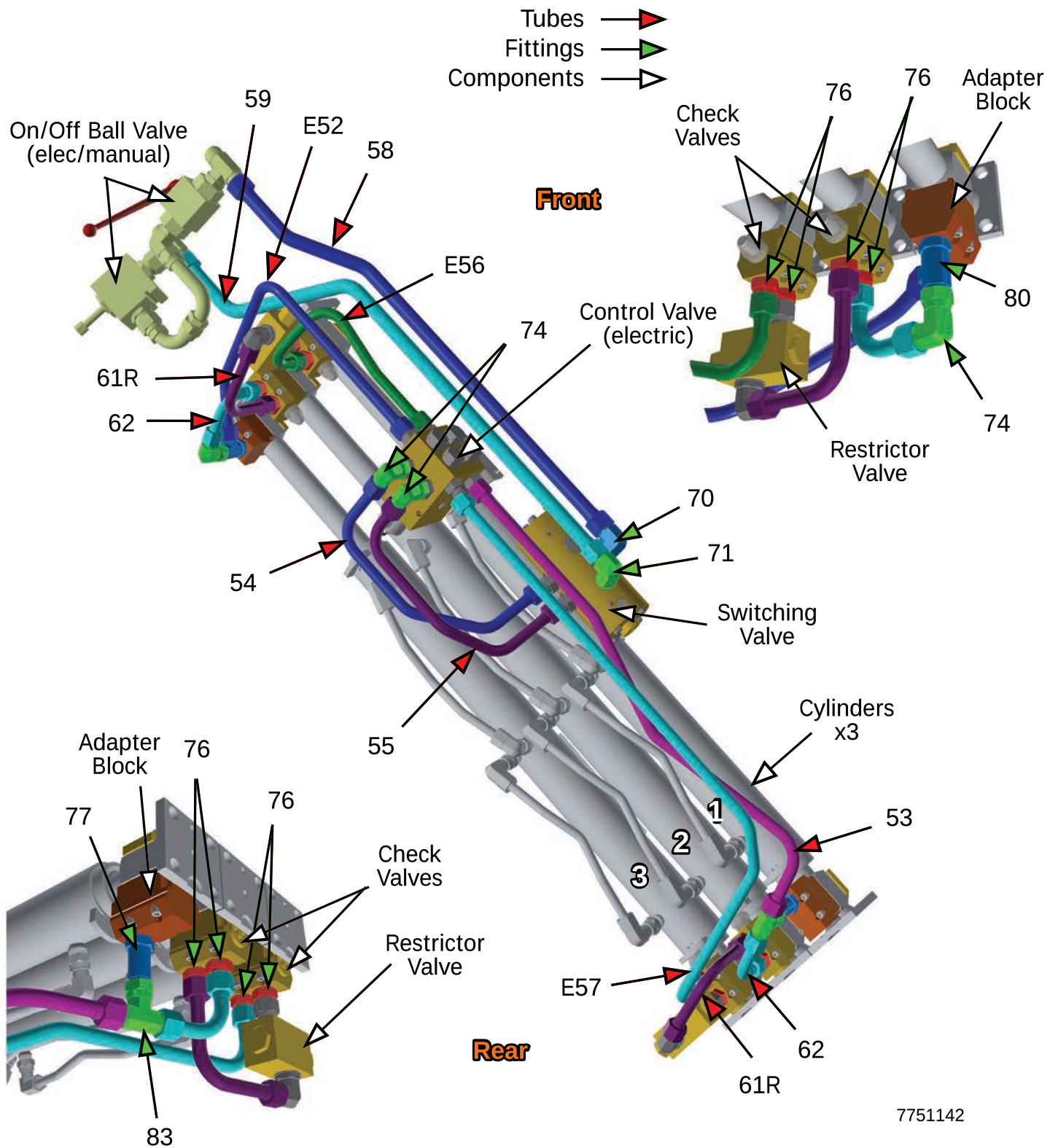


DX Left Side Controls - Electric Control Valve



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DX Left Side Controls - Electric Control Valve with Restrictor Valves

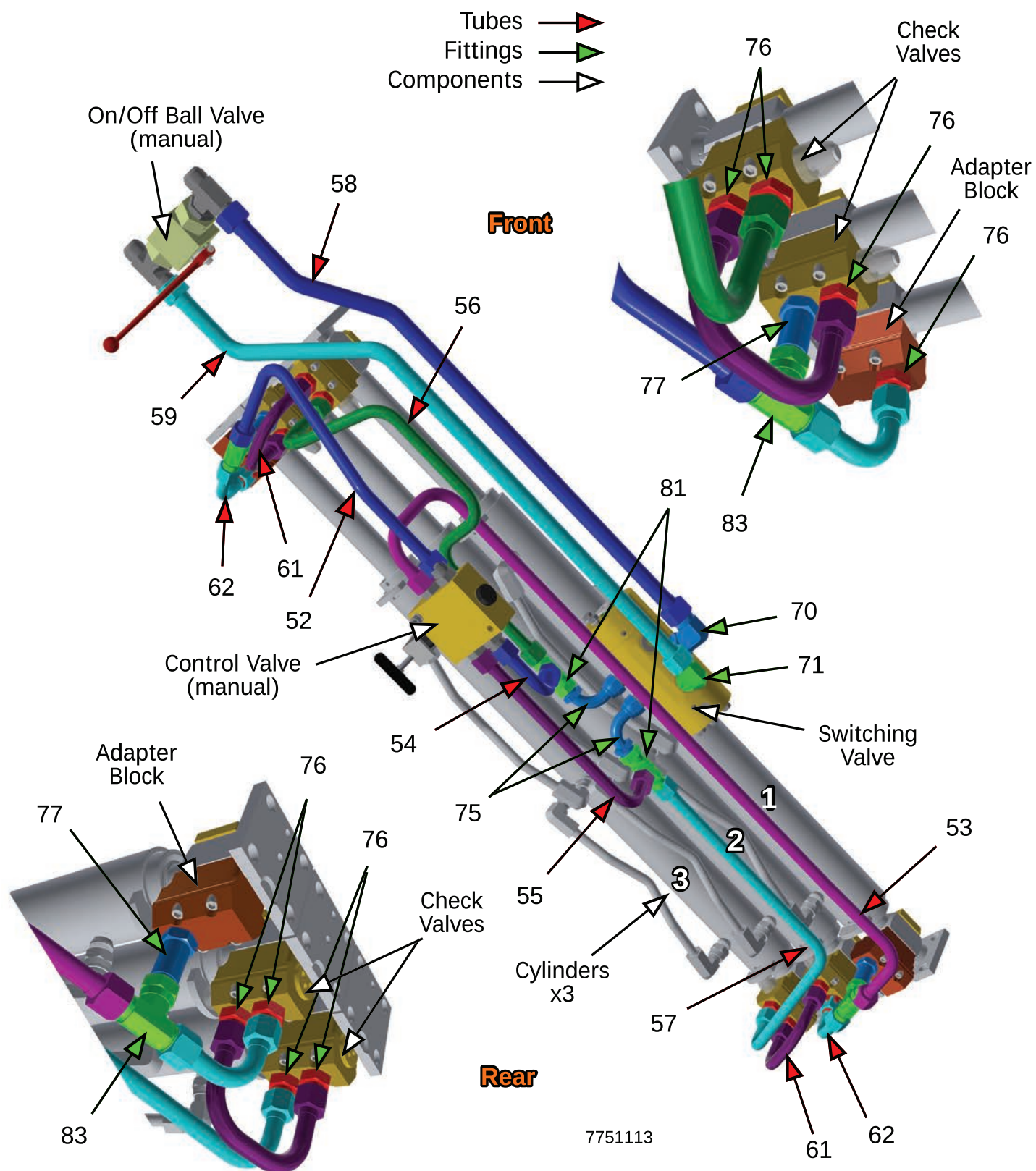


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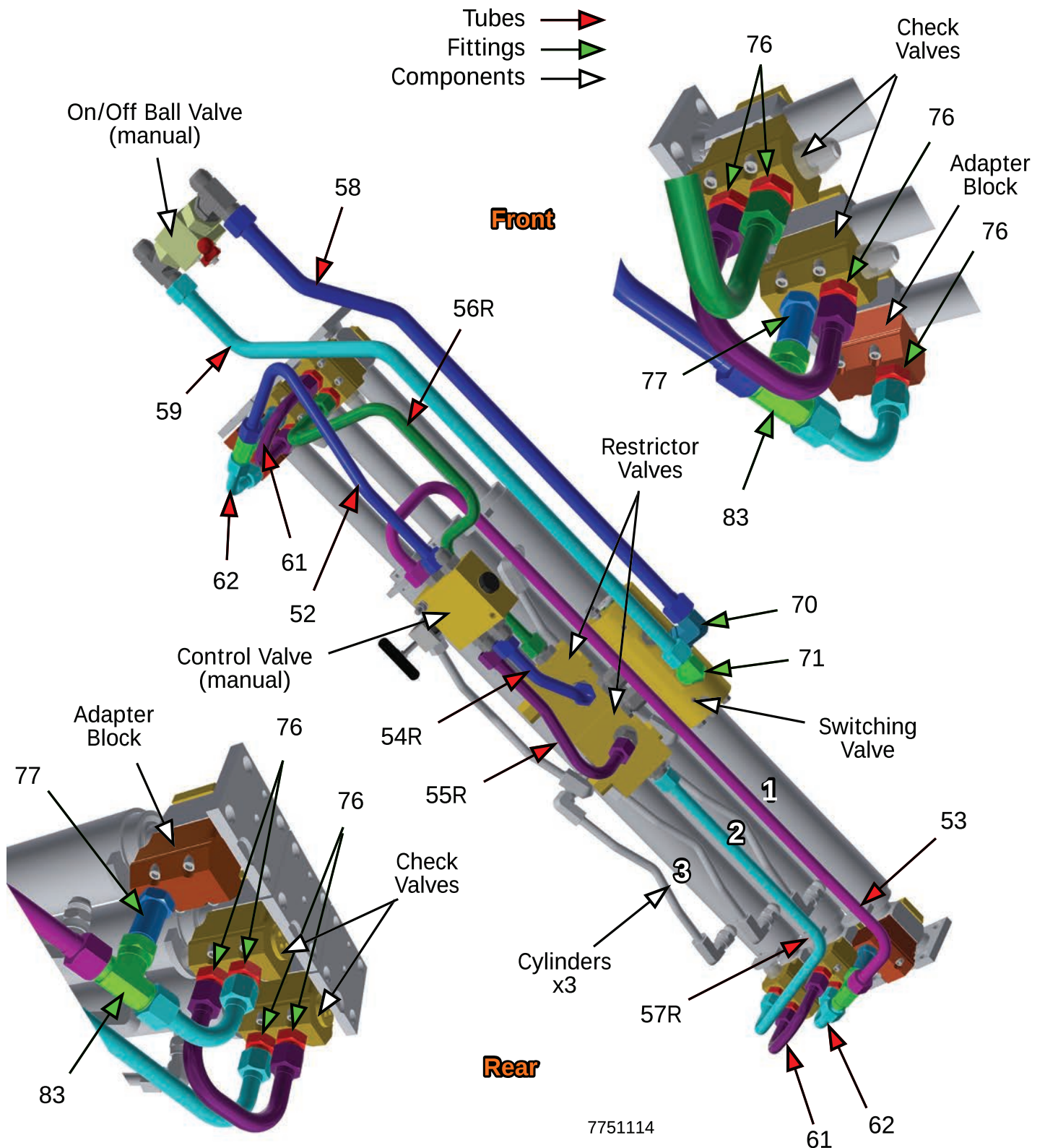
DX Left Side Controls Table

	ID #	Manual CV	Manual CV w/ Restrictors	Electric CV	Electric CV w/ Restrictors	Description
HYDRAULIC TUBES	52	1	1			#52 Tube - Control Valve to Front Check Valve 2
	E52			1	1	#E52 Tube - Control Valve to Front Adapter Block 3
	53	1	1	1	1	#53 Tube - Control Valve to Rear Adapter Block 1
	54	1		1	1	#54 Tube - Control Valve to Switching Valve Front CYL
	54R		1			#54R Tube - Control Valve to Front Restrictor Valve
	55	1		1	1	#55 Tube - Control Valve to Switching Valve Rear CYL
	55R		1			#55R Tube - Control Valve to Rear Restrictor Valve
	56	1				#56 Tube - Front Check Valve 1 to Switching Valve Front CYL
	56R		1			#56R Tube - Front Check Valve 1 to Front Restrictor Valve
	E56			1	1	#E56 Tube - Front Check Valve 1 to Control Valve
	57	1				#57 Tube - Rear Check Valve 3 to Switching Valve Rear CYL
	57R		1			#57R Tube - Rear Check Valve 3 to Rear Restrictor Valve
	E57			1	1	#E57 Tube - Rear Check Valve 3 to Control Valve
	58	1	1	1	1	#58 Tube - Switching Valve PUMP to Ball Valve
	59	1	1	1	1	#59 Tube - Switching Valve RES to Ball Valve
	61	2	2	2		#61 Tube - Check Valve to Check Valve
	61R				2	#61R Tube - Check Valve 2 to Restrictor Valve
	62	2	2	2	2	#62 Tube - Check Valve 2 to Adapter Block
FITTINGS	70	1	1	1	1	Elbow: 16 Male JIC - 16 Male ORB
	71	1	1	1	1	Elbow: 12 Male JIC - 16 Male ORB
	74			3	3	Elbow: 12 Male JIC - 12 Female JIC
	75	2				Sweep Elbow: 12 Male JIC - 12 Female JIC
	76	8	8	8	8	Straight: 12 Male JIC - 12 Male ORB
	77	2	2	1	1	Long Straight: 12 Male JIC - 12 Male ORB
	80			1	1	Run Tee: 12 Male JIC - 12 Male ORB - 12 Male JIC
	81	2				Run Tee: 12 Male JIC - 12 Female JIC- 12 Male JIC
	83	2	2	1	1	Branch Tee: 12 Male JIC - 12 Male JIC- 12 Female JIC

DX Right Side Controls - Manual Control Valve



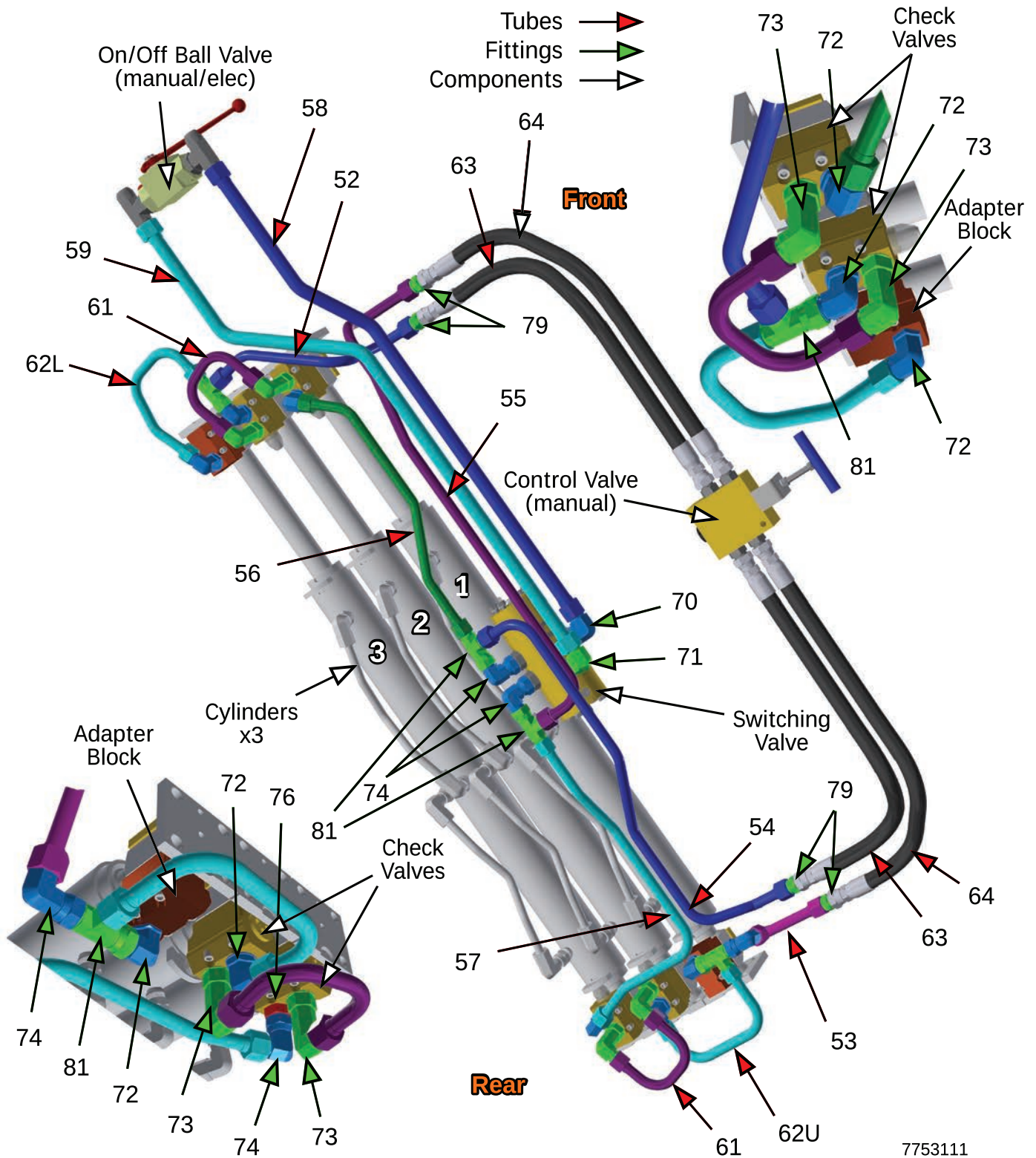
DX Right Side Controls - Manual Control Valve with Restrictor Valves



DX Right Side Controls Table

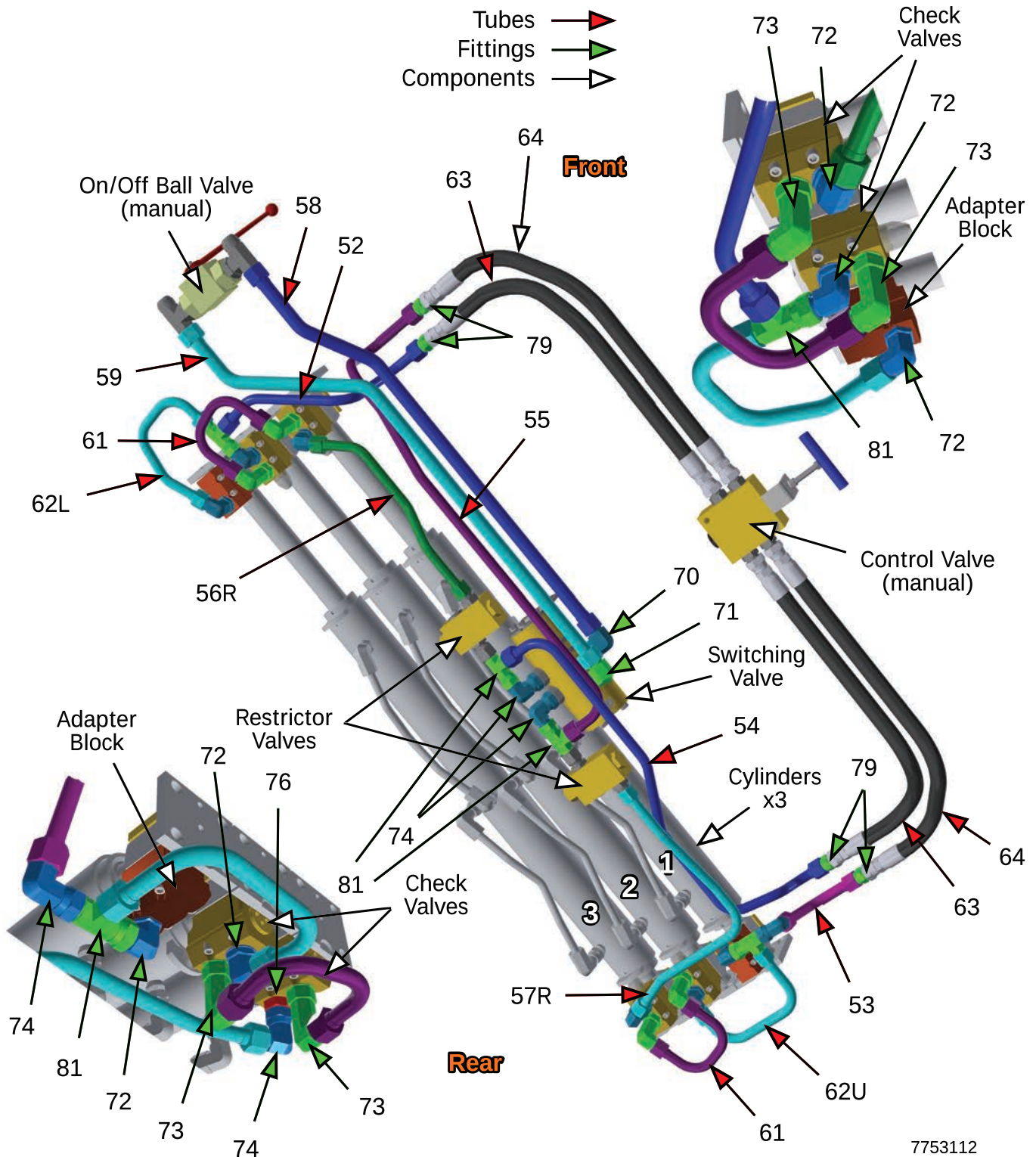
	ID #	Manual CV	Manual CV w/ Restrictors	Description
HYDRAULIC TUBES	52	1	1	#52 Tube - Control Valve to Front Check Valve 2
	53	1	1	#53 Tube - Control Valve to Rear Adapter Block 1
	54	1		#54 Tube - Control Valve to Switching Valve Front CYL
	54R		1	#54R Tube - Control Valve to Front Restrictor Valve
	55	1		#55 Tube - Control Valve to Switching Valve Rear CYL
	55R		1	#55R Tube - Control Valve to Rear Restrictor Valve
	56	1		#56 Tube - Front Check Valve 1 to Switching Valve Front CYL
	56R		1	#56R Tube - Front Check Valve 1 to Front Restrictor Valve
	57	1		#57 Tube - Rear Check Valve 3 to Switching Valve Rear CYL
	57R		1	#57R Tube - Rear Check Valve 3 to Rear Restrictor Valve
	58	1	1	#58 Tube - Switching Valve PUMP to Ball Valve
	59	1	1	#59 Tube - Switching Valve RES to Ball Valve
	61	2	2	#61 Tube - Check Valve to Check Valve
	62	2	2	#62 Tube - Check Valve 2 to Adapter Block
FITTINGS	70	1	1	Elbow: 16 Male JIC - 16 Male ORB
	71	1	1	Elbow: 12 Male JIC - 16 Male ORB
	75	2		Sweep Elbow: 12 Male JIC - 12 Female JIC
	76	8	8	Straight: 12 Male JIC - 12 Male ORB
	77	2	2	Long Straight: 12 Male JIC - 12 Male ORB
	81	2		Run Tee: 12 Male JIC - 12 Female JIC- 12 Male JIC
	83	2	2	Branch Tee: 12 Male JIC - 12 Male JIC- 12 Female JIC

DX Truck Body & Outside Perimeter Frame - Left Side Controls - Manual Control Valve



* The path of some tubes may have been modified to clarify the end connections for the images provided.

DX Truck Body & Outside Perimeter Frame - Left Side Controls - Manual Control Valve with Restrictor Valves



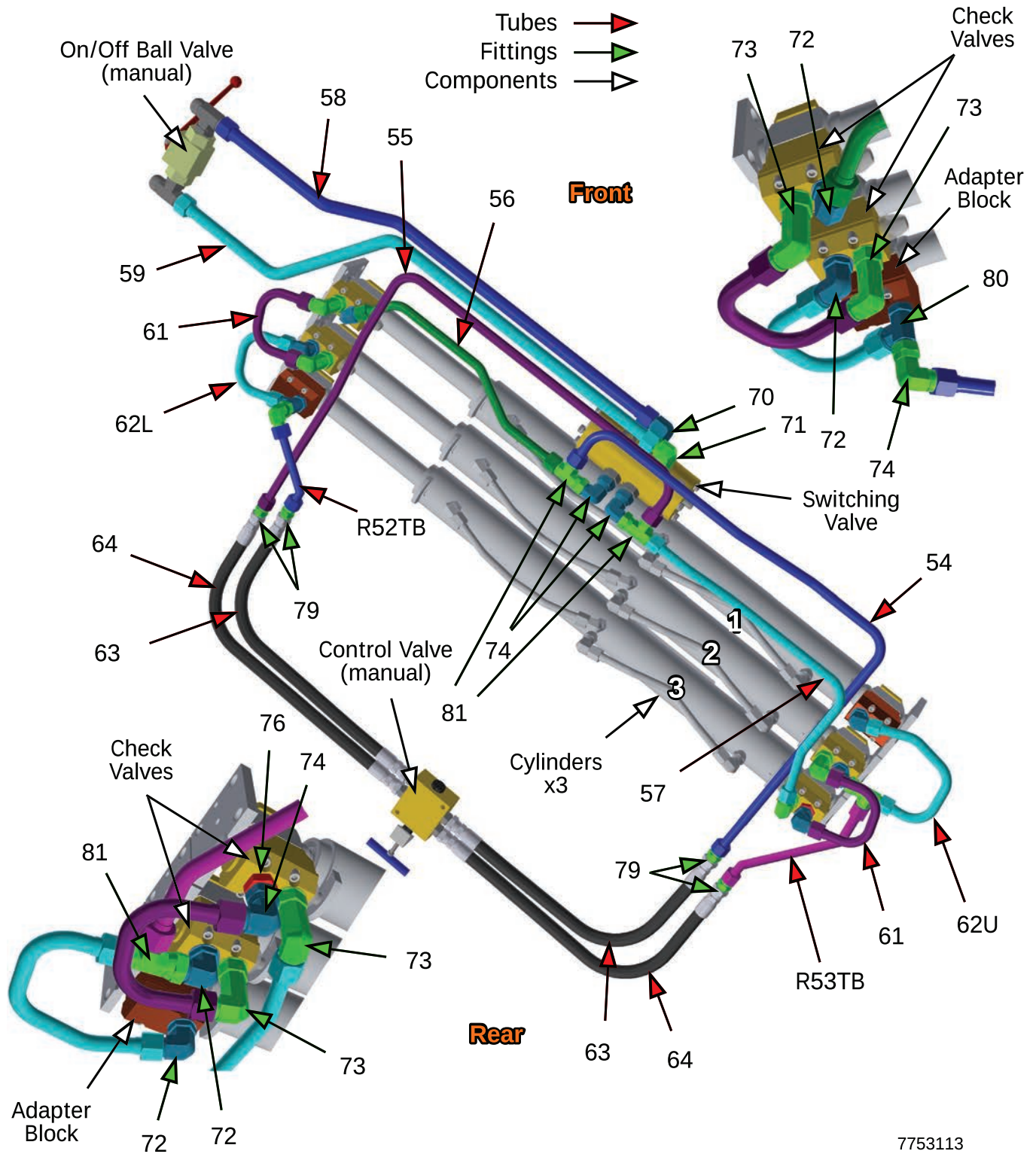
7753112

* The path of some tubes may have been modified to clarify the end connections for the images provided.

DX Truck Body - Left Side Controls Table

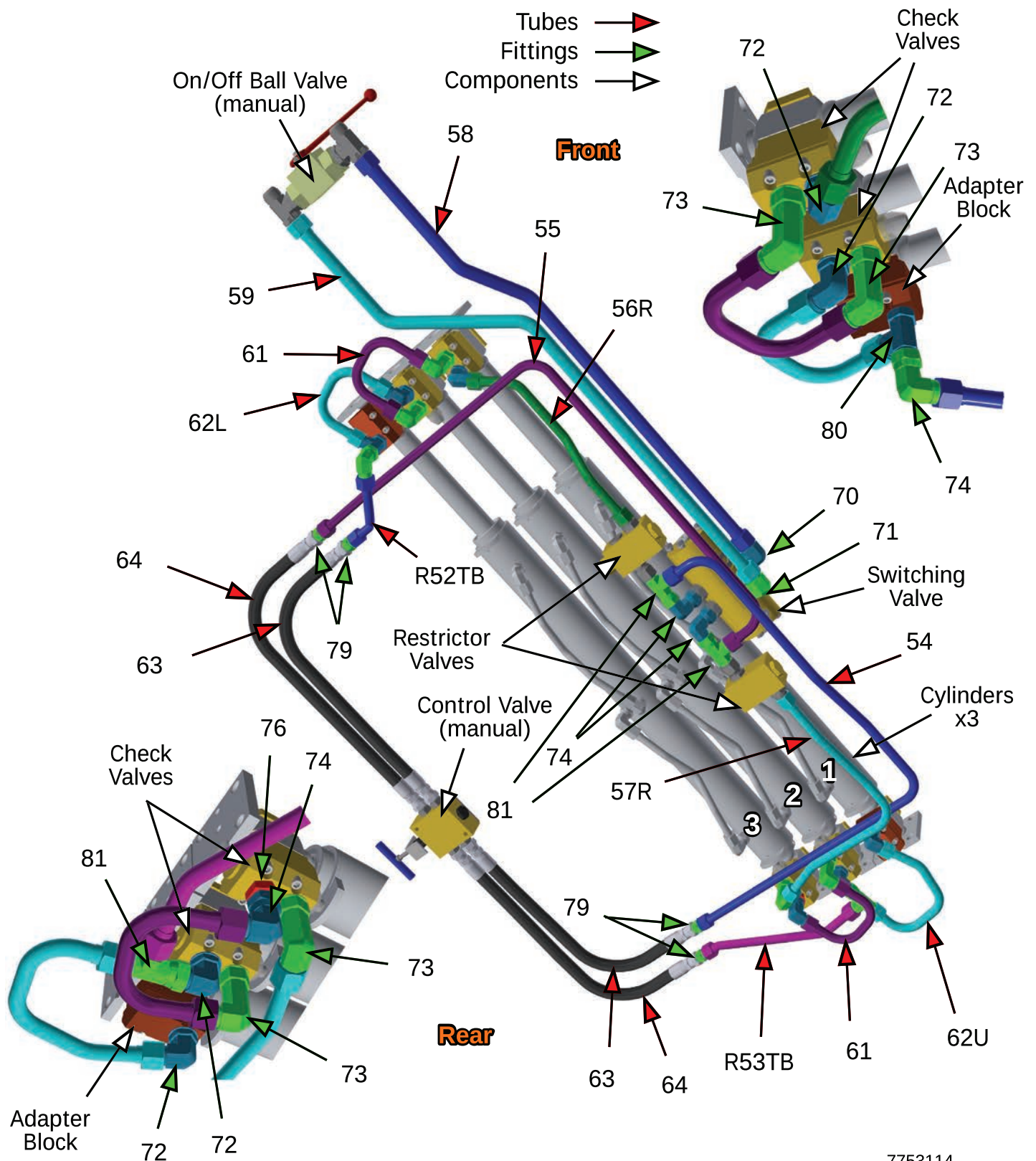
	ID #	Manual CV	Manual CV w/ Restrictors	Description
HYDRAULIC TUBES & HOSES	52	1	1	#52 Tube - Control Valve to Front Check Valve 2
	53	1	1	#53 Tube - Control Valve to Rear Adapter Block 1
	54	1	1	#54 Tube - Control Valve to Switching Valve Front CYL
	55	1	1	#55 Tube - Control Valve to Switching Valve Rear CYL
	56	1		#56 Tube - Front Check Valve 1 to Switching Valve Front CYL
	56R		1	#56R Tube - Front Check Valve 1 to Front Restrictor Valve
	57	1		#57 Tube - Rear Check Valve 3 to Switching Valve Rear CYL
	57R		1	#57R Tube - Rear Check Valve 3 to Rear Restrictor Valve
	58	1	1	#58 Tube - Switching Valve PUMP to Ball Valve
	59	1	1	#59 Tube - Switching Valve RES to Ball Valve
	61	2	2	#61 Tube - Check Valve to Check Valve
	62L	1	1	#62L Tube - Check Valve 2 to Front Adapter Block 3
	62U	1	1	#62U Tube - Check Valve 2 to Rear Adapter Block 1
	63	2	2	#63 Hose - Shorter Inside Hose
	64	2	2	#64 Hose - Longer Outside Hose
FITTINGS	70	1	1	Elbow: 16 Male JIC - 16 Male ORB
	71	1	1	Elbow: 12 Male JIC - 16 Male ORB
	72	5	5	Elbow: 12 Male JIC - 12 Male ORB
	73	4	4	Long Elbow: 12 Male JIC - 12 Male ORB
	74	4	4	Elbow: 12 Male JIC - 12 Female JIC
	76	1	1	Straight: 12 Male JIC - 12 Male ORB
	79	4	4	Straight: 12 Male JIC - 12 Male JIC
	81	4	4	Run Tee: 12 Male JIC - 12 Female JIC- 12 Male JIC

DX Truck Body & Outside Perimeter Frame - Right Side Controls - Manual Control Valve



* The path of some tubes may have been modified to clarify the end connections for the images provided.

DX Truck Body & Outside Perimeter Frame - Right Side Controls - Manual Control Valve with Restrictor Valves



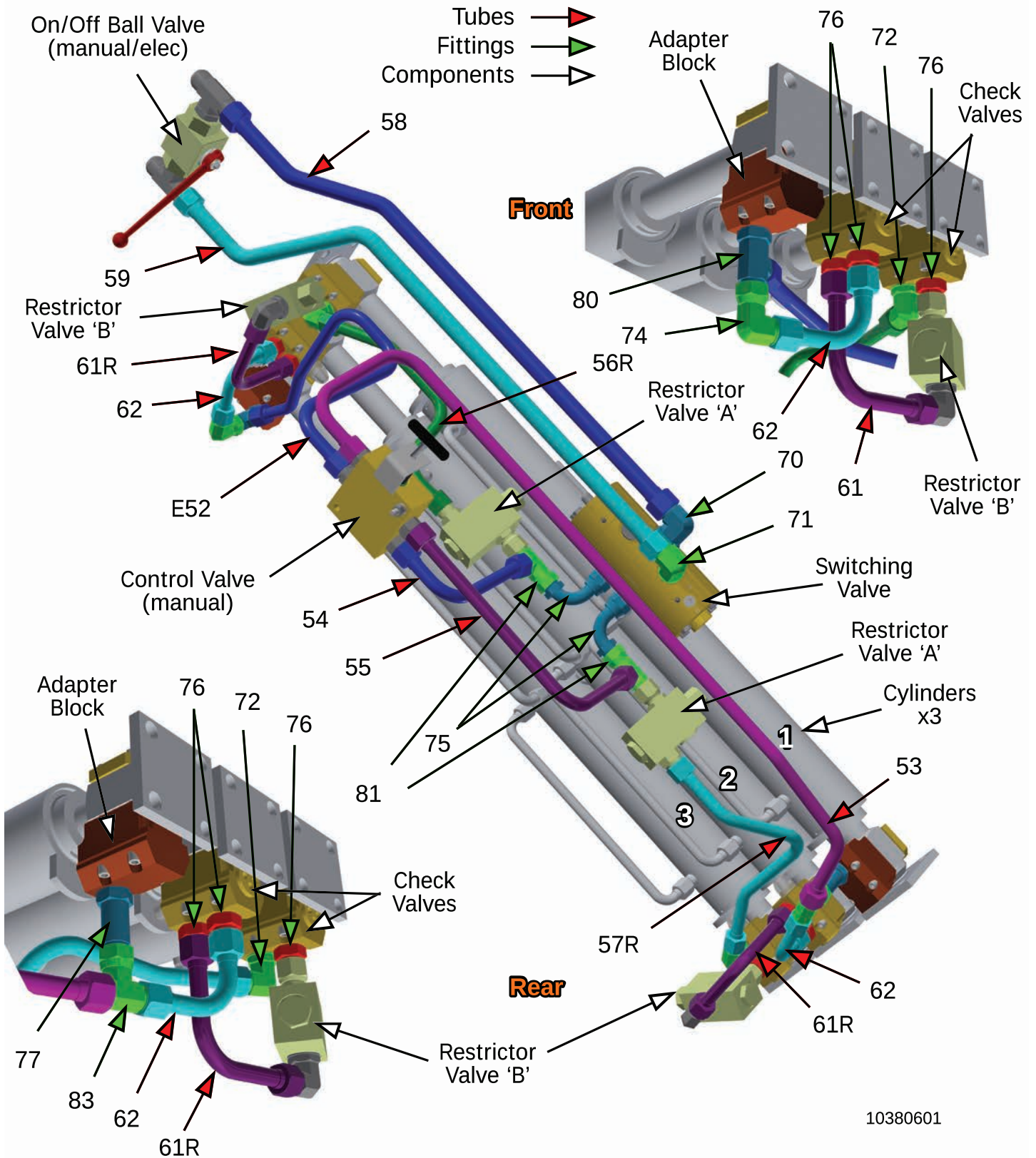
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* The path of some tubes may have been modified to clarify the end connections for the images provided.

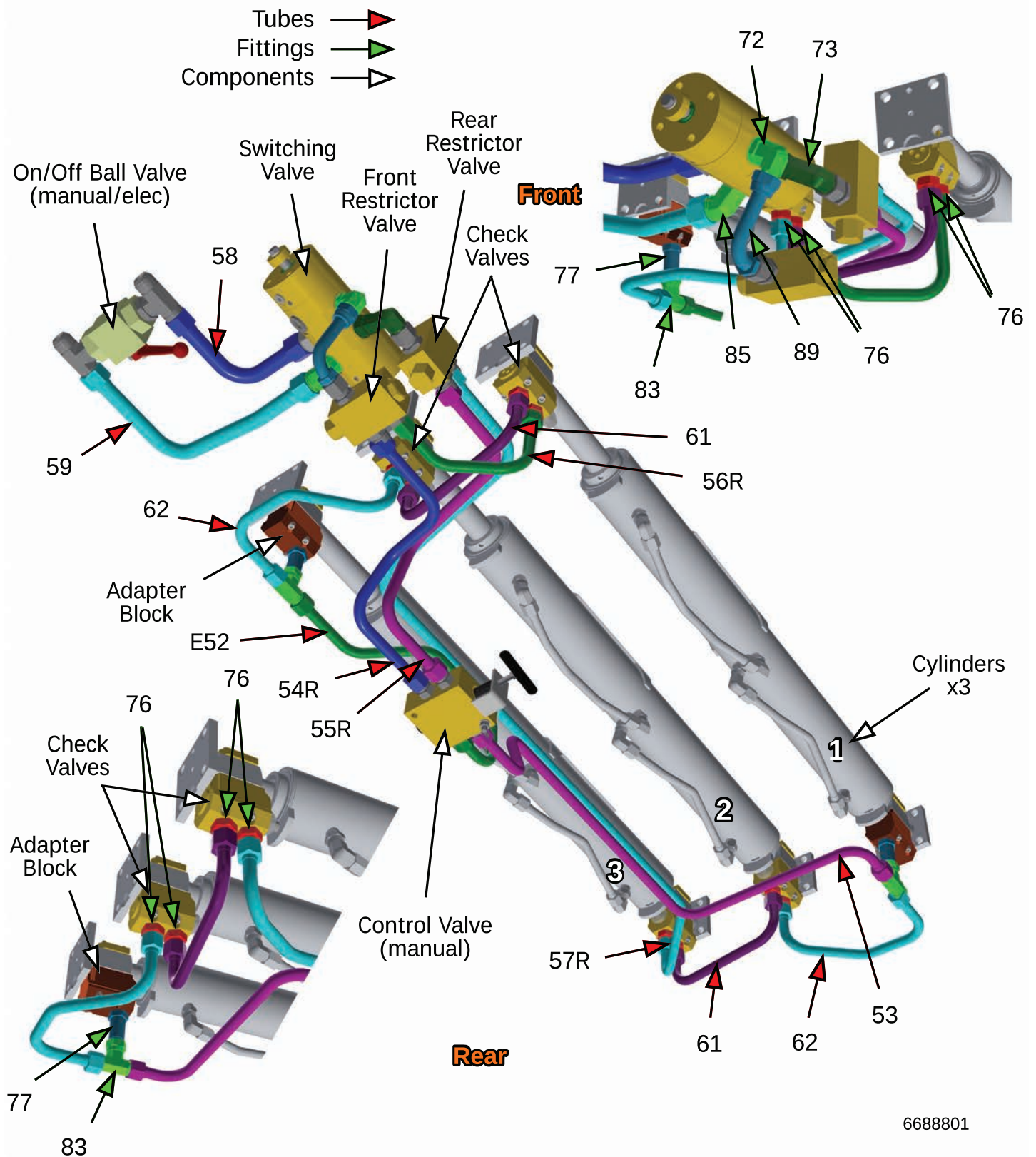
DX Truck Body - Right Side Controls Table

	ID #	Manual CV	Manual CV w/ Restrictors	Description
HYDRAULIC TUBES & HOSES	R52TB	1	1	#R52 Tube - Control Valve to Front Adapter Block 3
	R53TB	1	1	#R53 Tube - Control Valve to Rear Check Valve 2
	54	1	1	#54 Tube - Control Valve to Switching Valve Front CYL
	55	1	1	#55 Tube - Control Valve to Switching Valve Rear CYL
	56	1		#56 Tube - Front Check Valve 1 to Switching Valve Front CYL
	56R		1	#56R Tube - Front Check Valve 1 to Front Restrictor Valve
	57	1		#57 Tube - Rear Check Valve 3 to Switching Valve Rear CYL
	57R		1	#57R Tube - Rear Check Valve 3 to Rear Restrictor Valve
	58	1	1	#58 Tube - Switching Valve PUMP to Ball Valve
	59	1	1	#59 Tube - Switching Valve RES to Ball Valve
	61	2	2	#61 Tube - Check Valve to Check Valve
	62L	1	1	#62L Tube - Check Valve 2 to Front Adapter Block 3
	62U	1	1	#62U Tube - Check Valve 2 to Rear Adapter Block 1
	63	2	2	#63 Hose - Shorter Inside Hose
	64	2	2	#64 Hose - Longer Outside Hose
FITTINGS	70	1	1	Elbow: 16 Male JIC - 16 Male ORB
	71	1	1	Elbow: 12 Male JIC - 16 Male ORB
	72	4	4	Elbow: 12 Male JIC - 12 Male ORB
	73	4	4	Long Elbow: 12 Male JIC - 12 Male ORB
	74	4	4	Elbow: 12 Male JIC - 12 Female JIC
	76	1	1	Straight: 12 Male JIC - 12 Male ORB
	79	4	4	Straight: 12 Male JIC - 12 Male JIC
	80	1	1	Run Tee: 12 Male JIC - 12 Male ORB - 12 Male JIC
	81	3	3	Run Tee: 12 Male JIC - 12 Female JIC- 12 Male JIC

DX V8 Left Side Controls - Manual Control Valve with Restrictor Valves



DX V9 Left Side Controls - Manual Control Valve with Restrictor Valves



6688801

DX V8 & V9 Table

	ID #	Manual CV w/ Restrictors	Manual CV w/ Restrictors	Description
		V8	V9	
HYDRAULIC TUBES	E52	1	1	#E52 Tube - Control Valve to Front Adapter Block 3
	53	1	1	#53 Tube - Control Valve to Rear Adapter Block 1
	54	1		#54 Tube - Control Valve to Switching Valve Front CYL
	54R		1	#54R Tube - Control Valve to Front Restrictor Valve
	55	1		#55 Tube - Control Valve to Switching Valve Rear CYL
	55R		1	#55R Tube - Control Valve to Rear Restrictor Valve
	56R	1	1	#56R Tube - Front Check Valve 1 to Front Restrictor Valve
	57R	1	1	#57R Tube - Rear Check Valve 3 to Rear Restrictor Valve
	58	1	1	#58 Tube - Switching Valve PUMP to Ball Valve
	59	1	1	#59 Tube - Switching Valve RES to Ball Valve
	61		2	#61 Tube - Check Valve to Check Valve
	61R	2		#61R Tube - Check Valve 2 to Restrictor Valve
	62	2	2	#62 Tube - Check Valve 2 to Adapter Block
FITTINGS	70	1		Elbow: 16 Male JIC - 16 Male ORB
	71	1		Elbow: 12 Male JIC - 16 Male ORB
	72	2	1	Elbow: 12 Male JIC - 12 Male ORB
	73		1	Long Elbow: 12 Male JIC - 12 Male ORB
	74	1		Elbow: 12 Male JIC - 12 Female JIC
	75	2		Sweep Elbow: 12 Male JIC - 12 Female JIC
	76	6	8	Straight: 12 Male JIC - 12 Male ORB
	77	1	2	Long Straight: 12 Male JIC - 12 Male ORB
	80	1		Run Tee: 12 Male JIC - 12 Male ORB - 12 Male JIC
	81	2		Run Tee: 12 Male JIC - 12 Female JIC- 12 Male JIC
	82	1		Branch Tee: 12 Male JIC - 12 Male JIC- 12 Male ORB
	83		2	Branch Tee: 12 Male JIC - 12 Male JIC- 12 Female JIC
	85		1	45 Elbow: 12 Male JIC - 16 Male ORB
	89		1	Long Sweep Elbow: 12 Male JIC - 12 Female JIC

Hydraulic Fittings Chart

84691800
84691700
84691500

Elbow

16 Male JIC - 16 Male ORB
 16 Male JIC - 12 Male ORB
 12 Male JIC - 12 Male ORB

Long Elbow
 12 Male JIC - 12 Male ORB



84690950



84688600

Elbow

12 Male JIC - 12 Female JIC

Sweep Elbow
 12 Male JIC - 12 Female JIC
 16 Male JIC - 16 Female JIC



84683100

84683200

Long Straight
 12 Male JIC - 12 Male ORB



84685000

Straight

12 Male JIC - 12 Male ORB



84685010



84686100

Straight

12 Female JIC - 12 Male ORB

Straight
 12 Male JIC - 12 Male JIC



84672700



84692260

Run Tee

12 Male JIC - 12 Male ORB - 12 Male JIC

Run Tee
 12 Male JIC - 12 Female JIC - 12 Male JIC



84690300



84687900

84687700

Plug

16 Male JIC
 12 Male JIC



84692060

Branch Tee

12 Male JIC - 12 Male JIC - 12 Male ORB

Branch Tee
 12 Male JIC - 12 Male JIC - 12 Female JIC



84690800



84672000

84671900

Hollow Hex Plug

16 Male ORB
 12 Male ORB

84691960
84691970
84691950

45° Elbow

16 Male JIC - 16 Male ORB
 16 Male JIC - 12 Male ORB
 12 Male JIC - 12 Male ORB

45° Elbow
 16 Male JIC - 16 Female JIC
 12 Male JIC - 12 Female JIC

84688460

84688450



84683600

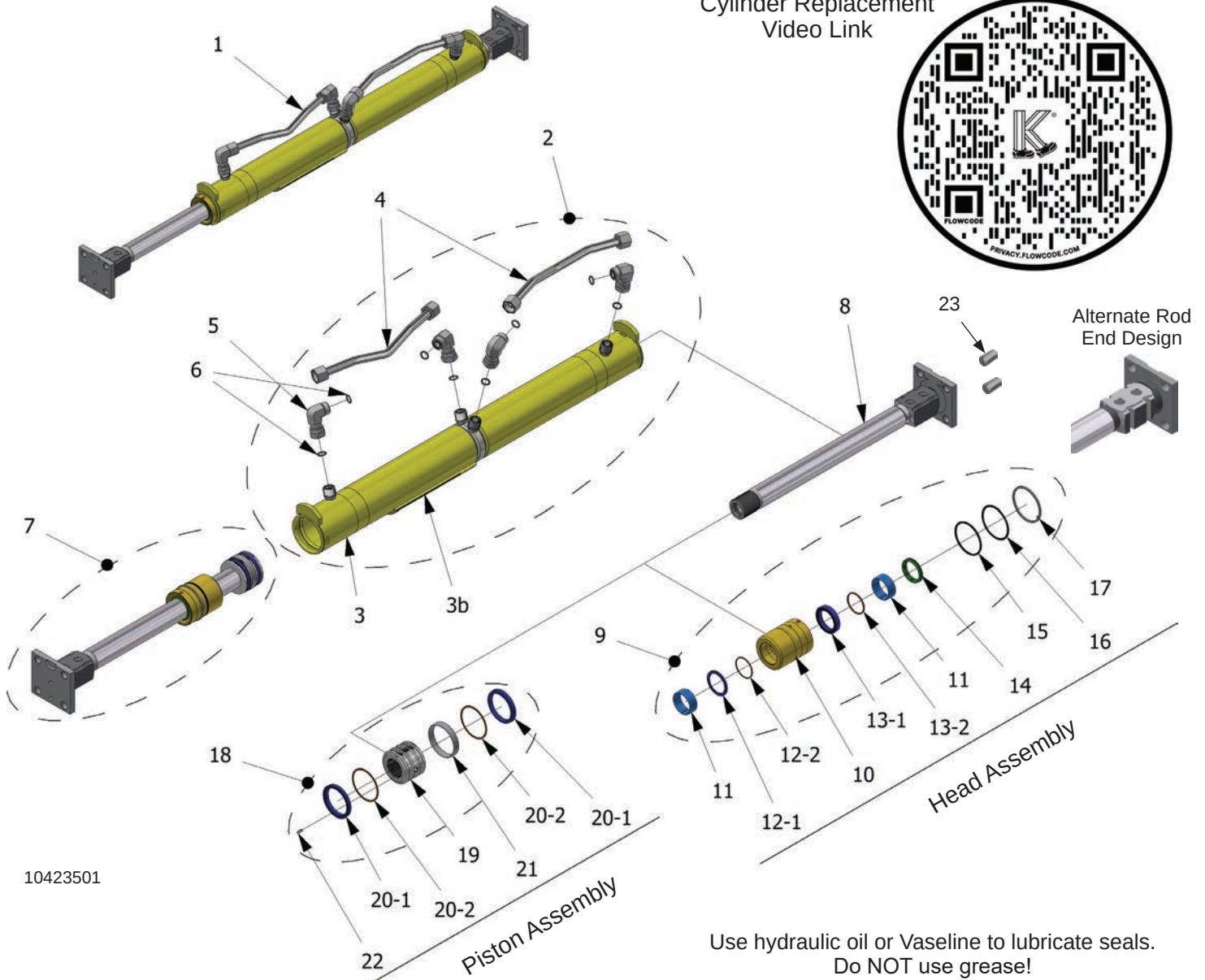
84683700

Long Sweep Elbow
 12 Male JIC - 12 Female JIC
 16 Male JIC - 16 Female JIC

Cylinder Assembly - ORFS (Post Jan. 2020)

Drive serial number must be provided to determine actual part numbers.

Cylinder Replacement
Video Link



10423501

TOOLS



Barrel Pass Ring
for removing piston
from barrel



Piston Wrench



Rod Nose Cone for
head installation



Head Spanner Wrench

Cylinder Assembly - ORFS

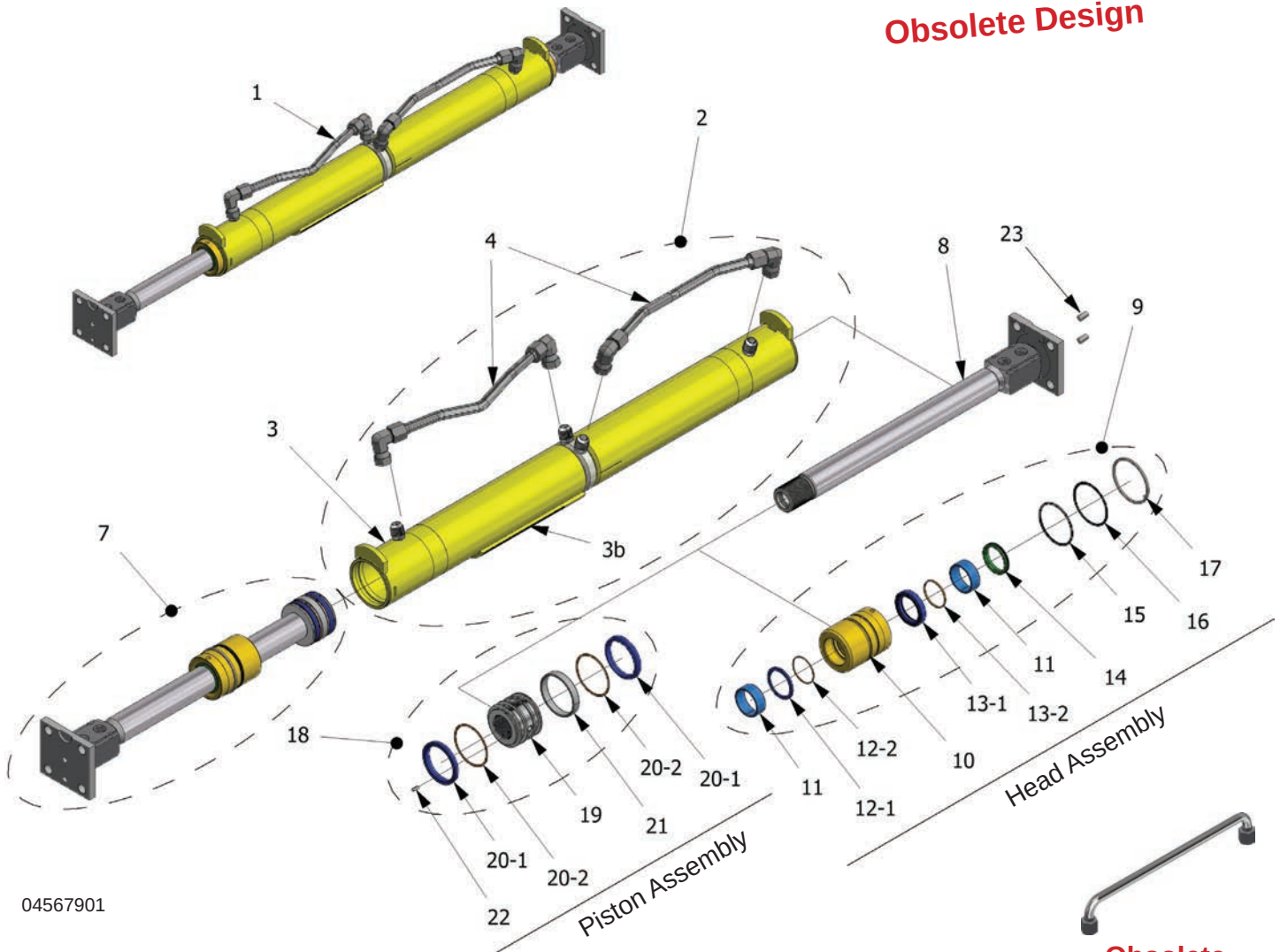
ID#	Qty	3.0" Part #	3.5" Part #	4.0" Part #	DESCRIPTION
1	-	10423501	10423601	10628601	Cylinder Assembly (Includes items 2-23)
2	(1)	10423301	10423401	10628501	Barrel Assembly - ORFS (Includes items 3-6)
3	1	10423101	10423201	10628401	Barrel Weld Assembly Cylinder (Includes item 3b)
3b	1	02552301	03027101	-	Threaded Pad Weld On
4	2	10604901		10634301	Cylinder Cross-Over Tube Assembly - ORFS
5	4	84694048			10 C6LO-S 10-10 MORFS X FORFS Swivel 90 EL - ORFS
6	8	84375272			O-RING 016 N1490-90 #10 Face Seal Nitrile
7	(2)	02553201	02553301	10053201	Rod w/Piston & Head Assemblies (Includes items 8-23)
8	1	01791201		09612001	Rod 45 mm w/Block & Plate
9	(1)	03808501	03811001	06321201	Head Assembly (Includes items 10-17)
10	1	06372501	06375501	06811301	Head Cylinder
11	2	84401205			PTFE Wear Ring Rod Cylinder 45 mm (Blue)
12-1	1	84400201			Buffer Seal Rod Cylinder 45 mm
12-2	1	w/Seal			Buffer Seal Back-up Rod Cylinder 45 mm
13-1	1	84354200			Seal Rod Cylinder 45 mm
13-2	1	w/Seal			Seal Backup Rod Cylinder 45 mm
14	1	84426605			Wiper Rod 45 mm
15	1	84384200	84384600	84385000	O-Ring (232, 236) BUNA 90
16	1	84392400	84392800	84393200	O-Ring Backup (232, 236) BUNA 90
17	1	03812102	03812104	03812106	Lock Wire Square
18	(1)	03808101	03810901	06321101	Piston Assembly (Includes items 19-22)
19	1	02564801	02553601	01334402	Piston Cylinder
20-1	2	84353600	84353800	84352500	Seal Piston Cylinder
20-2	2	w/Seal	w/Seal	w/Seal	Seal Backup Piston Cylinder
21	1	84404600	84404800	84405400	Wear Ring Piston
22	1	86650400			Pin Drive Lock 3/16" x 1/2"
23	2	86654310			Alignment Locating Dowel Pin 10 mm x 20 mm
-(2)	-	06528901	06529001	-	Seal Kit Cylinder Metric * (Includes items 6, 11-17 & 20-22)
TOOLS					
-	-	03572201	03572202	03572203	Barrel Pass Ring
-	-	06504301			Head Spanner Wrench - for Round Hole Style Head
-	-	04190201			Rod Nose Cone (45 mm = 1.772")
-	-	06354201	05808301	-	Piston Wrench

⁽²⁾ Seal kit includes all necessary items required to rebuild the entire cylinder. It does not include items such as the Barrel, Tubes & Fittings, Rod, Head or Piston.

Cylinder Assembly - JIC (Pre Jan. 2020)

Drive serial number must be provided to determine actual part numbers.

Obsolete Design



Use hydraulic oil or Vaseline to lubricate seals. Do NOT use grease!
Do NOT use Teflon tape!

TOOLS



Barrel Pass Ring
for removing piston
from barrel



Piston Wrench



Rod Nose Cone for
head installation



Head Spanner Wrench

Cylinder Assembly - JIC

ID#	Qty	3.0" Part #	3.0" Diesel Part #	3.5" Part #	4.0" Part #	DESCRIPTION
1	-	04567901	04567903	04568001	09611801	Cylinder Assembly (Includes items 2-23)
2	(1)	04560901	04560901	04561001	09612201	Barrel Assembly (Includes items 3-4)
3	1	04560601		04560701	-	Barrel Weld Assembly (Includes item 3b)
3b	1	02552301		03027101	-	Threaded Pad Weld On
4	2	09806201				Cross-Over Tube Assembly - (wave style replace straight)
7	(2)	02553201	02553203	02553301	10053201	Rod W/Piston & Head Assembly (Includes items 8-23)
8	1	01791201			9612001	Rod 45 mm W/Block & Plate
9	(1)	03808501	03808503	03811001	06321201	Head Assembly (Includes items 10-17)
10	1	06372501	06372501	06375501	06811301	Head - Round Hole Style
11 ⁽¹⁾	2	84401205				PTFE Wear Ring Rod Cylinder 45 mm (Blue)
12-1	1	84400201				Buffer Seal Rod Cylinder 45 mm
12-2	1	w/seal				Buffer Seal Back-up Rod Cylinder 45 mm
13-1	1	84354200				Seal Rod Cylinder 45 mm
13-2	1	w/seal				Seal Backup Rod Cylinder 45 mm
14	1	84426605				Wiper Rod 45 mm
15	1	84384200	84384210	84384600	84385000	O-Ring Buna 90 (232, 232 Viton, 236, 240)
16	1	84392400	84392410	84392800	84393200	O-Ring Backup Buna 90 (8-232, 232 Viton, 8-236, 240)
17	1	03812102		03812104	03812106	Lock Wire Square
18	(1)	03808101		03810901	06321101	Piston Assembly (Includes items 19-22)
19	1	02564801		02553601	01334402	Piston
20-1	2	84353600		84353800	84352500	Seal Piston
20-2	2	w/seal		w/seal	w/seal	Seal Backup Piston
21	1	84404600		84404800	84405400	Wear Ring Piston
22	1	86650400				Pin Drive Lock 3/16" x 1/2"
23	2	86654310				Alignment Locating Dowel Pin 10 mm x 20 mm
-	-	-	-	-	-	Cylinder Seal Kits (Include items 11-17 & 20-22)
-(2)	-	-	-	-	10172801	Seal Kit 4.0" Cylinder
-(2)	-	-	-	-	04737101	Seal Kit 4.0" Cylinder 1.772 Rod (Metric) (1993 to Present)
-(2)	-	06528901	-	-	-	Seal Kit 3.0" Cylinder SAE (*Serial #0901023 01/05/2009 - Present)
-(2)	-	-	09294201	-	-	Seal Kit 3.0" Diesel Cylinder 04567903
-(2)	-	-	-	06529001	-	Seal Kit 3.5" Cylinder (*Serial #0901033 01/14/2009 - Present)
TOOLS						
-	-	03572201		03572202	03572203	Barrel Pass Ring
-	-	06504301				Head Spanner Wrench - for Round Hole Style Head (post 2009)
-	-	04190201				Rod Nose Cone (45 mm = 1.772")
-	-	06354201		05808301	-	Piston Wrench

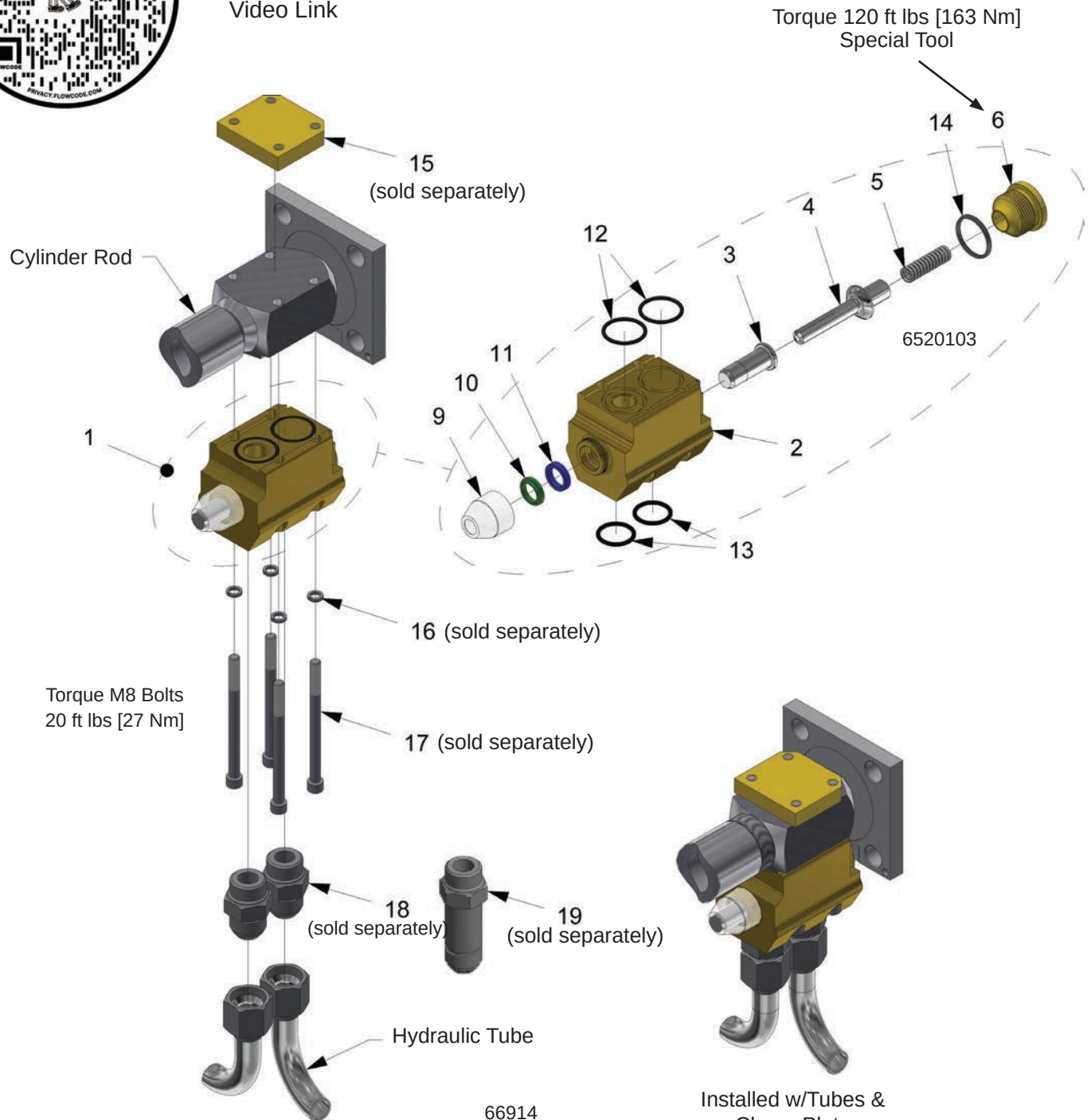
⁽¹⁾ Previous versions of the piston used (1) blue wear ring 84401205 and (1) gray wear ring 84401105 which has now been replaced with a second blue wear ring.

⁽²⁾ Seal kit includes all necessary items required to rebuild the entire cylinder. It does not include items such as the Barrel, Tubes & Fittings, Rod, Head or Piston.

Check Valve Assembly



Check Valve
Replacement
Video Link



Check Valve Assembly

ID#	Qty	Standard Part #	Diesel Part #	DESCRIPTION
1	-	06520103	06520111	External Check Valve Assembly (Includes items 2-6, 9-14)
2	1	06602901		Body Check Valve External
3	1	01771101		Plunger Check Valve External
4	1	01766901		Rod Check Valve External
5	1	84453400		Spring Check Valve External Large #B-18273
6	1	03654501		End Cap Check Valve External Threaded
-	-	03878101	-	External Check Valve Seal Kit (Includes items 9-14)
9	1	06613801		Dust Boot Check Valve External
10	1	84426800		Plunger Wiper Check Valve External
11	1	84352200		Seal Rod 5/8" Check Valve External
12	2	84377800	84377810	122 O-Ring (Buna 90, Viton)
13	2	84387400	84387410	912 O-Ring (Buna 90, Viton)
14	1	84387800	84387810	916 O-Ring (Buna 90, Viton)

Check Valve Related Components

ID#	Qty	SAE Part #	Metric Part #	DESCRIPTION
15	1	02513001	02513002	Top Clamp Check Valve External
16	4	86553001		Washer High Collar Lock 5/16"
17	4	86432511	87007493	Bolt Socket Head (5/16" x 4 1/2", M8 x 110mm)
18	2	84685000		Straight Threaded Connector W/O-Ring 912
19	1	84685010		Long St. Threaded Connector W/O-Ring 912

Tools

ID#	Qty	Part #	DESCRIPTION
-	-	08248301	Check Valve 4 Prong Raised End Cap Tool (Nov '13 - Present)
-	-	08248201	Check Valve 2 Prong Raised End Cap Tool (Jan '98 - Nov '13)

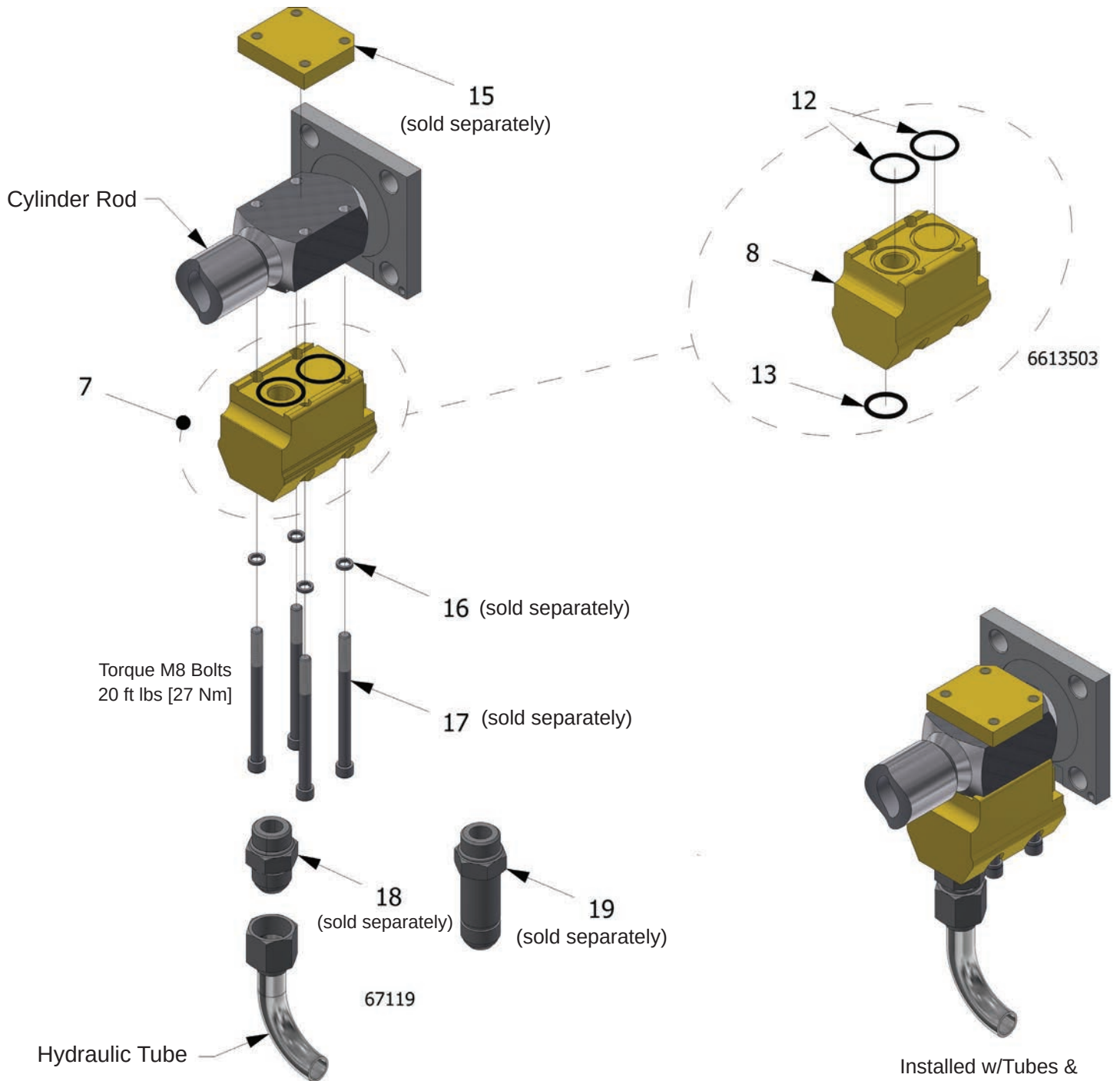
(Feb '09 - Nov '13)

(Nov '13 - Present)

2 Hole
Raised Cap4 Hole
Raised Cap2 Prong
Raised Cap4 Prong
Raised Cap

Adapter Block Assembly

See link for Check Valve
Replacement Video



Use hydraulic oil or Vaseline to lubricate seals.
Do NOT use grease!
Do NOT use Teflon tape!

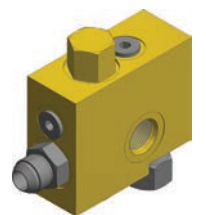
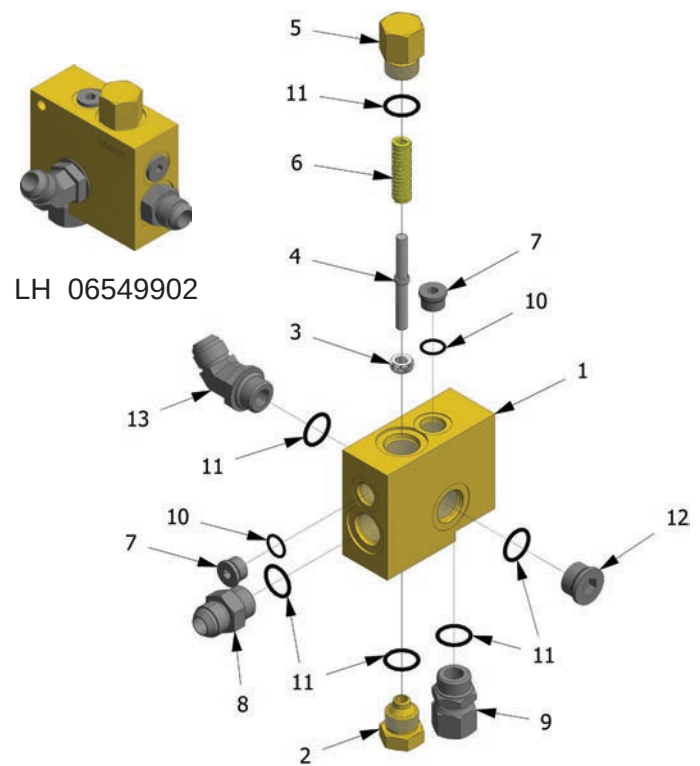
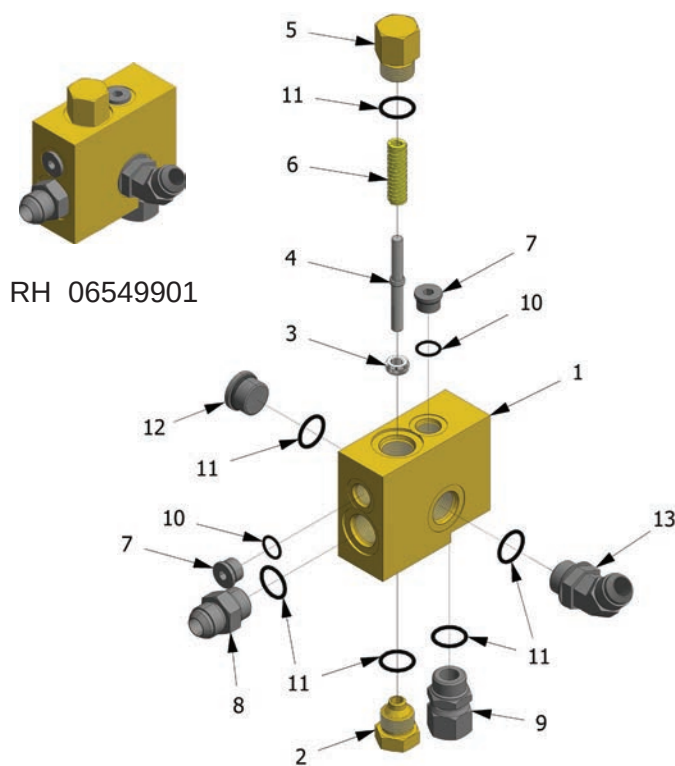
Adapter Block Assembly

ID#	Qty	Part #	DESCRIPTION
7	-	06613503	Adapter Block Assembly (Includes items 8, 12-13)
8	1	06609401	Body Check Valve Adapter Block
-	-	03878102	Adaptor Block Seal Kit (Includes items 12-13)
12	2	84377800	122 O-Ring BUNA 90
13	1	84387400	912 O-Ring BUNA 90

Adapter Block Related Components

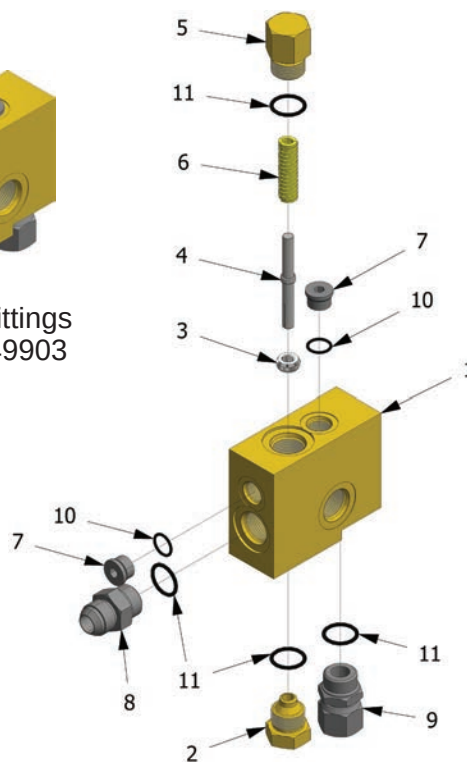
ID#	Qty	SAE Part #	Metric Part #	DESCRIPTION
15	1	02513001	02513002	Top Clamp Check Valve External
16	4	86553001		Washer High Collar Lock 5/16"
17	4	86432511	87007493	Bolt Socket (5/16" x 4 1/2", M8 x 110mm)
18	-	84685000		Straight Threaded Connector W/O-Ring 912
19	-	84685010		Long St. Threaded Connector W/O-Ring 912

Restrictor Valve Assembly



No Fittings
06549903

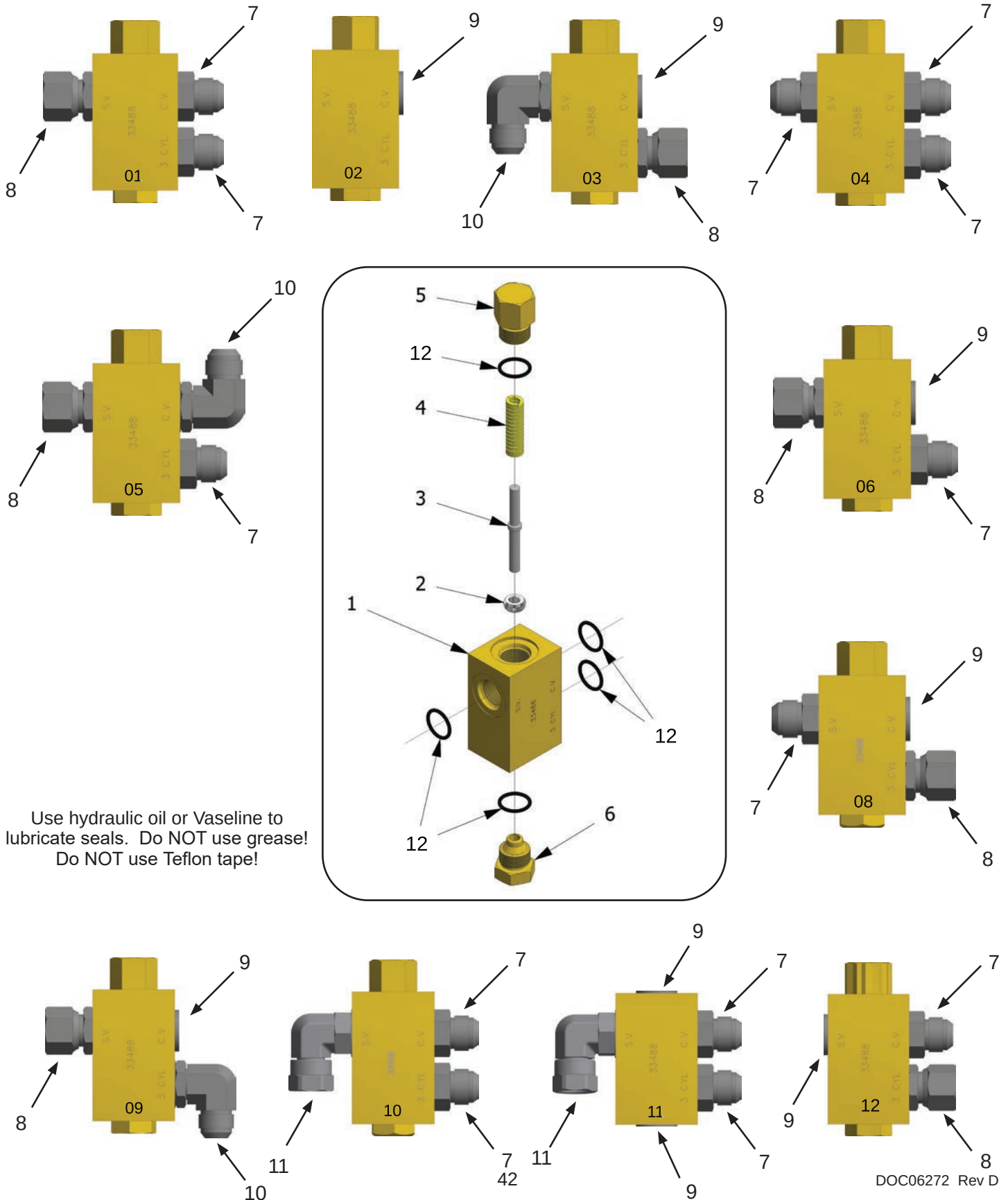
Use hydraulic oil or Vaseline to lubricate seals.
Do NOT use grease!
Do NOT use Teflon tape!



Restrictor Valve Assembly

ID#	Qty	Part #	Part #	DESCRIPTION
-	-	06549901 & 02	06549903	Restrictor Valve Assembly (Includes all items listed below)
1	1	06549601		Restrictor Valve body
2	1	03349101		End Cap, Restrictor Guide Rod
3	1	01951901		Restrictor Spool
4	1	03348901		Restrictor Guide Rod
5	1	03349001		Spring Cap, Hex
6	1	84455400		Spring Die, Rect Wire, Yellow, Danley 9-1010-36
7	2	84687500		08 HP5ON-S Hollow Hex Plug M O-Ring
8	1	84685000		12 F5OX-S Straight Thread Connector MJIC X M O-Ring
9	1	84686100		12 F65OX-S Straight Thread M O-Ring X FJIC
-	-	06832201		Restrictor Valve Seal Kit (Includes items 10-11)
10	2	84387000		908 O-Ring Buna 90
11	6 or 4	84387400		912 O-Ring Buna 90
12	1	84687700	-	12 HP5ON-S Hollow Hex Plug M O-Ring
13	1	84691950	-	12 V5OX-S Straight Thread Elbow MJIC X 45 ADJ O-Ring

One-Way Restrictor Valve Assembly



Restrictor Valve Assembly

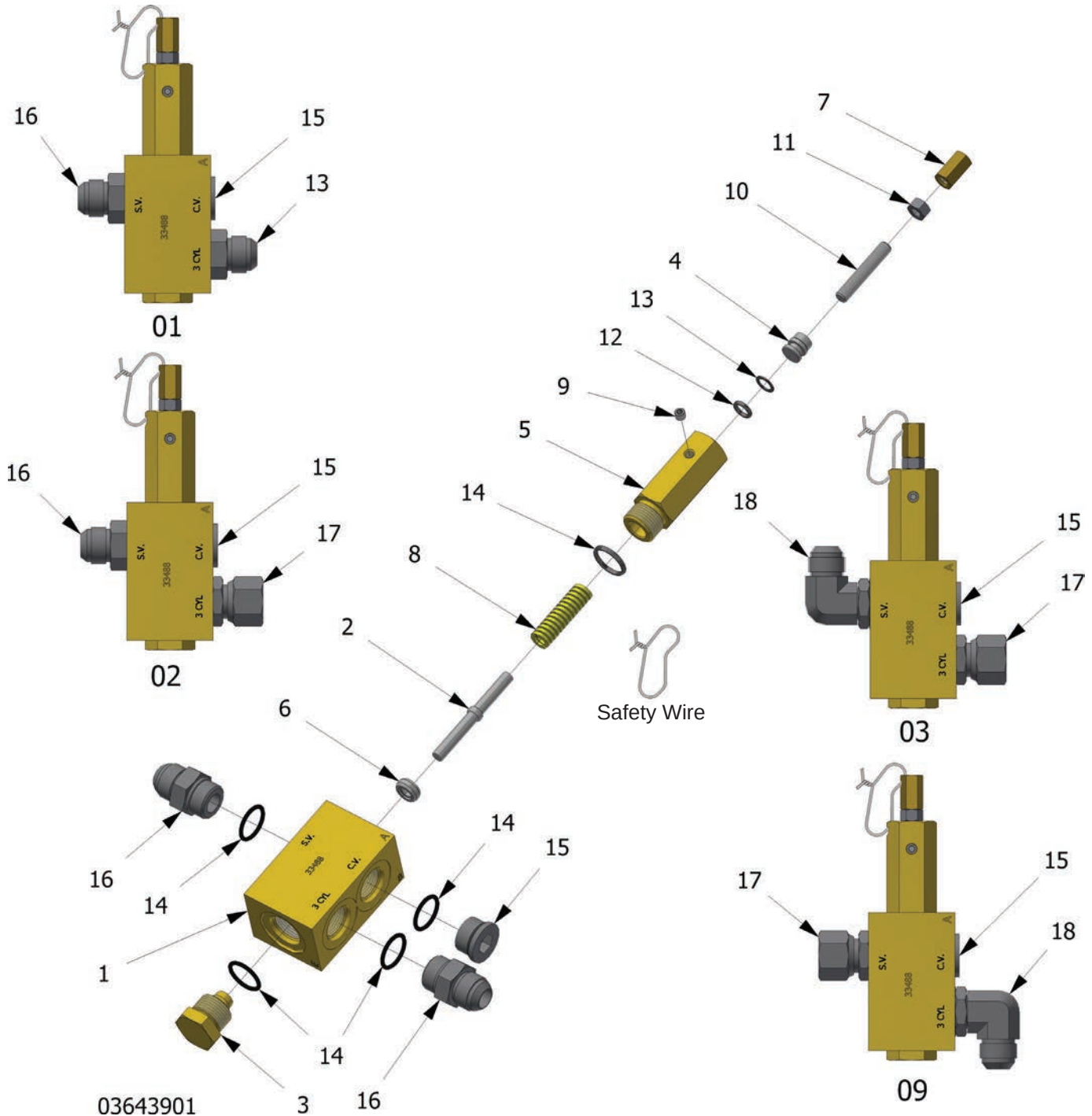
ID#	Quantities										Part #	DESCRIPTION
-	01	02	03	04	05	06	08	09	10	11	12	033487xx One-Way Restrictor Valve Assembly (Includes all items listed below)
1	1	1	1	1	1	1	1	1	1	1	1	03348801 Restrictor Valve Body KRFII
2	1	1	1	1	1	1	1	1	1	-	1	01951901 Collar Restrictor Internal CKV KRFII/WFII 80&90MM Manifold
3	1	1	1	1	1	1	1	1	1	-	1	03348901 Restrictor Rod for One-Way Restrictor KRFII
4	1	1	1	1	1	1	1	1	1	-	1	84455400 Spring 9-1010-36 .625 X 2.5 Yellow Extra Heavy Load
5	1	1	1	1	1	1	1	1	1	-	1	03349001 Spring End Cap LG for One-Way Restrictor Rod KRFII
6	1	1	1	1	1	1	1	1	1	-	1	03349101 End Cap Restrictor Valve KRFII
7	2	-	-	3	1	1	1	-	2	2	1	84685000 12 F5OX-S Straight Thread Connector MJIC X M O-Ring (6400-12-12)
8	1	-	1	-	1	1	1	1	-	-	1	84686100 12 F65OX-S Straight Thread M O-Ring X FJIC (6402-12-12-O)
9	-	1	1	-	-	1	1	1	-	2	1	84687700 12 HP5ON-S Hollow Hex Plug M O-Ring Hex Socket (6408-H12-O)
10	-	-	1	-	1	-	-	1	-	-	-	84691500 12 C5OX-S Straight Thread Elbow MJIC X ADJ O-Ring (6801-12-12)
11	-	-	-	-	-	-	-	-	1	1	-	84692990 12 AOEX6-S Swivel Elbow (6809-12-12-NOW)
-	-	-	-	-	-	-	-	-	-	-	-	06832201 Restrictor Valve Seal Kit (Includes item 12)
12	5	3	5	5	5	5	5	5	5	5	5	84387400 O-Ring 912 Buna 90

Adjustable Restrictor Valve Assembly

Oil flow from port 3 CYL to port C.V. or port S.V. is restricted.

Oil flow from port S.V. to port C.V. or port 3 CYL is free flow.

Oil flow from port C.V. to port S.V. or port 3 CYL is free flow.



Use hydraulic oil or Vaseline to lubricate seals.
Do NOT use grease!
Do NOT use Teflon tape!

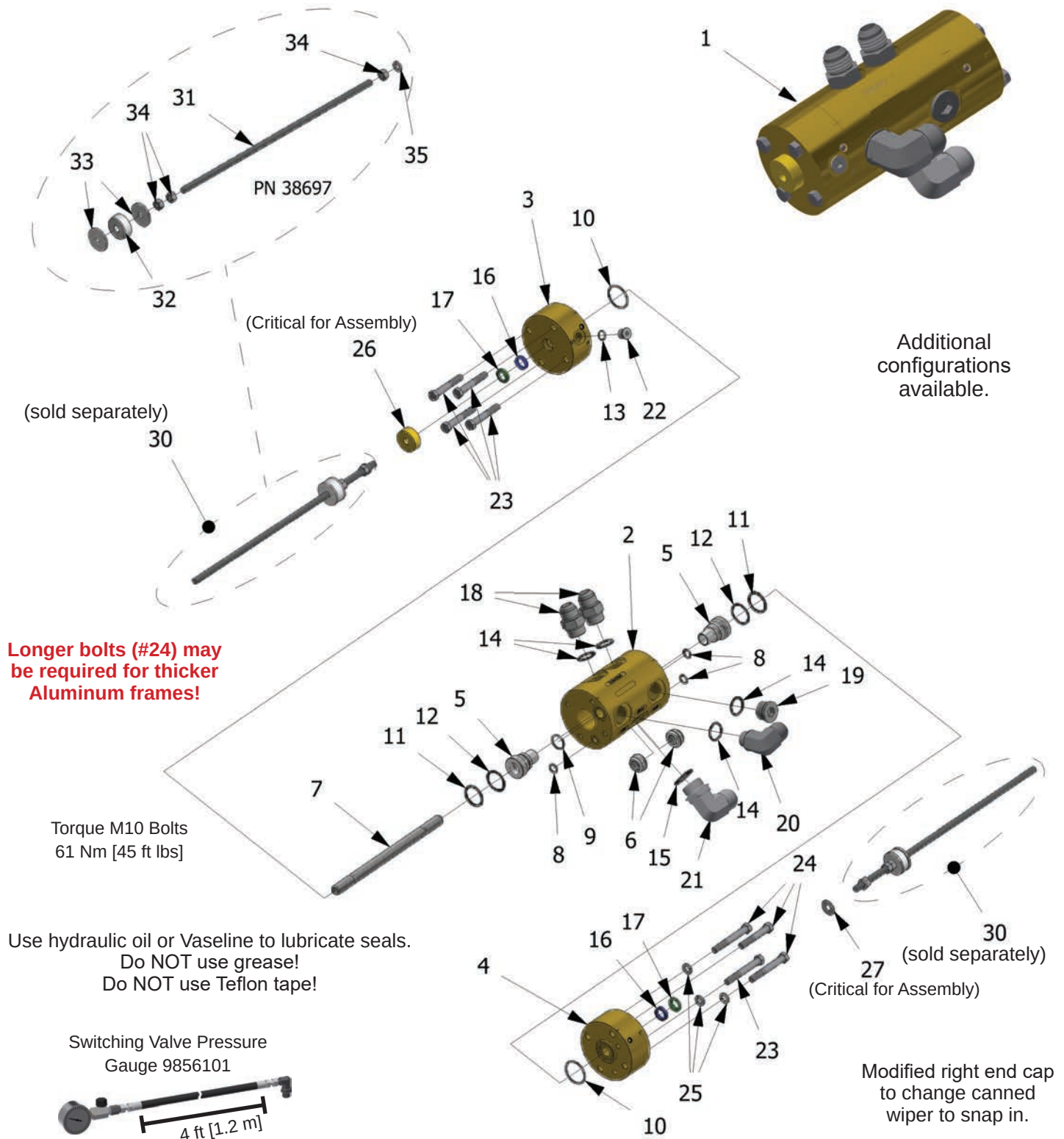
Adjustable Restrictor Valve Assembly

ID#	Qty	Qty	Qty	Qty	Part #	DESCRIPTION
-	01	02	03	09	036439xx	Adjustable Restrictor Valve Assembly (Includes all items listed below)
1	1	1	1	1	03348801	RESTRICTOR VALVE BODY
2	1	1	1	1	03348901	RESTRICTOR GUIDE ROD
3	1	1	1	1	03349101	END CAP, RESTRICTOR ROD GUIDE
4	1	1	1	1	03434701	SPRING PLUNGER
5	1	1	1	1	03434801	SPRING CAP FOR ADJUSTMENT SCREW
6	1	1	1	1	03436901	RESTRICTOR SPOOL
7	1	1	1	1	03437601	NUT COVER BK KRFII FOR RESTRICTOR VALVE
8	1	1	1	1	84455400	DIE SPRING, RECT WIRE, YELLOW, DANLEY 9-1010-36
9	1	1	1	1	84680770	1/16 HHP-S PIPE PLUG SOCKET 1/16", 7/8" TAPER
10	1	1	1	1	86440500	HEX SOCKET SET SCREW, 3/8-16 X 2 1/4
11	1	1	1	1	86628100	JAM NUT HEX GR8 ZN 3/8-16
12	1	1	1	1	84376200	111 O-RING BUNA 90
13	1	1	1	1	84389000	111 BACK-UP RING BUNA
14	5	5	5	5	84387400	912 O-RING BUNA 90
15	1	1	1	1	84687700	12 HP5ON-S HOLLOW HEX PLUG M O-RING
16	2	1	-	-	84685000	12 F5OX-S STRAIGHT THREAD CONNECTOR MJIC X M O-Ring
17	-	1	1	1	84686100	12 F65OX-S STRAIGHT THREAD M O-RING X FJIC
18	-	-	1	1	84691500	12 C5OX-S STRAIGHT THREAD ELBOW MJIC X ADJ

Restrictor Adjustment Instructions

1. Remove the safety wire that is through the holes in the #5 spring cap and the #7 cover nut.
2. Remove the #7 cover nut.
3. Loosen the #11 jam nut.
4. Remove the #9 pipe plug.
5. Install pressure gauges at inlet port 3 CYL and outlet port S.V or port C.V.
6. Adjust the pressure drop when oil is flowing from port 3 CYL to port S.V.
7. Turn the set screw clockwise to increase the pressure drop, turn the set screw counterclockwise to decrease the pressure drop.
8. Lock the #11 jam nut after adjusting and re-install the #9 pipe plug.
9. Re-install the #7 cover nut.
10. Replace the safety wire.

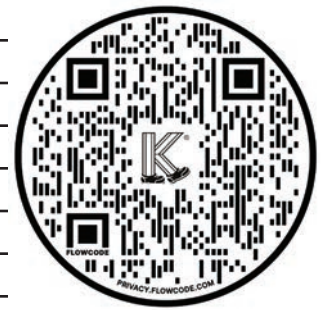
Switching Valve Assembly & Threaded Rod Assembly (Nov 2014 - Present)



⁽¹⁾ The Switching Valve Seal Kit contains all necessary components to rebuild all Switching Valve models.

Switching Valve Assembly (Nov 2014 - Present)

ID#	Qty	Metric Part #	SAE Part #	Diesel SAE Part #	DESCRIPTION
1	-	03888909	03888908	03888911	Switching Valve Assembly (Includes Items 2-27)
2	1	04504602	04504601		Body Switching Valve (not sold separately)
3	1		04504701		End Cap Right Switching Valve (not sold separately)
4	1		04504801		End Cap Left Switching Valve (not sold separately)
5	2		03718901		Poppet Switching Valve
6	2		03718801		Ring Poppet Switching Valve
7	1	01335502	01335501		Control Rod Switching Valve
-(1)	-	03878001	-		Seal Kit Switching Valve (Includes items 8-17)
8	3	84376200	84376201		O-Ring 111 (Buna 90, Viton)
9	1	84377000	84377201		O-Ring 117 (Buna 90, Viton)
10	2	84378200	84378210		O-Ring 126 (Buna 90, Viton)
11	2	84382200	84382210		O-Ring 216 (Buna 90, Viton)
12	2	84391600	84391610		O-Ring Backup 216 (Buna 90, Viton)
13	1	84386800	84386801		O-Ring 906 (Buna 90, Viton)
14	4	84387400	84387410		O-Ring 912 (Buna 90, Viton)
15	1	84387800	84387810		O-Ring 916 (Buna 90, Viton)
16	2	84352200			Seal Rod 5/8"
17	2	84426800			Wiper Snap In 5/8" Rod
18	2	84685000			6400-12-12 Straight
19	1	84687700			6408-12 M O-Ring Socket Plug
20	1	84691700	-		6801-16-12 Straight Threaded Elbow
		-	84685300		6400-16-12 Straight Threaded
21	1	84691800	-		6801-16-16 Straight Threaded Elbow
		-	84685400		6400-16-16 Straight Threaded
22	1	84687400			6408-6 M O-Ring Socket Plug
23	5	87009000	86441000		Bolt Hex M10 x 65mm [GR5 3/8"x2 1/2"]
24	3	87009511	86442000		Bolt Hex M10 x 75mm [GR5 3/8"x3"]
25	3	87076500	86555000		Washer Lock M10 [3/8"]
26	1	02552101			Cap Limit Switching Valve (Critical for Assembly)
27	1	86553500			Washer Large OD 3/8" (Critical for Assembly)



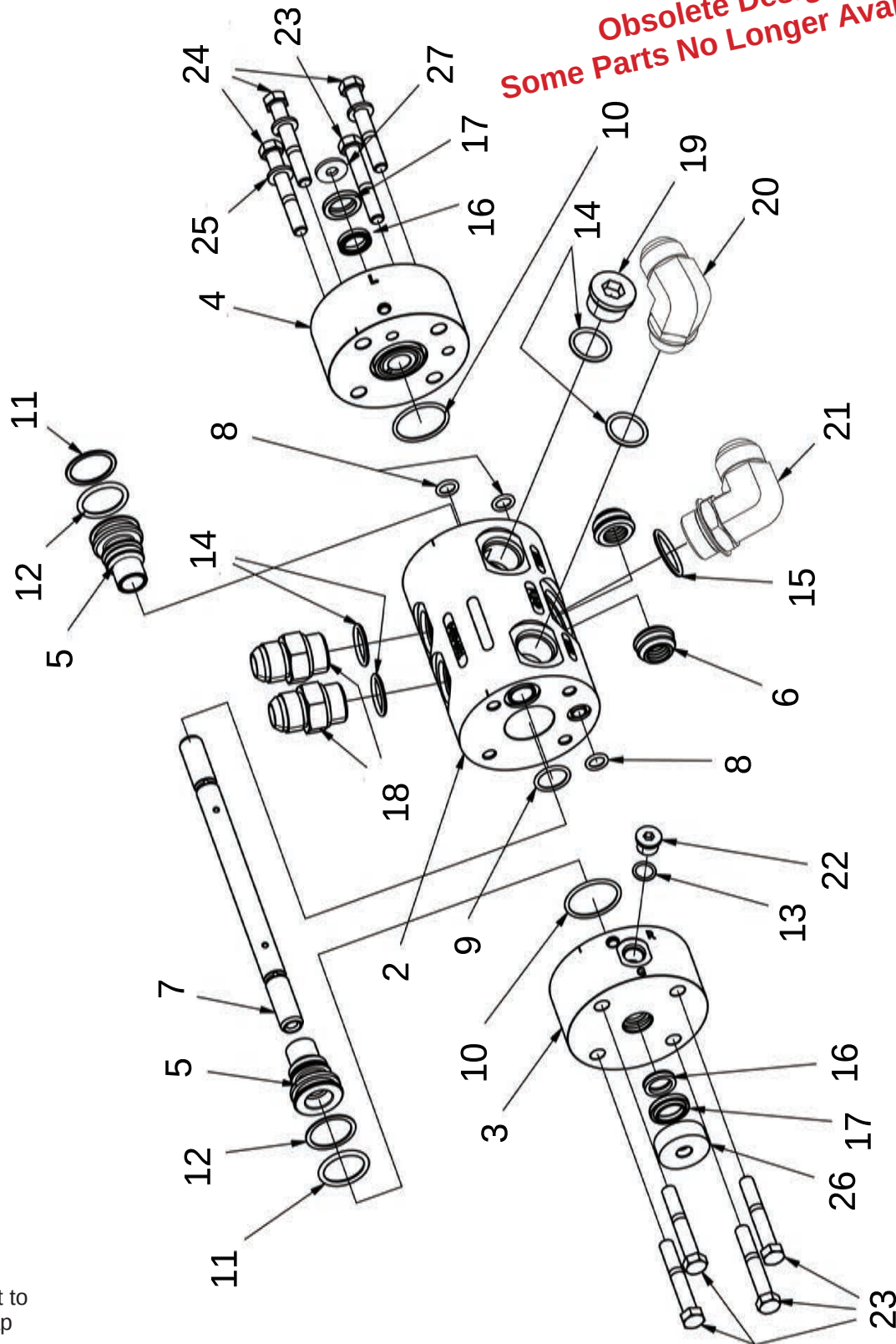
Switching Valve
Replacement &
Adjustment Video Link

Threaded Rod Assembly

ID#	Qty	Metric	SAE	DESCRIPTION
30	-	03869702	03869701	Rod Threaded Assembly (Includes Items 27, 31-35)
31	1	10488401	10488301	Actuator Rod Threaded (M10-1.5 x 406mm , 3/8"-16x16")
32	1	83217500		Switching Valve Grommet
33	2	86553500		Washer Large OD 3/8"
34	3	87101500	86628500	Nut Hex (M10 x 1.5, 3/8")
35	1	87076500	86555000	Washer Lock (M10, 3/8")

Switching Valve Assembly (Apr 2013 - Nov 2014)

**Obsolete Design -
Some Parts No Longer Available**



Added -6 port to
right end cap

Switching Valve Assembly (Apr 2013 - Nov 2014)

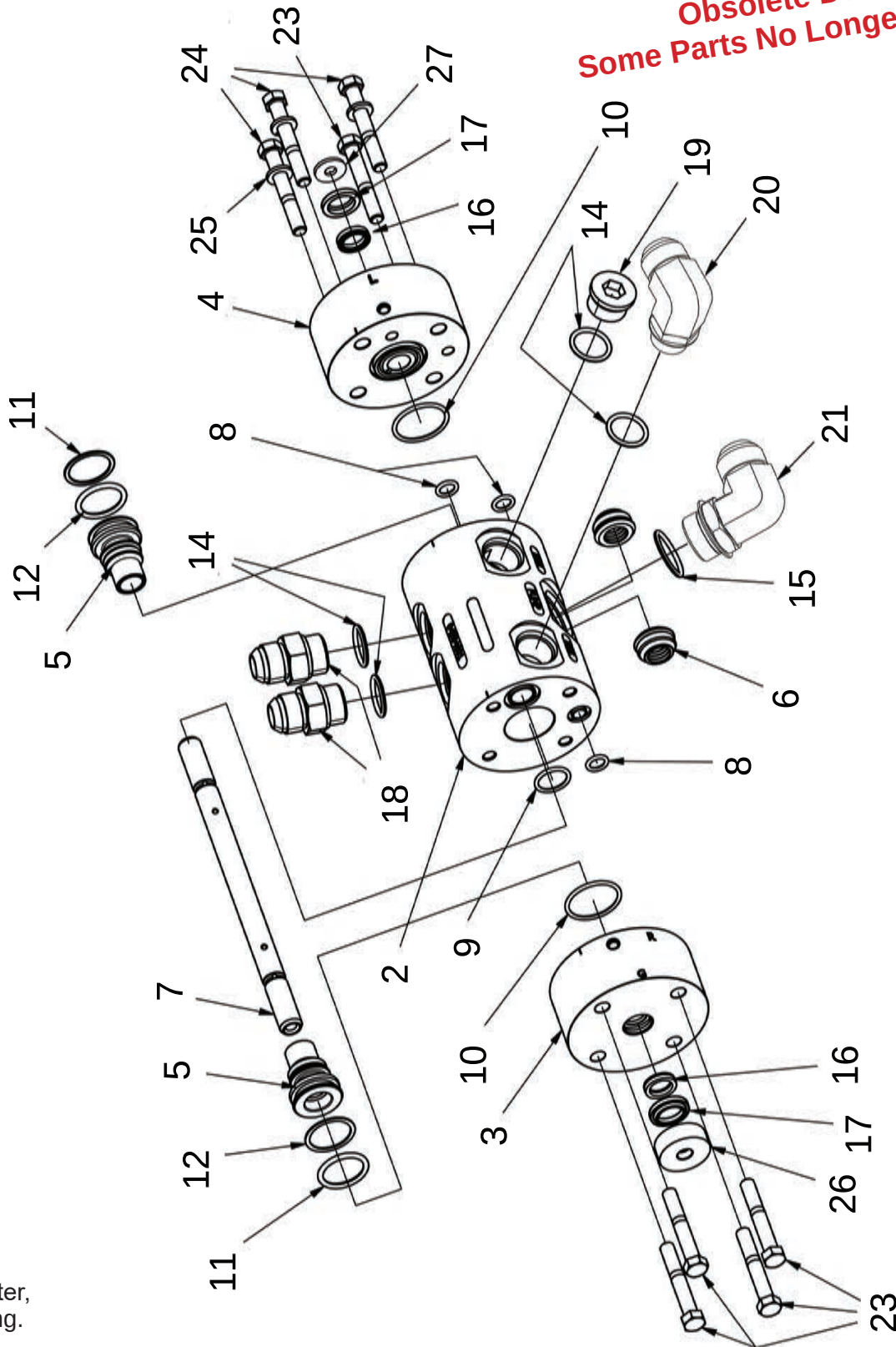
ID#	Qty	Metric Part #	SAE Part #	Diesel SAE Part #	DESCRIPTION
-	-	03888909	03888908	03888911	Switching Valve Assembly (Includes Items 2-27)
2	1	04504702	04504601		Body Switching Valve (not sold separately)
3	1		04504701		End Cap Right Switching Valve (not sold separately)
4	1		04504801		End Cap Left Switching Valve (not sold separately)
5	2		03718901		Poppet Switching Valve
6	2		03718801		Ring Poppet Switching Valve
7	1	01335502	01335501		Control Rod Switching Valve
-(1)	1	03878001		-	Seal Kit Switching Valve (Includes items 8-17)
8	3	84376200		84376201	O-Ring 111 (Buna 90, Viton)
9	1	84377000		84377201	O-Ring 117 (Buna 90, Viton)
10	2	84378200		84378210	O-Ring 126 (Buna 90, Viton)
11	2	84382200		84382210	O-Ring 216 (Buna 90, Viton)
12	2	84391600		84391610	O-Ring Backup 216 (Buna 90, Viton)
13	1	84386800		84386801	O-Ring 906 (Buna 90, Viton)
14	4	84387400		84387410	O-Ring 912 (Buna 90, Viton)
15	1	84387800		84387810	O-Ring 916 (Buna 90, Viton)
16	2	84352200			Seal Rod 5/8"
17	2	84427200			Wiper Canned 5/8" Rod
18	2	84685000			6400-12-12 Straight
19	1	84687700			6408-12 M O-Ring Socket Plug
20	1	84691700		-	6801-16-12 Straight Threaded Elbow
		-		84685300	6400-16-12 Straight Threaded
21	1	84691800		-	6801-16-16 Straight Threaded Elbow
		-		84685400	6400-16-16 Straight Threaded
22	1	84687400			6408-6 M O-Ring Socket Plug
23	5	87009000	86441000		Bolt Hex M10 x 65mm [GR5 3/8"x2 1/2"]
24	3	87009511	86442000		Bolt Hex M10 x 75mm [GR5 3/8"x3"]
25	3	87076500	86555000		Washer Lock M10 [3/8"]
26	1	02552101			Cap Limit Switching Valve (Critical for Assembly)
27	1	86553500			Washer Large OD 3/8" (Critical for Assembly)

(1) The Switching Valve Seal Kit contains all necessary components to rebuild all Switching Valve models.

Note: All new switching valve assemblies are interchangeable with past assemblies. Internal parts are not necessarily interchangeable.

Switching Valve Assembly (Aug 2008 - Apr 2013)

**Obsolete Design -
Some Parts No Longer Available**



Removed filter,
seat & spring.

Switching Valve Assembly (Aug 2008 - Apr 2013)

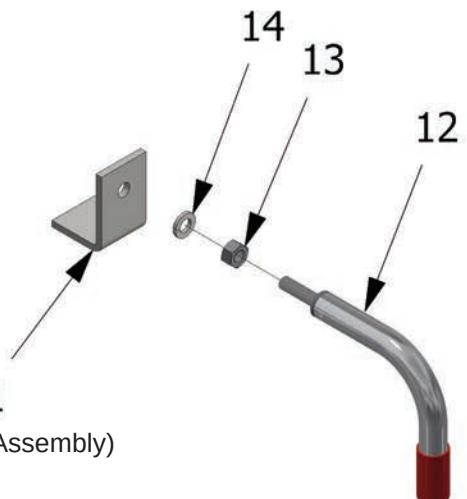
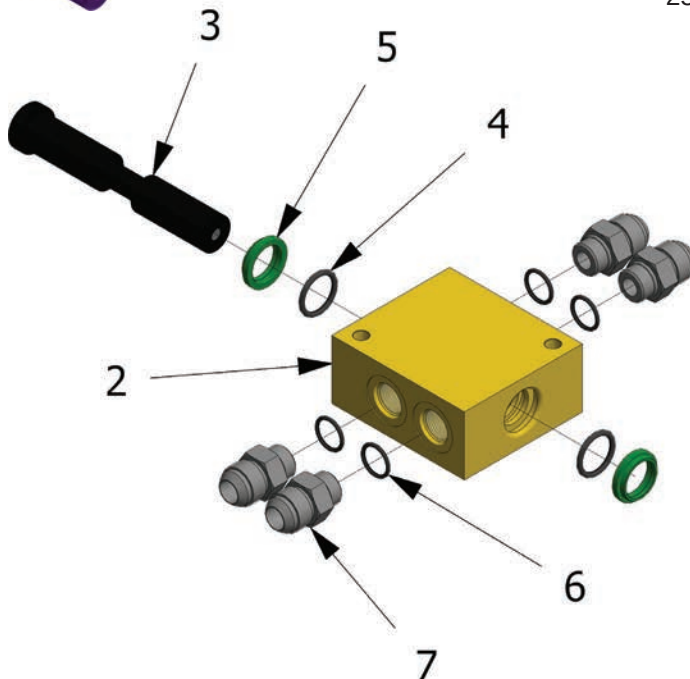
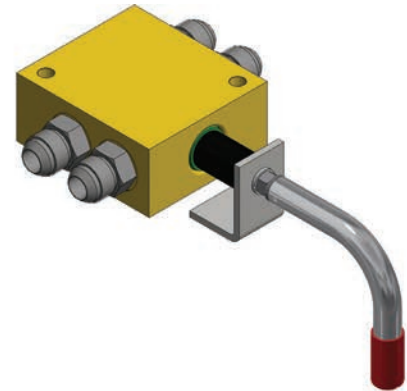
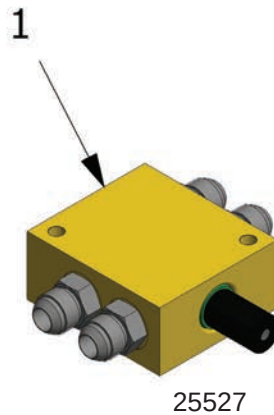
ID#	Qty	Metric Part #	SAE Part #	Diesel SAE Part #	DESCRIPTION
-	-	03888909	03888908	03888911	Switching Valve Assembly (Includes Items 2-27)
2	1	04504702	04504601		Body Switching Valve (not sold separately)
3	1		04504701		End Cap Right Switching Valve (not sold separately)
4	1		04504801		End Cap Left Switching Valve (not sold separately)
5	2		03718901		Poppet Switching Valve
6	2		03718801		Ring Poppet Switching Valve
7	1	01335502	01335501		Control Rod Switching Valve
-(1)	1	03878001		-	Seal Kit Switching Valve (Includes items 8-17)
8	3	84376200	84376201		O-Ring 111 (Buna 90, Viton)
9	1	84377000	84377201		O-Ring 117 (Buna 90, Viton)
10	2	84378200	84378210		O-Ring 126 (Buna 90, Viton)
11	2	84382200	84382210		O-Ring 216 (Buna 90, Viton)
12	2	84391600	84391610		O-Ring Backup 216 (Buna 90, Viton)
14	4	84387400	84387410		O-Ring 912 (Buna 90, Viton)
15	1	84387800	84387810		O-Ring 916 (Buna 90, Viton)
16	2	84352200			Seal Rod 5/8"
17	2	84427200			Wiper Canned 5/8" Rod
18	2	84685000			6400-12-12 Straight
19	1	84687700			6408-12 M O-Ring Socket Plug
20	1	84691700	-		6801-16-12 Straight Threaded Elbow
		-	84685300		6400-16-12 Straight Threaded
21	1	84691800	-		6801-16-16 Straight Threaded Elbow
		-	84685400		6400-16-16 Straight Threaded
23	5	87009000	86441000		Bolt Hex M10 x 65mm [GR5 3/8"x2 1/2"]
24	3	87009750	86442000		Bolt Hex M10 x 75mm [GR5 3/8"x3"]
25	3	87076500	86555000		Washer Lock M10 [3/8"]
26	1		02552101		Cap Limit Switching Valve (Critical for Assembly)
27	1		86553500		Washer Large OD 3/8" (Critical for Assembly)

(1) The Switching Valve Seal Kit contains all necessary components to rebuild all Switching Valve models.

Note: All new switching valve assemblies are interchangeable with past assemblies. Internal parts are not necessarily interchangeable.

Control Valve (Load/Unload) Assembly & Handle Assembly - Manual (Sold Separately)

Control Valve
Replacement
Video Link



Use hydraulic oil or Vaseline to lubricate seals.
Do NOT use grease!
Do NOT use Teflon tape!

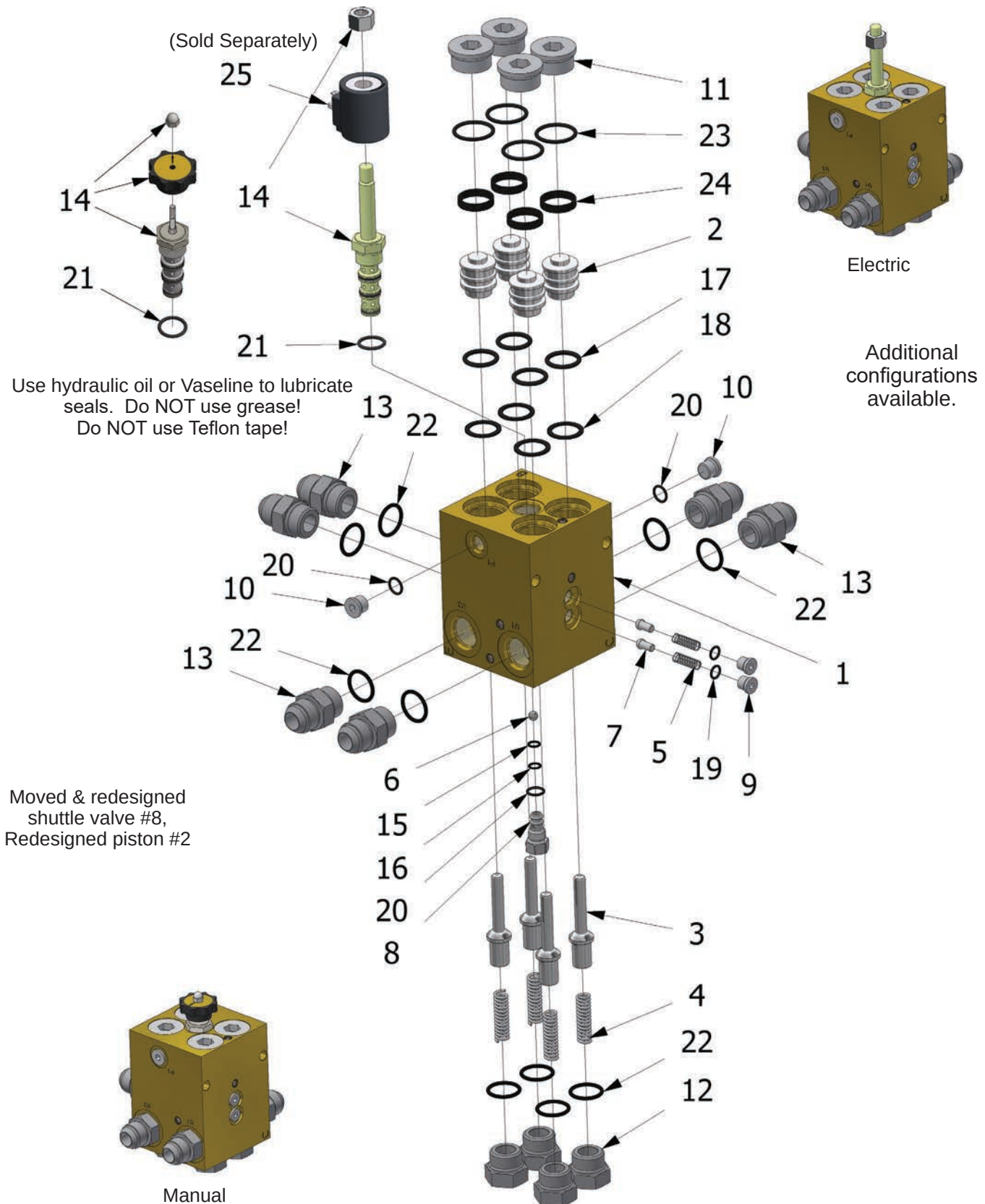
Control Valve Assembly

ID#	Qty	Metric Part #	SAE Part #	Diesel SAE Part #	DESCRIPTION
1	-	02552702	02552701	02552711	Control Valve Load/Unload Assembly (Includes items 2-8)
2	1	01049501			Body Control Valve (not sold separately)
3	1	03423202 (red)	03423201 (black)		Spool Control Valve (Metric, SAE) (not sold separately)
-	-	03877901		-	Seal Kit Control Valve Load/Unload (Includes items 4-6)
4	2	84381800		84381700	O-Ring 214 (Buna 70, Viton)
5	2	84427000		84427000	Wiper 1" Rod
6	4	84387200		84387300	O-Ring 910 (Buna 90, Viton)
7	4	84684900			6400-12-10 Straight
8	1	84801000			Snap Ring (2 Pcs) OBSOLETE

Handle Assembly

ID#	Qty	Metric Part #	SAE Part #	DESCRIPTION
10	-	11310302	11310301	Handle Assembly Control Valve Load/Unload (Includes Items 11-14)
11	1	06998701		Spool End Stop (Critical for Assembly)
12	1	11229430	11229429	Control Valve Handle Assembly (See Handle Section for options)
13	1	87101500	86628500	Nut Hex 10mm [GR8 ZN 3/8-16]
14	1	87076500	86555000	Washer Lock 10mm [3/8"]

Control Valve (Load/Unload) Assembly - Electric/Manual (Jan 2022 - Present)

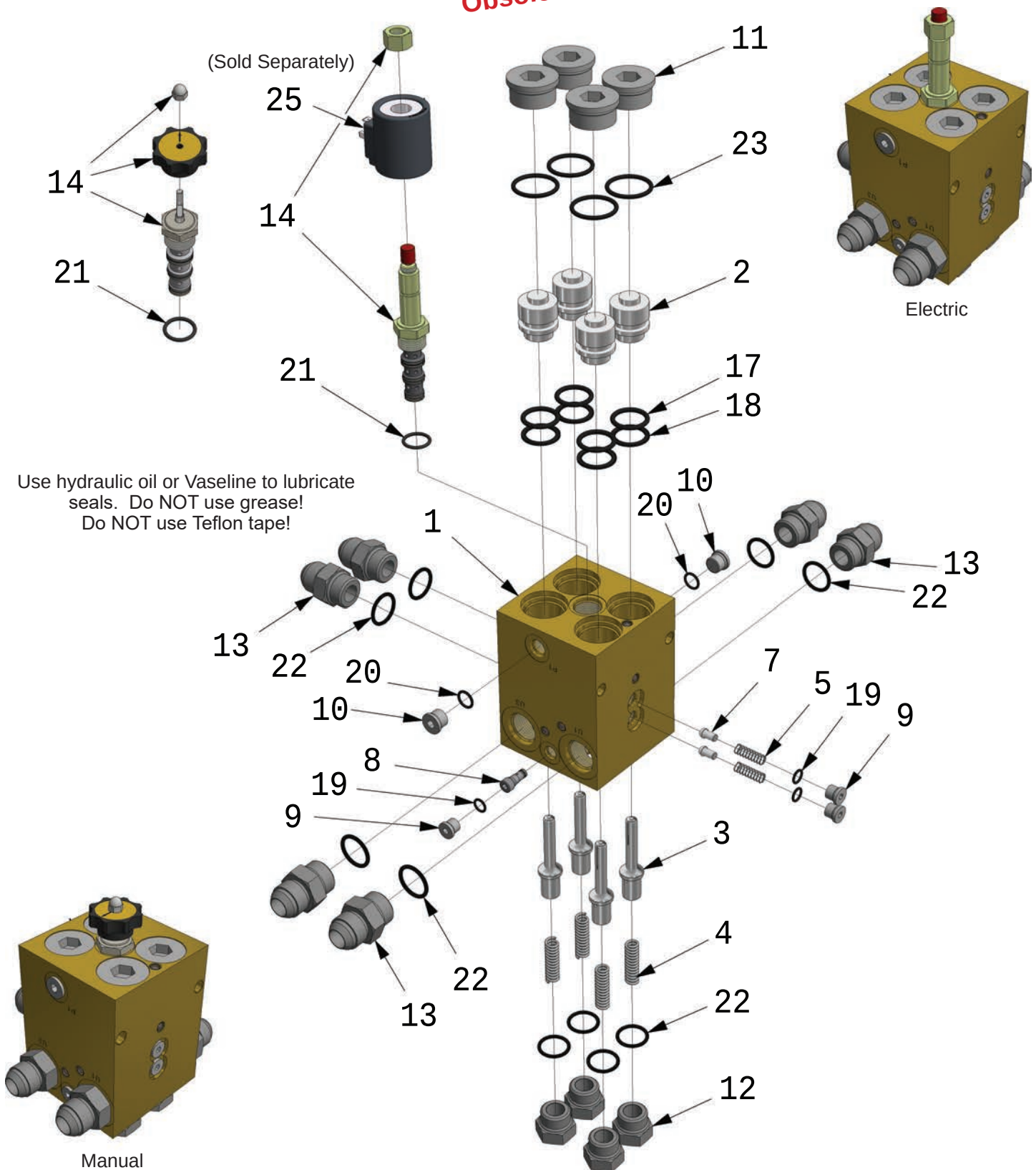


Control Valve (Load/Unload) Assembly - Electric/Manual (Jan 2022 - Present)

ID#	Qty	Electric Part #	Manual Part #	DESCRIPTION
-(1)	-	03244610	03244630	Control Valve (Load/Unload) Assembly (Includes items 1-24)
1	1	03134702		CONTROL VALVE 6 PORT TWO-WAY (Black) (not sold separately)
2	4	03123601		PISTON, CHECK VALVE ACTUATOR
3	4	03138401		PILOT OPERATED CHECK VALVE
4	4	84453400		SPRING CHECK VALVE EXTERNAL LARGE #B-18273
5	2	84450800		SPRING, .328" OD X 1.0" LG, .027 WIRE, 10.5 COILS
6	1	84800500		5/16" CHROME BALL
7	2	11287801		POPPET 6-PORT CTV 032446 TO TANK
8	1	11308201		SHUTTLE VALVE SEAT 6 PORT #32446
9	2	84687300		04 HP50N-S HOLLOW HEX PLUG M O-RING HEX SOCKET
10	2	84687400		06 HP50N-S HOLLOW HEX PLUG M O-RING HEX SOCKET
11	4	84687900		16 HP50N-S HOLLOW HEX PLUG M O-RING HEX SOCKET
12	4	10014101		-12 END CAP MODIFIED was 3860201
13	6	84685000		12 F50X-S STRAIGHT THREAD CONNECTOR MJIC X M O-RING
14	1	85108800	-	Solenoid Valve SV-10-40M-0-N-0 HF
14	1	-	85105200	Cartridge Valve MRV4-10-K-O VIC
-	-	85108798		Seal Kit for Cartridge Valves
-	-	04661701		Seal Kit Control Valve Electric (Includes items 17-24)
15	1	84375200		011 O-RING BUNA 90
16	1	84388406		011 BACK-UP BUNA 90
17	4	84381200		213 O-RING BUNA 90
18	4	84391200		8-213 BACK-UP BUNA 90
19	2	84386600		904 O-RING BUNA 90
20	3	84386800		906 O-RING BUNA 90
21	1	84387200		910 O-RING BUNA 90
22	10	84387400		912 O-RING BUNA 90
23	4	84387800		916 O-RING BUNA 90
24	4	84405415		WEAR RING BRONZE PTFE 1/4 X 1/16
25	1	varies	-	Coil (Sold Separately) Contact KEITH for Information

(1) Part number and descriptions vary based on drive configuration and application.

Control Valve (Load/Unload) Assembly - Electric/Manual (Mar 2000 - Jan 2022)

Obsolete Design

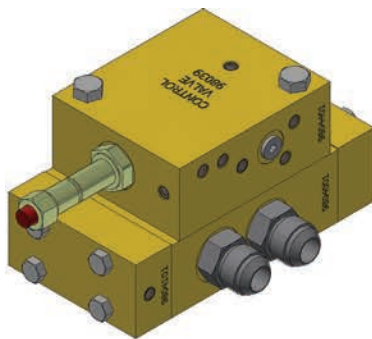
Control Valve (Load/Unload) Assembly - Electric/Manual (Mar 2000 - Jan 2022)

ID#	Qty	Electric Part #	Manual Part #	DESCRIPTION
-(1)	-	03244610	03244630	Control Valve (Load/Unload) Assembly (Includes items 1-23)
1	1	03134701		Electric Control Valve Body
2	4	03123601		Plunger Pilot Operated Check Valve
3	4	03138401		Pilot Operated Check Valve
4	4	84453400		Ext Check Valve Spring Large
5	2	84450800		I-9 Spring
7	2	11287801		Poppet 6-Port CTV 032446 To Tank (Replaces 84800500 5/16" Chrome Ball)
8	1	85104800		Shuttle Valve LS04-B-30-0-N
9	3	84687300		6409-04 MSAE O-Ring Socket Plug
10	2	84687400		6409-06 MSAE O-Ring Socket Plug
11	4	84687900		6409-16 MSAE O-Ring Socket Plug
12	4	10014101		-12 Pilot Operated Spring End Cap (Replaces 03860201 Spring Cap)
13	6	84685000		6400-12-12 MSAE-MJIC Straight Connector
14	1	85108800	-	Solenoid Valve SV-10-40M-0-N-0 HF
14	1	-	85105200	Cartridge Valve MRV4-10-K-O VIC
-	-	85108798		Seal Kit for Cartridge Valves
-	-	04661701		Seal Kit Control Valve Electric (Includes items 17-23)
17	4	84381200		O-Ring 213 Buna 90
18	4	84391200		O-Ring Back-Up 8-213 Buna 90
19	3	84386600		O-Ring 904 Buna 90
20	2	84386800		O-Ring 906 Buna 90
21	1	84387200		O-Ring 910 Buna 90
22	10	84387400		O-Ring 912 Buna 90
23	4	84387800		O-Ring 916 Buna 90
25	1	varies	-	Coil (Sold Separately) Contact KEITH for Information

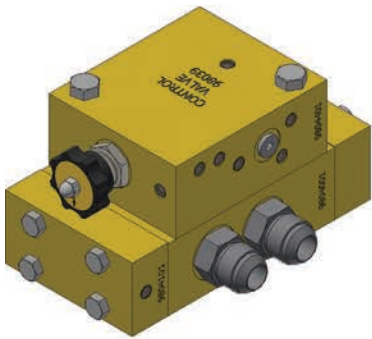
(1) Part number and descriptions vary based on drive configuration and application.

Note: All new control valve assemblies are interchangeable with past assemblies. Internal parts are not necessarily interchangeable.

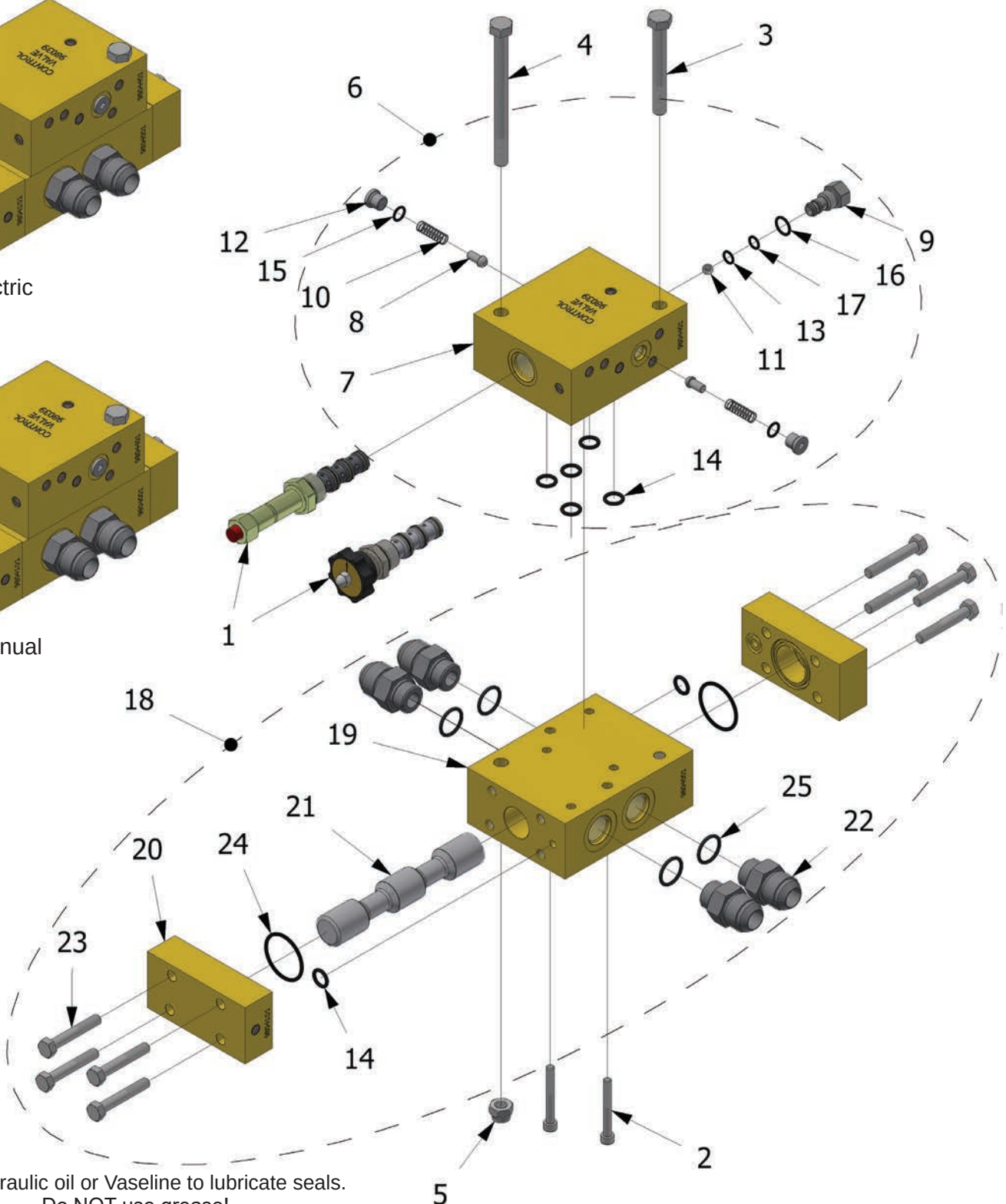
Pilot Operated Control Valve (Load/Unload) Assembly - Electric/Manual



Electric



Manual



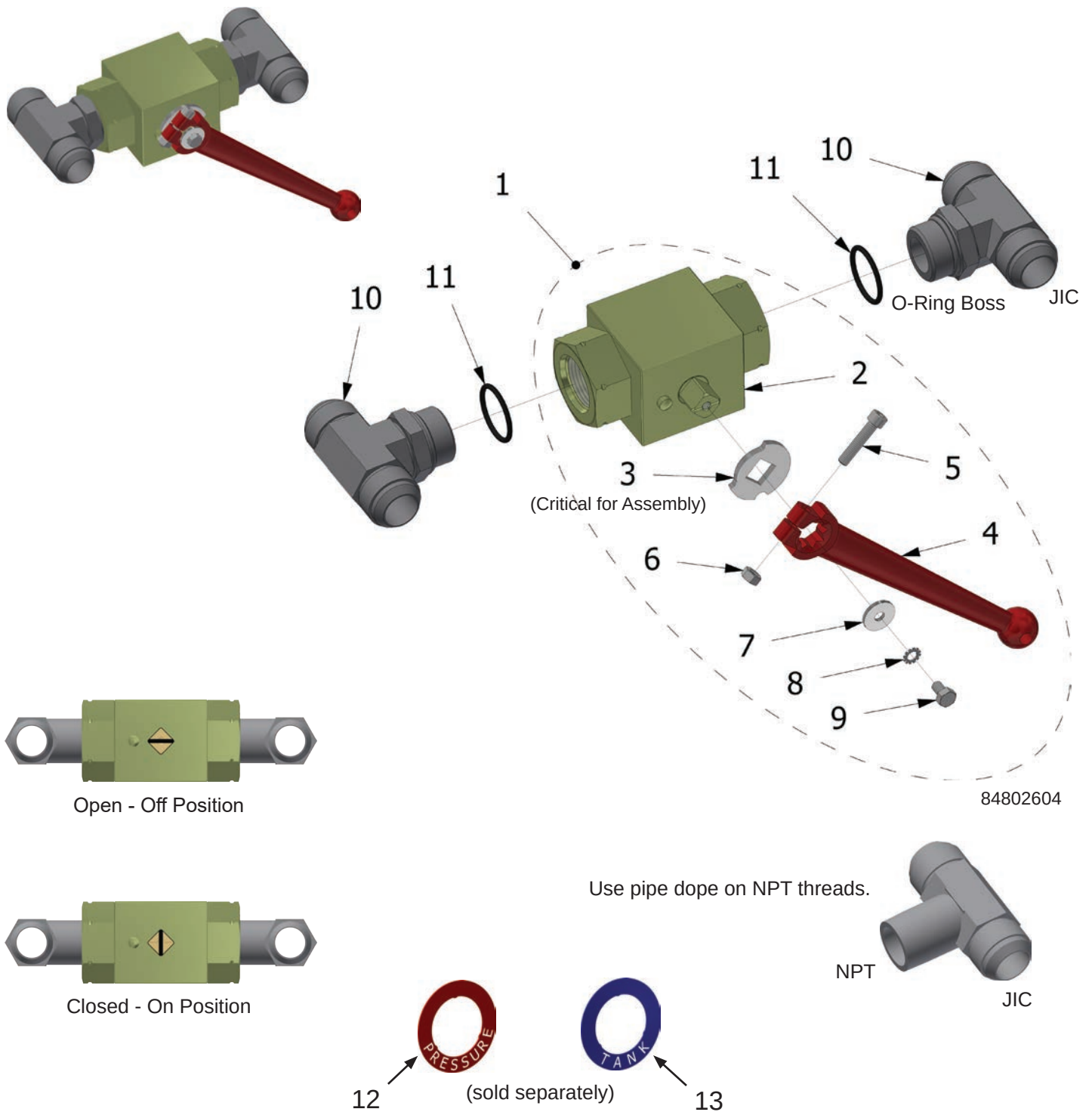
Use hydraulic oil or Vaseline to lubricate seals.
Do NOT use grease!
Do NOT use Teflon tape!

Pilot Operated Control Valve (Load/Unload) Assembly - Electric/Manual

ID#	Qty	Electric Part #	Manual Part #	DESCRIPTION
-(1)	-	09803901	-	Electric Control Valve Assembly Pilot Operated (Includes items 1-25)
-(1)	-	-	09803902	Manual Control Valve Assembly Pilot Operated (Includes items 1-25)
1	1	85108800	-	Cartridge Valve, Hydraforce, 4-WAY, 2 Position, SV10-40M-0-N-0
1	1	-	85105200	Rotary Valve, Cartridge, 4-WAY, 2 Position, MRV4-10
2	2	87004410		BOLT SOCKET HEAD 6MMX50MM
3	1	87010000		BOLT HEX GR10.9 10MMx80MM
4	1	87011560		BOLT HEX GR10.9 10MMx120MM
5	1	87102000		NUT HEX NYLOCK 10mm
6	1	09804301		CONTROL VALVE ACTUATOR ASSY
7	1	09804401		ACTUATOR BODY CONTROL VALVE
8	2	11287801		POPPET 6-PORT CTV 032446 TO TANK
9	1	11308201		SHUTTLE VALVE SEAT 6 PORT #32446
10	2	84450800		SPRING, .328" OD X 1.0" LG, .027 WIRE, 10.5 COILS
11	1	84800500		5/16" CHROME BALL
12	2	84687300		04 HP50N-S HOLLOW HEX PLUG M O-RING HEX SOCKET
13	1	84375200		011 O-RING BUNA 90
14	5	84376200		111 O-RING BUNA 90
14	2	84376200		111 O-RING BUNA 90
15	2	84386600		904 O-RING BUNA 90
16	1	84386800		906 O-RING BUNA 90
17	1	84388406		011 BACK-UP BUNA 90
18	1	09804501		BODY ASSEMBLY, ELECTRIC CONTROL VALVE
19	1	09804001		ELECTRIC CONTROL VALVE BODY
20	2	09804101		END CAP, PILOT OPERATED CONTROL VALVE
21	1	09804201		SPOOL, CONTROL VALVE
22	4	84684900		12-10 F50X-S Straight Thread Connector MJIC X M O-RING
23	8	87006090		BOLT HEX GR8.8 8MMx50MM
24	2	84378200		126 O-RING BUNA 90
25	4	84387200		910 O-RING BUNA 90
26	-	11528101		Seal Kit (Includes items 13-17, 24-26 & Seal Kit for Cartridge Valve #1)

(1) Part number and descriptions vary based on drive configuration and application.

Ball Valve (On/Off) Assembly - Manual

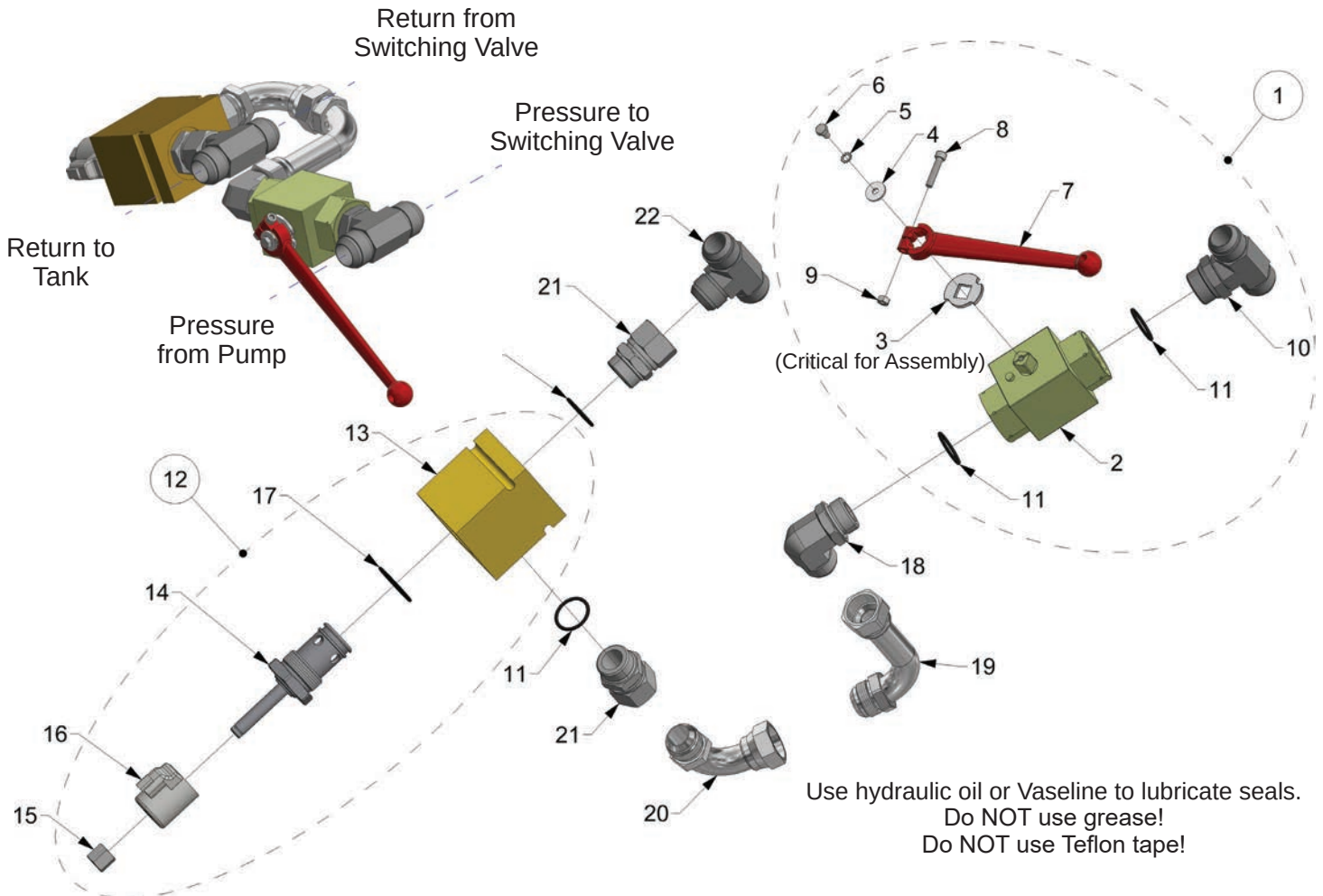


Use hydraulic oil or Vaseline to lubricate seals.
Do NOT use grease!
Do NOT use Teflon tape!

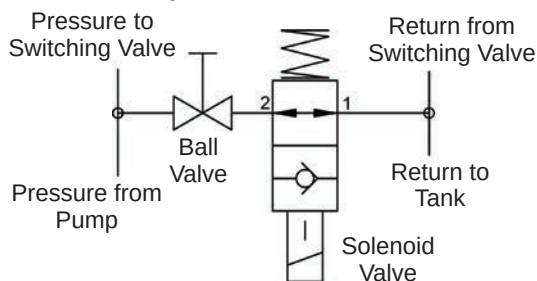
Ball Valve (On/Off) Assembly - Manual

ID#	Qty	O-Ring Boss JIC Part #	NPT JIC Part #	DESCRIPTION
-	-	84802604	84802600	BALL VALVE 1" ASSEMBLY (Includes items 2-11)
1	1	84802620	-	BALL VALVE 1" O-RING BOSS W/ HANDLE NO TEES (Includes items 2-9)
		-	84802800	BALL VALVE 1" BKH 1NPT-1123 W/ HANDLE HEX BOLT & FLAT WASH (Includes items 2-9)
2	1	84802605	-	BALL VALVE BODY 1" O-RING BOSS
		-	84802859	BALL VALVE BODY AE2N1-11DB NPT?
3	1	84802910		Spud Stop LW56 (Critical for Assembly)
4	1	84802900		Ball Valve Handle Assembly (Includes items 4-6)
5	1	87003100		Bolt Socket Head GR8 6mmx1mmx30mm
6	1	87100510		Nut Hex 6mmx1mm
-	-	87075503		HANDLE TO BV BOLT KIT (Includes items 7-9)
7	1	87075400		Washer Flat 6 mm
8	1	87075501		Star Washer External Tooth M6
9	1	87002460		Bolt Hex GR8 6mmx1mmx12mm
10	2	84692110	-	16 S5OX-S STRAIGHT THREAD TEE MJIC X MJIC X ADJ O-RING (6803-16-16-16)
		-	84677880	16 STX-S MALE BRANCH TEE MJIC X MJIC X MPIPE
11	2	84387800	-	916 O-RING BUNA 90
12	1	11467301		PLATE ID RED PRESSURE (sold separately)
13	1	11467302		PLATE ID BLUE TANK (sold separately)

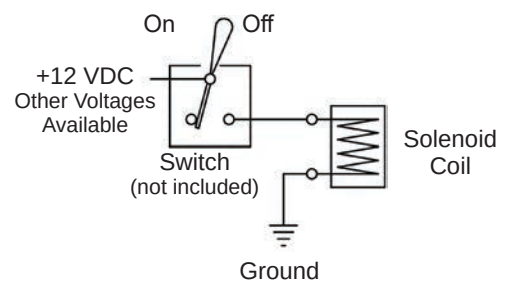
Ball Valve (On/Off) Assembly - Electric



Hydraulic Schematic



Wiring Diagram



INSTALLATION

1. Remove the existing ball valve. It is mounted on the front of the drive frame, on the drivers side, between the pressure and return lines.
2. Install the electrical on/off control assembly.
3. Connect the pressure and return lines as shown.
4. Supply electrical power to the solenoid.
5. Install the switch in the electrical supply coil.
6. Run the wiring in water-tight flex conduit.

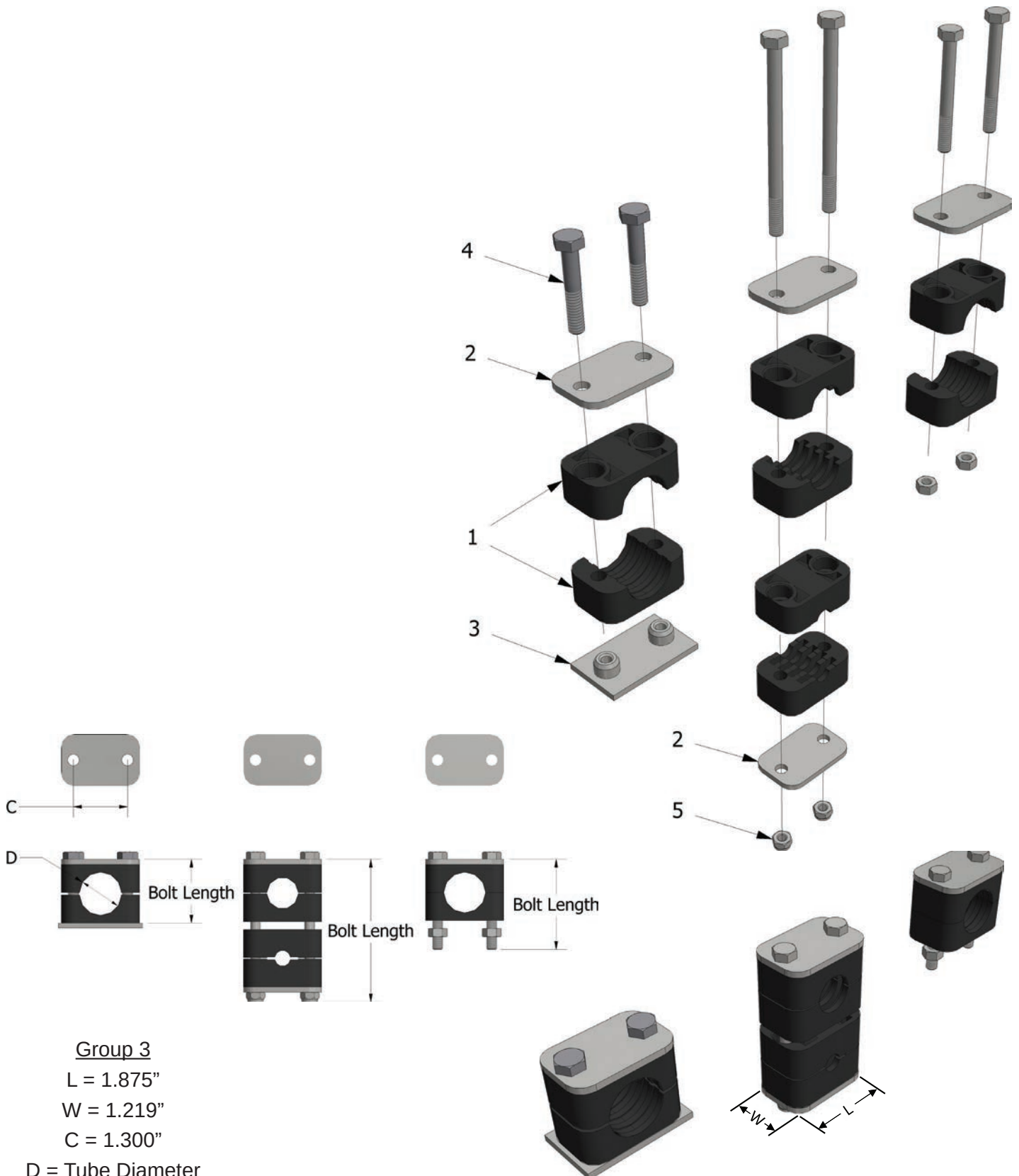
OPERATION

1. Shift the ball valve handle to the open position.
 2. Set the electrical switch to the Off position.
 3. Engage the PTO to start the hydraulic pump.
 4. Turn electrical switch to the On position to start the walking floor. (Solenoid coil must be energized for the walking floor to move.)
- To start or stop the floor using the manual ball valve on the drive.
- Set the electrical switch to the Off position.
 - Close the ball valve to start the walking floor.
 - Open the ball valve to stop the walking floor.

Ball Valve (On/Off) Assembly - Electric

ID#	Qty	Part #	DESCRIPTION
-	-	03426601	Electric On/Off Ball Valve Assembly (Includes items 1-22)
1	1	84802601	Manual On/Off Ball Valve Assembly (Includes items 2-11)
2	1	84802620	Ball Valve Body 1" O-Ring Boss
3	1	84802910	Spud Stop (critical for assembly)
4	1	w/ball valve	Washer Flat 6mm
5	1	w/ball valve	Star Washer External Tooth M6
6	1	w/ball valve	Bolt Hex GR8 6mm x 1mm x 10mm
7	1	84802900	Ball Valve Handle Assembly
8	1	w/handle	Bolt Socket Head GR8 6mmx1mmx30mm
9	1	w/handle	Nut Hex 6mm x 1mm
10	1	84692110	6803-16 Tee
11	4	84387800	916 O-Ring Buna 90
12	1	85108200	Electric Solenoid Valve Assembly (Includes items 11-17)
13	1	85101600	Body Valve 20822 566409 2-Way
14	1	85108120	Valve Cartridge SV3-20-0-16H-12DN
-	-	85108798	Seal Kit for Cartridge Valves
15	1	w/cartridge	Nut
16	1	84388000	920 O-Ring Buna 90
17	1	85602615	Coil, 12 VDC w/Deutsch Conn. Vickers
18	1	84677400	2501-16-16 Male Elbow
19	1	84683700	63UC-16-16 Long Bent Stem 90 Deg.
20	1	84683200	63UA-16-16 Bent Stem 90 Deg.
21	2	84686200	6402-16-16 Swivel St. Thread Connector
22	1	84678100	2603-16-16-16 Union Tee

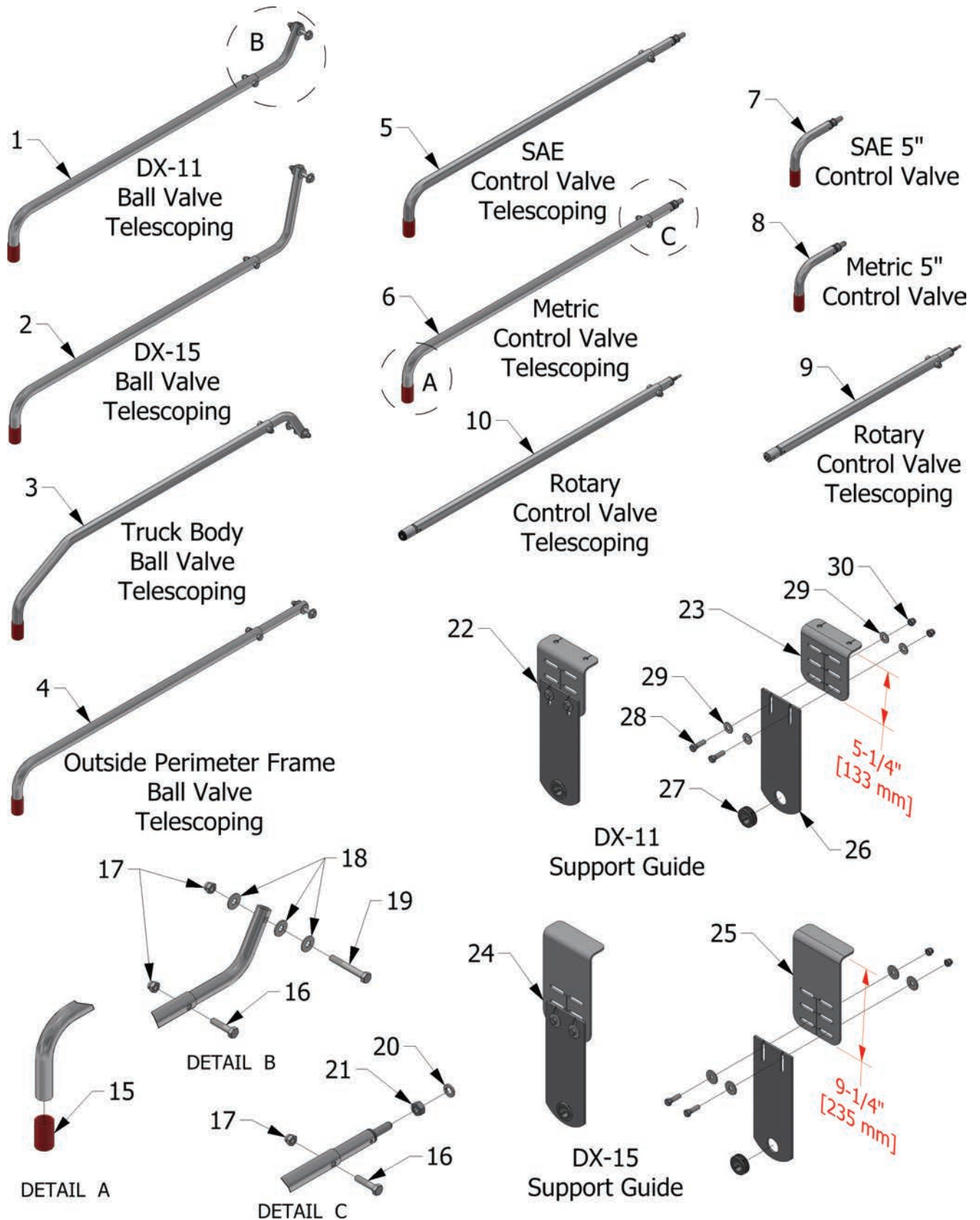
Tube Clamps



Tube Clamps

ID#	Qty	Part #	Part #	Part #	Part #	Part #	Part #	Part #	DESCRIPTION
-	-	04631101	-	-	-	-	-	-	Tube Clamp Assembly 1" Tube Group 3 3100-PP
-	-	-	04631102	-	-	-	-	-	Tube Clamp Assembly 3/4" Tube Group 3 3075-PP
-	-	-	-	04631103	-	-	-	-	Tube Clamp Assembly 3/8" Tube Group 3 3038-PP
-	-	-	-	-	04631104	-	-	-	Tube Clamp Assembly 1/2" Tube Group 3 30840-PP
-	-	-	-	-	-	04631105	-	-	Tube Clamp Assembly 7/8" Tube Group 3 3087-PP
1	1 pair	84750300	-	-	-	-	-	-	Clamp 1" Tube Group 3 3100-PP
1	1 pair	-	84750200	-	-	-	-	-	Clamp 3/4" Tube Group 3 3075-PP
1	1 pair	-	-	84750100	-	-	-	-	Clamp 3/8" Tube Group 3 3038-PP
1	1 pair	-	-	-	84750060	-	-	-	Clamp 1/2" Tube Group 3 30840-PP
1	1 pair	-	-	-	-	84750230	-	-	Clamp 7/8" Tube Group 3 3087-PP
2	1-2	84751200	84751200	84751200	84751200	84751200	-	-	Cover Plate COP-03
3	1	-	-	84748990	84748990	84748990	-	-	Bolt Plate - Weld On STW-03 1/4"
3	1	-	-	-	-	-	84748991	-	Bolt Plate - Weld On STW-03 1/4" Unplated
3	1	-	-	-	-	-	84748992	-	Bolt Plate - Weld On STW-03 1/4" SS
3	1	-	-	-	-	-	84748995	-	Bolt Plate - Weld On STW-03 M6
4	2	-	86416500	-	-	-	-	-	Hex Bolt 1/4" x 1-1/2
4	2	86419500	-	86419500	86419500	86419500	-	-	Hex Bolt 1/4" x 2-1/4"
4	2	-	-	-	-	-	87004510	-	Hex Bolt 6mm x 1 x 55mm
4	2	-	-	-	-	-	87004600	-	Hex Bolt 6mm x 1 x 85mm
4	2	-	-	-	-	-	87004570	-	Hex Bolt 6mm x 1 x 70mm
5	2	86626000	86626000	86626000	86626000	86626000	-	-	Hex Nut - Nylock 1/4"-20
5	2	-	-	-	-	-	87105000	-	Hex Nut - Nylock M6x1

Handle Assemblies & Support Guide Assemblies



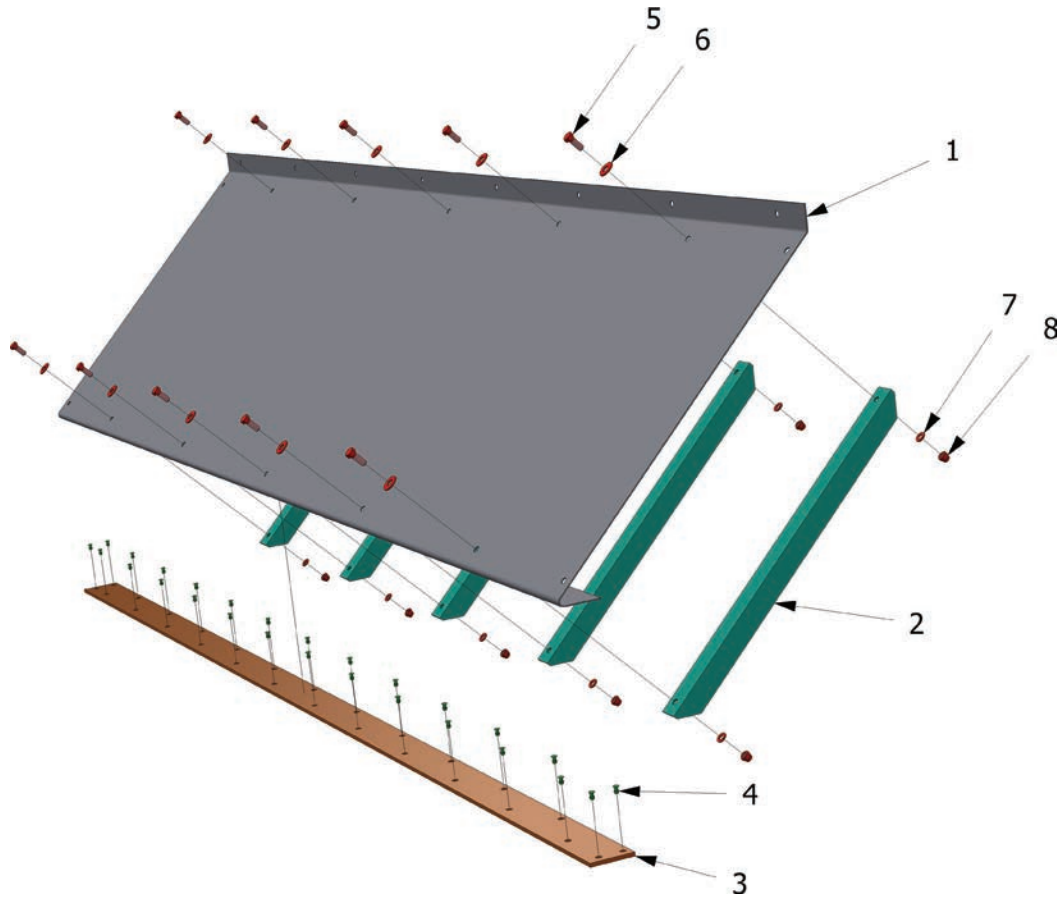
Handle Assemblies

ID#	Qty	Part #	DESCRIPTION
1	-	11262401	Telescoping DX11 Ball Valve Handle Assembly (Includes items 15-19)
2	-	11262501	Telescoping DX15 Ball Valve Handle Assembly (Includes items 15-19)
3	-	11262601	Telescoping DX-TB Ball Valve Handle Assembly (Includes items 15-19)
4	-	11262701	Telescoping DX-OSP Ball Valve Handle Assembly (Includes items 15-19)
5	-	11262801	Telescoping DX Control Valve Handle Assy SAE (Includes items 15-17, 20-21)
6	-	11262901	Telescoping DX Control Valve Handle Assy Metric (Includes items 15-17, 20-21)
7	-	11229429	Control Valve Handle Assembly DX-SAE 5" (Includes items 15, 20-21)
8	-	11229430	Control Valve Handle Assembly DX-MET 5" (Includes items 15, 20-21)
9	-	11263001	Telescoping 23-39" Rotary DX Control Valve Handle Assembly Metric (Includes items 16-17)
10	-	11263101	Telescoping 33-59" Rotary DX Control Valve Handle Assembly Metric (Includes items 16-17)
15	1	85711565	ROUND END CAP - RED - .875" ID X 1.5" LONG FOR HANDLES
16	1	87005950	BOLT HEX 8.8 8-1.25MM X 35MM ZN
17	2	87101000	NUT HEX NYLOCK 8MM-1.25
18	3	86552500	WASHER FLAT 5/16" ZINC
19	1	87006200	BOLT HEX 8.8 8-1.25MM X 60MM ZN
20	1	86555000	WASHER LOCK 3/8"
	1	87076500	WASHER LOCK 10MM
21	1	86628500	NUT HEX GR8 ZN 3/8-16
	1	87101500	NUT HEX 10MM

Support Guide Assemblies

ID#	Qty	Part #	DESCRIPTION
22	-	06627102	DX11 Handle Mount Support Assembly (Included items 21 & 24-28)
23	1	06625401	DX11 Angle Mount Plate 5-1/4"
24	-	06747801	DX15 Handle Mount Support Assembly (Included items 23 & 24-28)
25	1	06698501	DX15 Angle Mount Plate 9-1/4"
26	1	03690401	Handle Mount Plate
27	1	83218400	Grommet 1 X .25 X 1.375 2572
28	2	87008510	BOLT HEX 10.9 10MM X 35MM
29	4	87076000	WASHER FLAT 10MM
30	2	87102000	NUT HEX NYLOCK 10MM

Front Shield Assembly



Front Shield Assembly

ID#	Qty	36" Part #	30" Part #	DESCRIPTION
-	-	035395xx*	035396xx*	Front Shield Assembly x Length (Includes all items below)
1	1	035397xx	-	Formed Sheet, 36" x Length, 16 Gauge Galvanized
		-	35398xx	Formed Sheet, 30" x Length, 14 Gauge Galvanized
2	varies	03539901	03540001	Stiffener Angle 1-1/2" x 1-1/2"x 1/8"
3	1	03540110		UHMW Bearing Strip 102" 1/4 X 2-7/8 No Holes
4	varies	86528000		Pop Rivet .188"x.250"-.375" Grip, AL AB6-6
5	2/stiffener	86437000	-	Bolt Hex GR8 ZN 3/8"-16 X 3/4"
		-	86437500	Bolt Hex GR8 ZN 3/8-16x1
6	2/stiffener	86554000		Washer Flat 3/8
7	2/stiffener	86555000		Washer Lock 3/8
8	2/stiffener	86628500		Nut Hex GR8 ZN 3/8-16

* Part numbers and descriptions vary based on trailer width and application.

(Final Page)