

RUNNING FLOOR II®

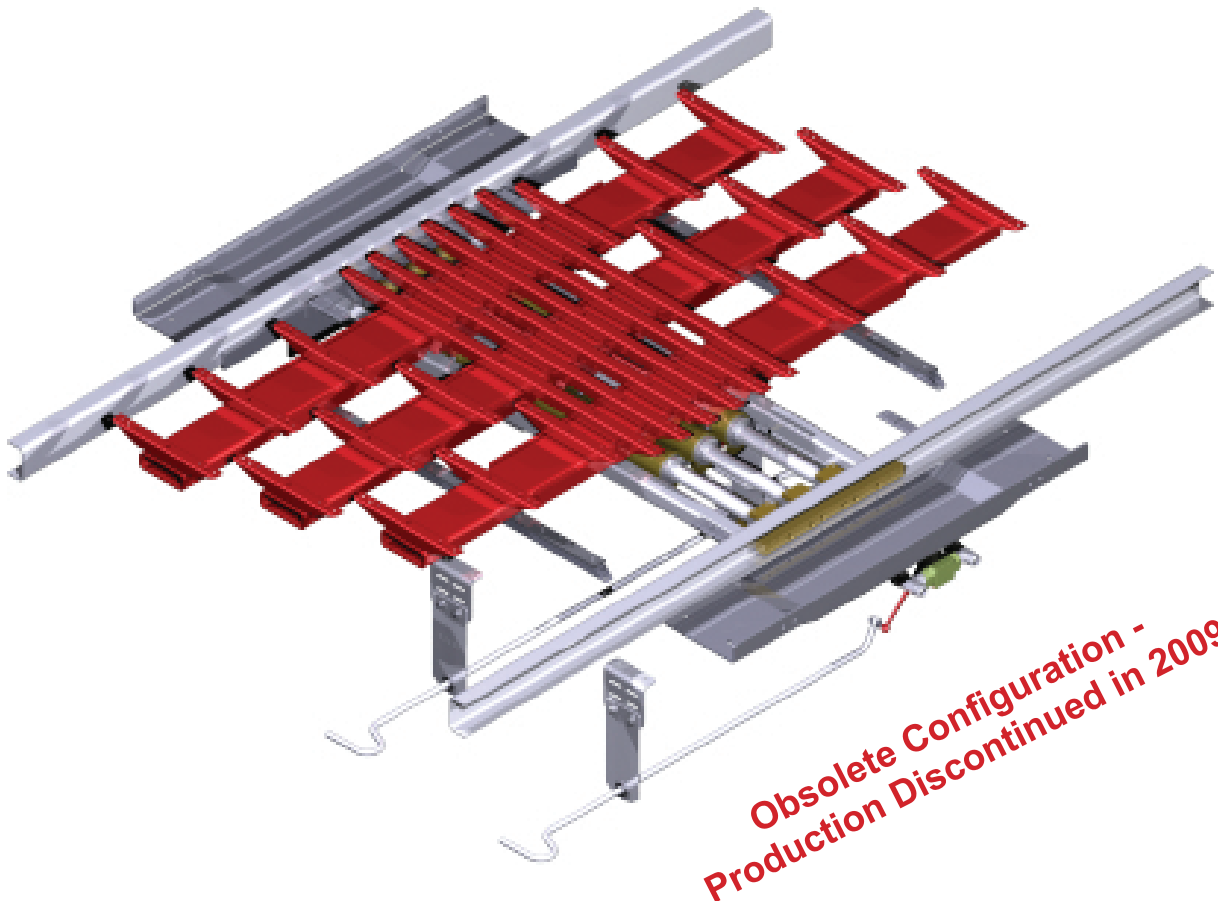
KEITH Manufacturing Co.

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World Headquarters

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PARTS CATALOG

Original Instructions

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DOC06430 Rev. D

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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.

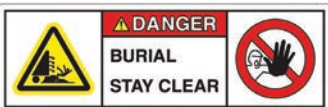
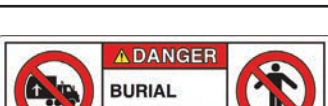
Service Information

- 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.

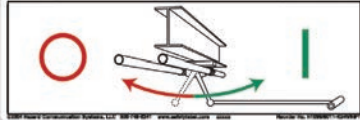
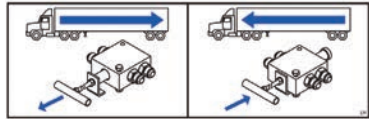
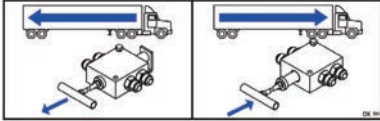
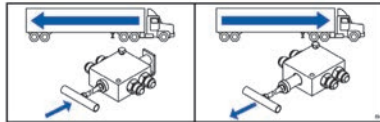
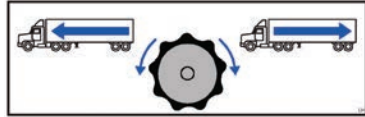
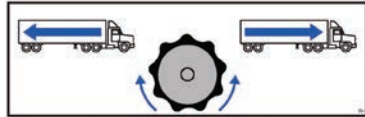
KEITH Mfg. fabricates many standard drive systems, included in this parts catalog, and also fabricates custom drive systems, too numerous to include, therefore KEITH requires the following information from your drive system to ensure we provide you with most accurate information. Please have the following 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
		9	84804129	1	1	1	1	1
Controls on Left Side of Truck/Trailer 		10	84804131	1	-	-	-	-
	Controls on Right Side of Truck/Trailer	10	84803906	-	1	-	-	-
	Controls on Right Side of Truck/Trailer	10	84804130	-	-	1	-	-
Controls on Left Side of Truck/Trailer 		10	84803904	-	-	-	1	-
	Controls on Right Side of Truck/Trailer	10	84803905	-	-	-	-	1

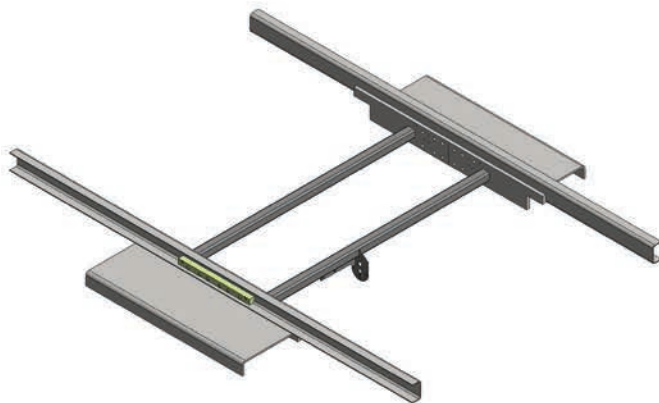
Drive Frame Styles



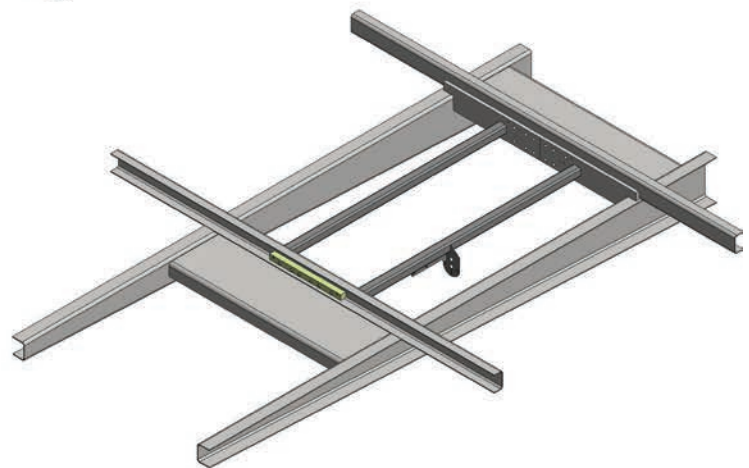
STEEL UNIVERSAL MOUNT



ALUMINUM UNIVERSAL MOUNT



STEEL CENTER MOUNT



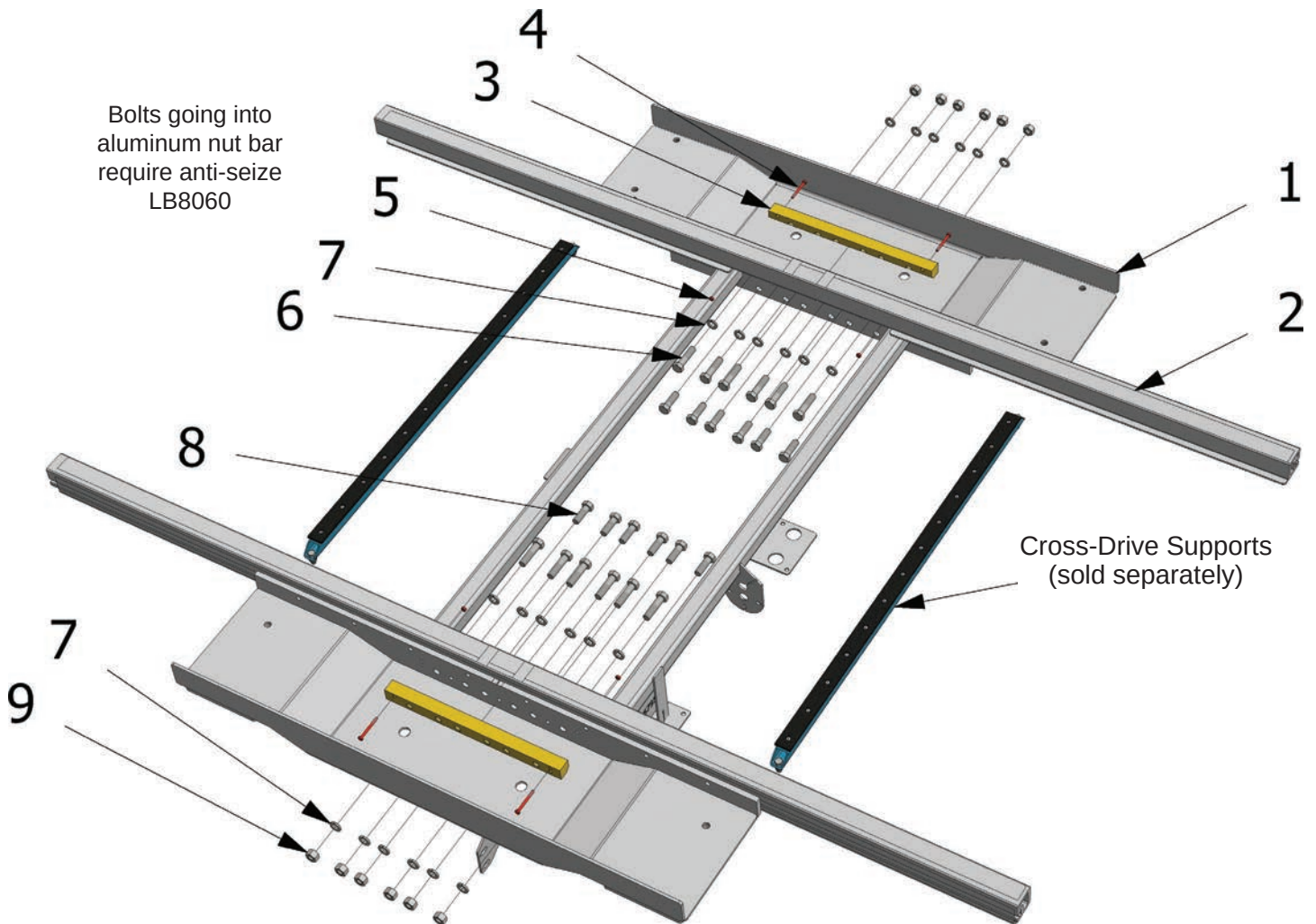
STEEL CENTER MOUNT IN RAILS



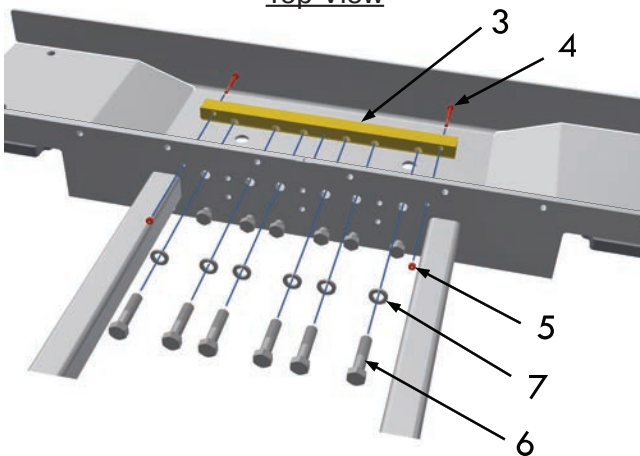
STEEL OUTSIDE PERIMETER MOUNT

09121501

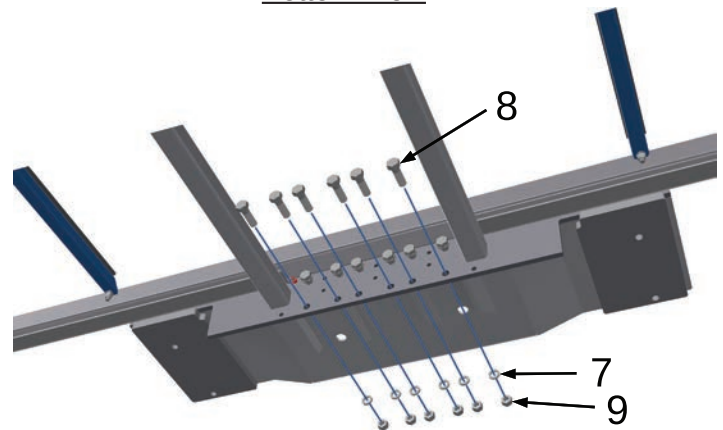
Drive Frame & Related Components



Top View



Bottom View



Drive Frame & Related Components

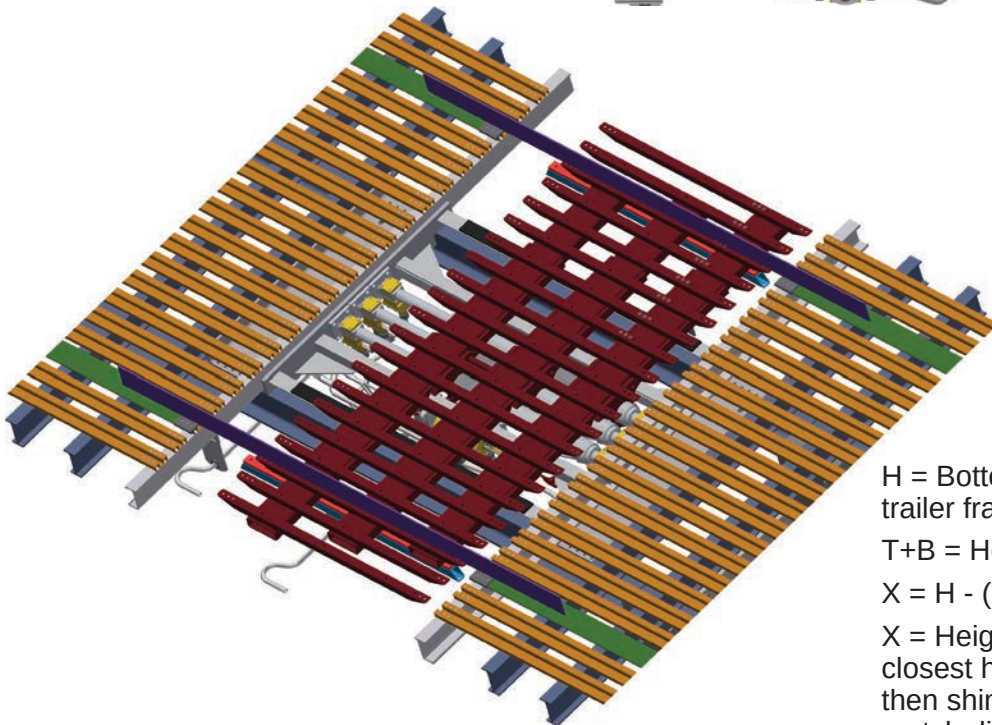
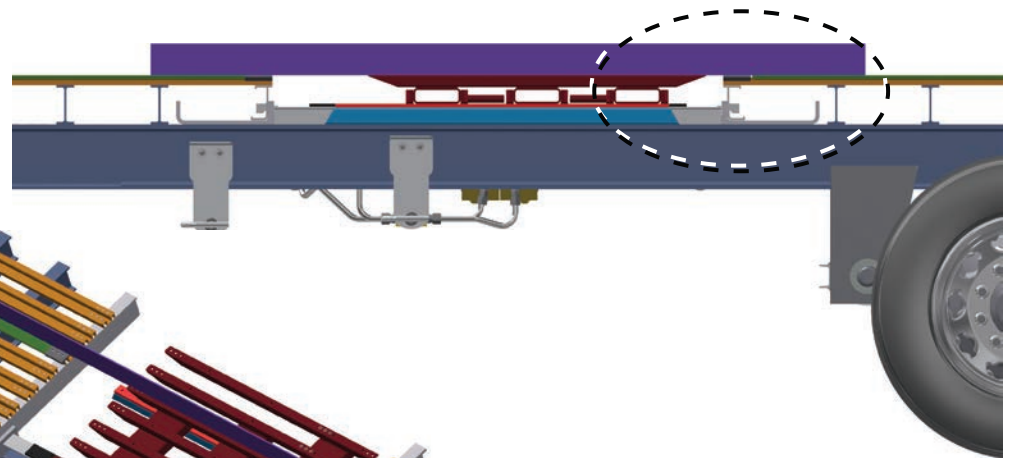
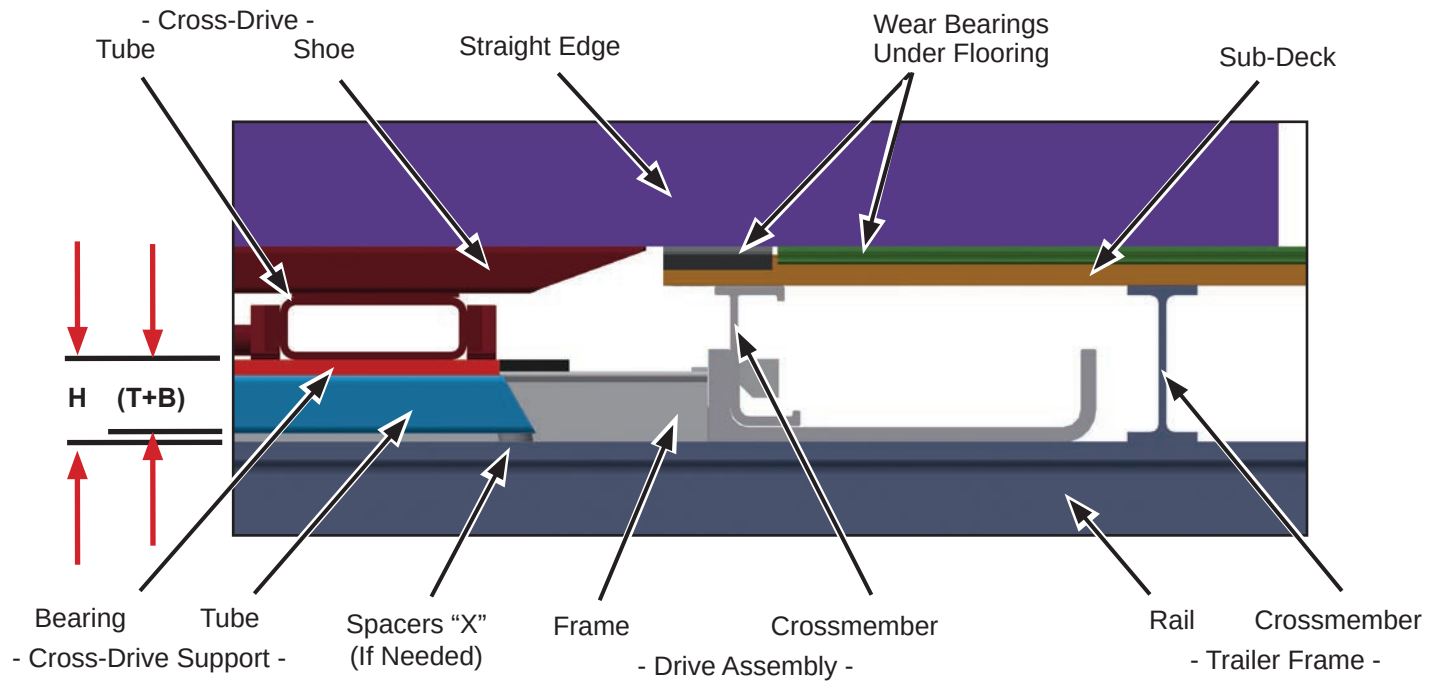
ID#	Qty	SAE Part #	Metric Part #	Description
-	(1)	-(⁽¹⁾)	-(⁽¹⁾)	Drive Frame Assembly (Includes items 1-18)
1 ⁽¹⁾	1	-	-	Drive Frame Steel
2 ^{(1) (2)}	2	w/frame	w/frame	Channel Formed 4"x2 1/4"x3/16"
3 ⁽¹⁾	2	01253701	01253702	Nut Bar Threaded 4.5" Cylinder Centers
	2	01173101	01173102	Nut Bar Threaded 5.0" Cylinder Centers
	2	01253801	01253802	Nut Bar Threaded 6.0" Cylinder Centers
	2	05181401	05181402	Nut Bar Threaded 10.0" Cylinder Centers
	2	05047001	05047002	Nut Bar Threaded 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



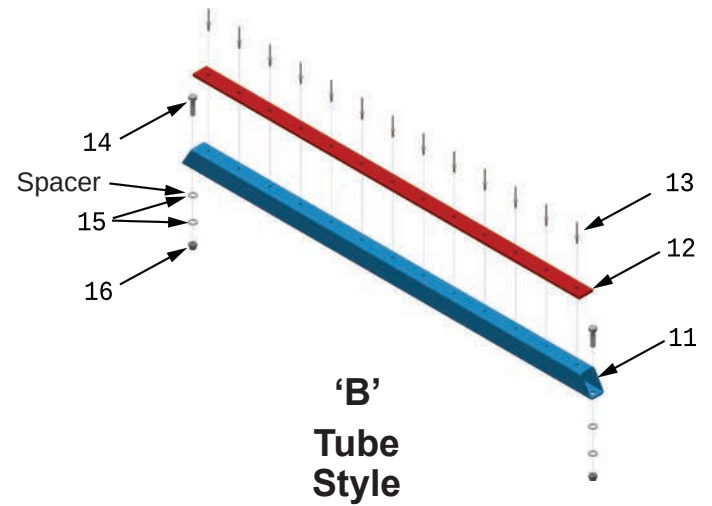
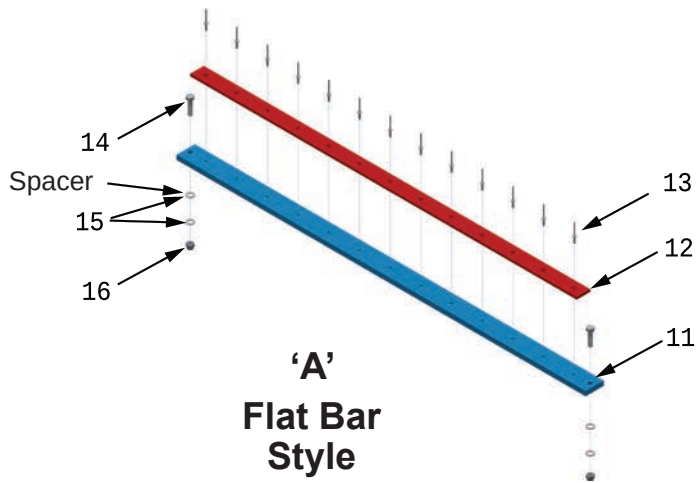
H = Bottom of cross-drive tube to top of trailer frame rail

T+B = Height of Bearing + Tube

$X = H - (T+B)$

X = Height of spacers required. Select closest height Cross-Drive Supports (T+B) then shim up with washers if needed to match dimension H +0" / -1/16"

Cross-Drive Support Assemblies

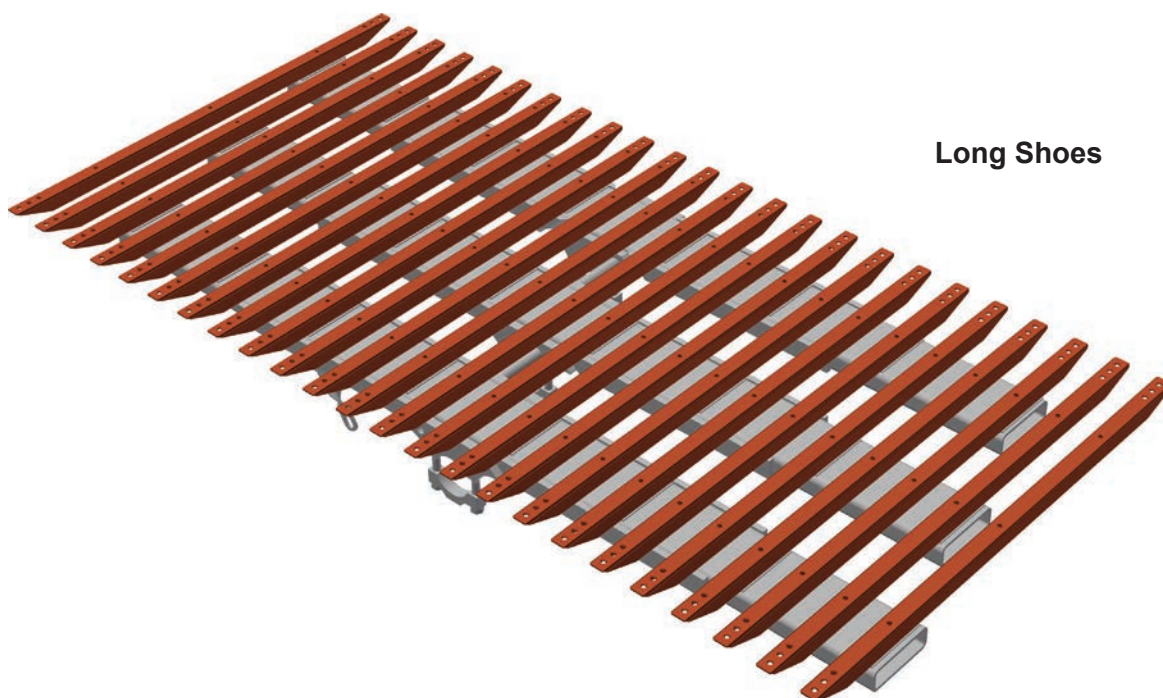
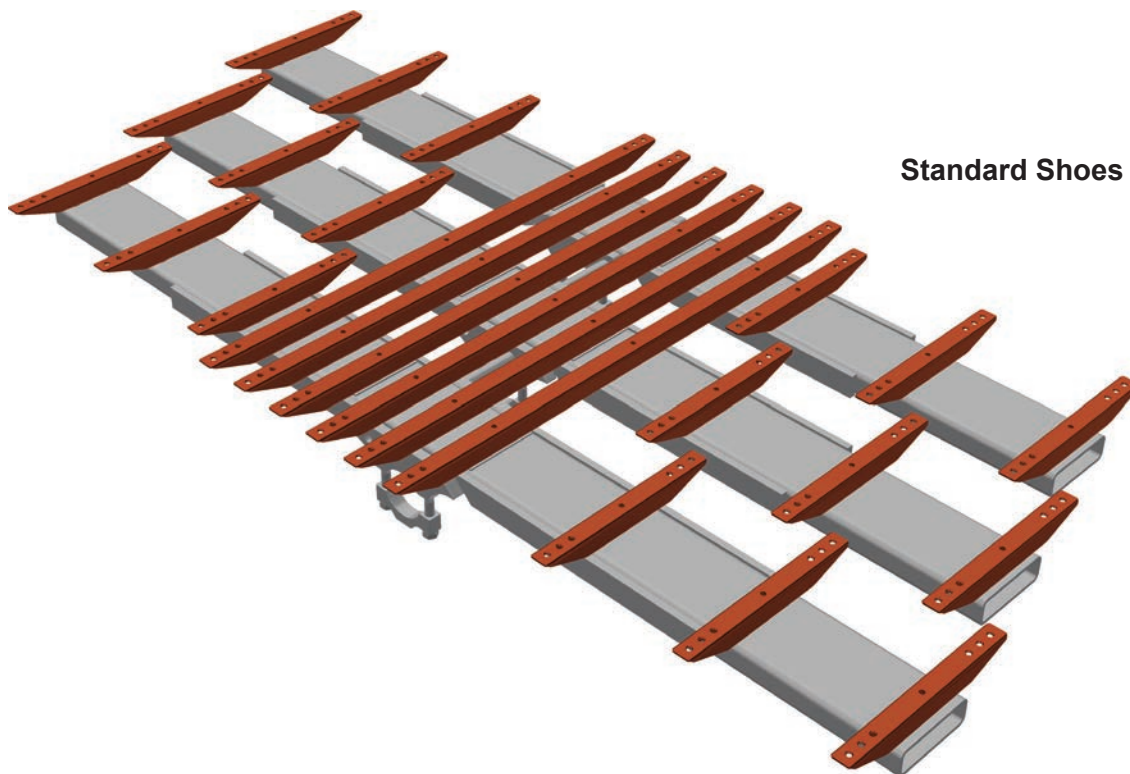


Cross-Drive Support Assemblies

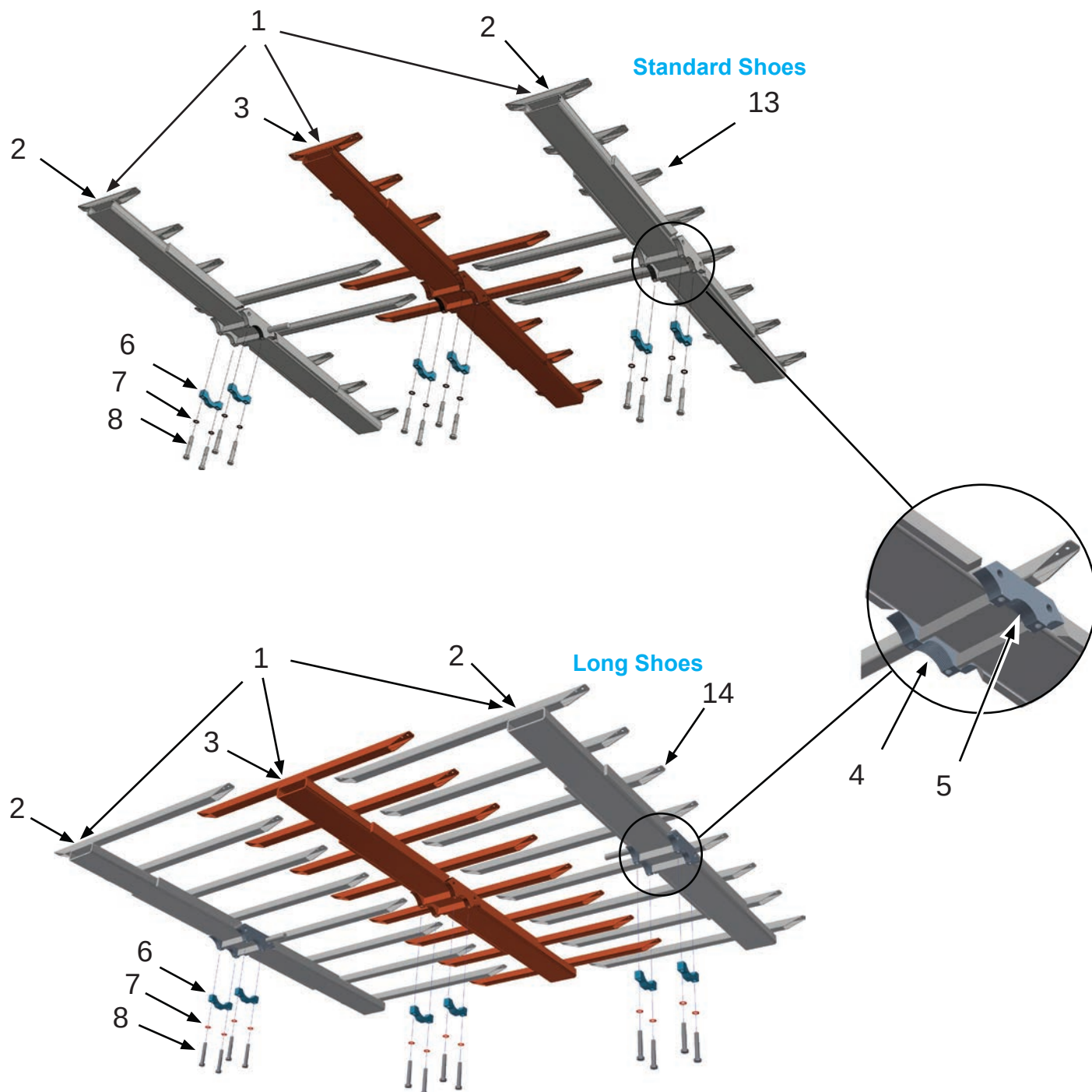
ID #	Qty	'A' Part #	'A' Part #	'A' Part #	'A' Part #	'B' Part #	'B' Part #	'B' Part #	Description
- ⁽¹⁾	(2)	06000801	05068501	04368501	06040301	03467804	03467802	03467805	Cross-Drive Support Assembly (Includes items 11-17)
T+B	-	3/4" [19 mm]	3/4" [19 mm]	3/4" [19 mm]	3/4" [19 mm]	1-1/2" [38 mm]	1-5/8" [41 mm]	1-7/8" [48 mm]	Combined Height Bar/Tube + Bearing (#11+#12)
11 ⁽¹⁾	1	06000701	-	-	-	-	-	-	Bar AL 1/2"x2"x34"
		-	05068801	-	-	-	-	-	Bar ST 1/2"x2"x45"
		-	-	04081501	-	-	-	-	Bar ST 1/2"x1-1/2"x45"
		-	-	-	06040201	-	-	-	Bar AL 1/2"x2"x45"
12 ⁽¹⁾	1	-			03453901	03467702			Tube ST 1-1/4"x1-1/4"x45"
		06001101	-	-		-	-	-	Bearing Strip UHMW 1/4"x1-1/2"x32"
		-	04985601	-		-	-	-	Bearing Strip UHMW 1/4"x2"x42-1/2"
		-	-	-		-	-	-	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	86528000			-			Rivet 3/16"x3/8" AB6-6	
14	2	-			86528150			Rivet 3/16"x1/2" AB6-8	
		86438000			-			Bolt Hex GR8 ZN 3/8"-16 X 1-1/4" HCS	
15	2	-			87008520			Bolt Hex M10 x 1.5 x 40	
		86554000			-			Washer Flat 3/8" Hard USS	
		86553500			-			Washer Fender 3/8"x1-1/2"x(1/8" Spacer "X")	
16	2	-			87076000			Washer Flat M10 (1/16" Spacer "X")	
		86628500			-			Nut Hex 3/8"-16 GR8 ZINC	
		-			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



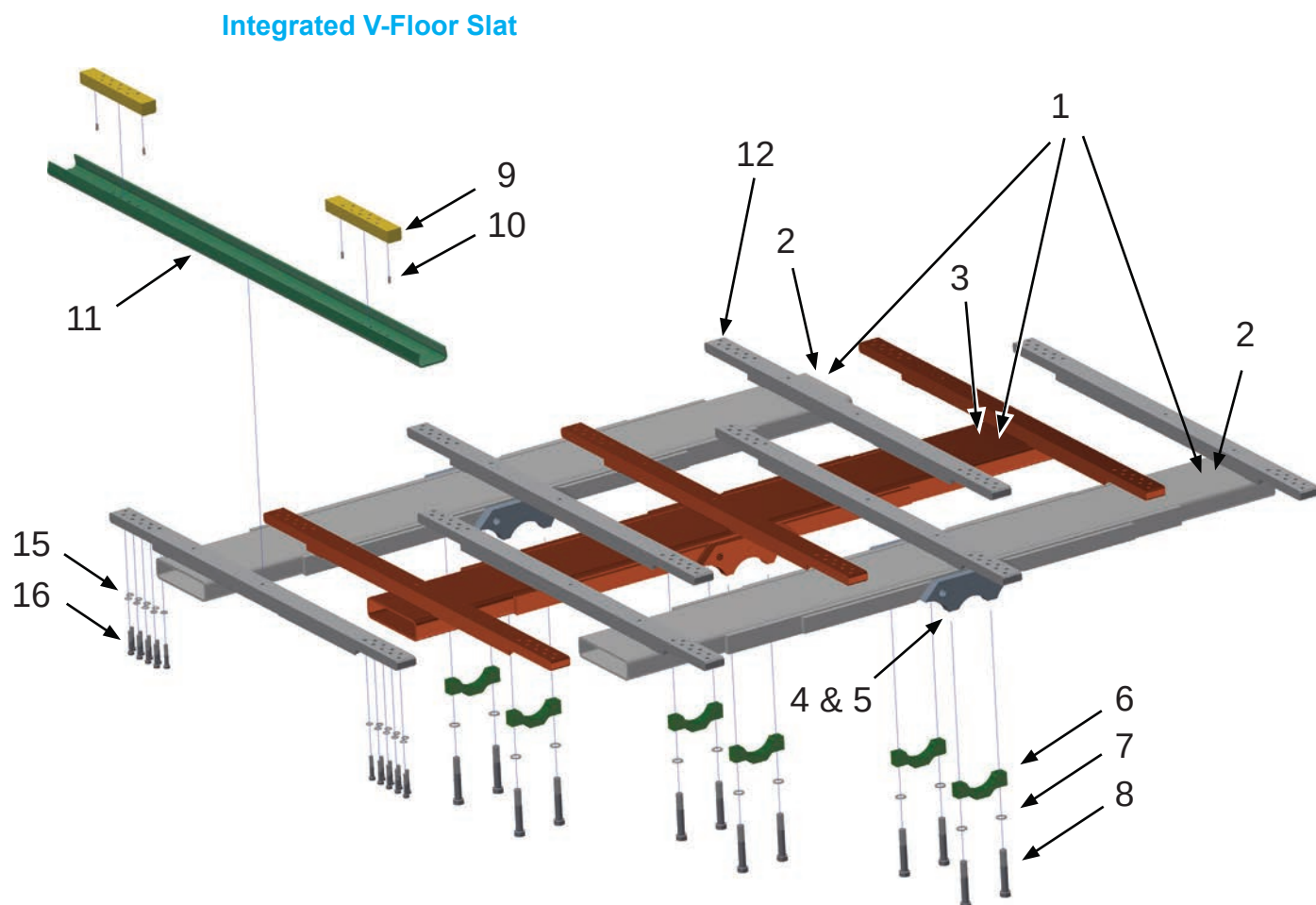
Cross-Drive Assembly



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⁾	(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	08053201	08053202	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
	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⁾	(1)	-	-	-	-	-	-	Cross-Drive Set (Includes items 2-5)
2 ⁽¹⁾	2	-	-	-	-	-	-	Cross-Drive #1 & #3
3 ⁽¹⁾	1	-	-	-	-	-	-	Cross-Drive #2
4	1/CD	03024501	03024502	03024601	03024602	06837801	06837802	Upper Threaded Weld On Clamp
5	1/CD	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)
- Number & 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)

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****84685010****84686100**Straight

12 Female JIC - 12 Male ORB

Straight
12 Male JIC - 12 Male JIC**84672700**Straight
12 Male JIC - 12 Male ORB**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

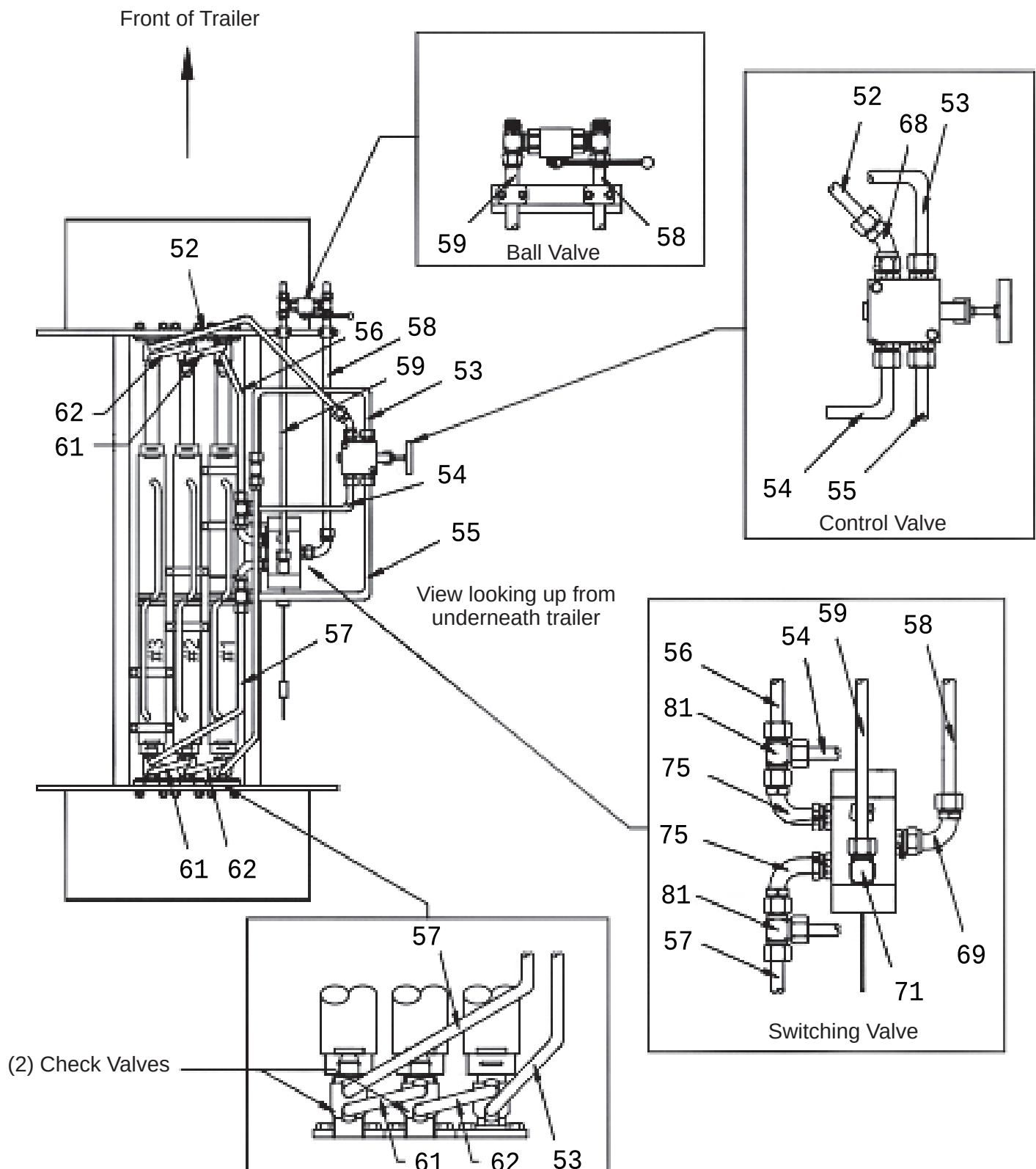
16 Male JIC - 16 Male ORB

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

Left Side Controls - Manual Control Valve

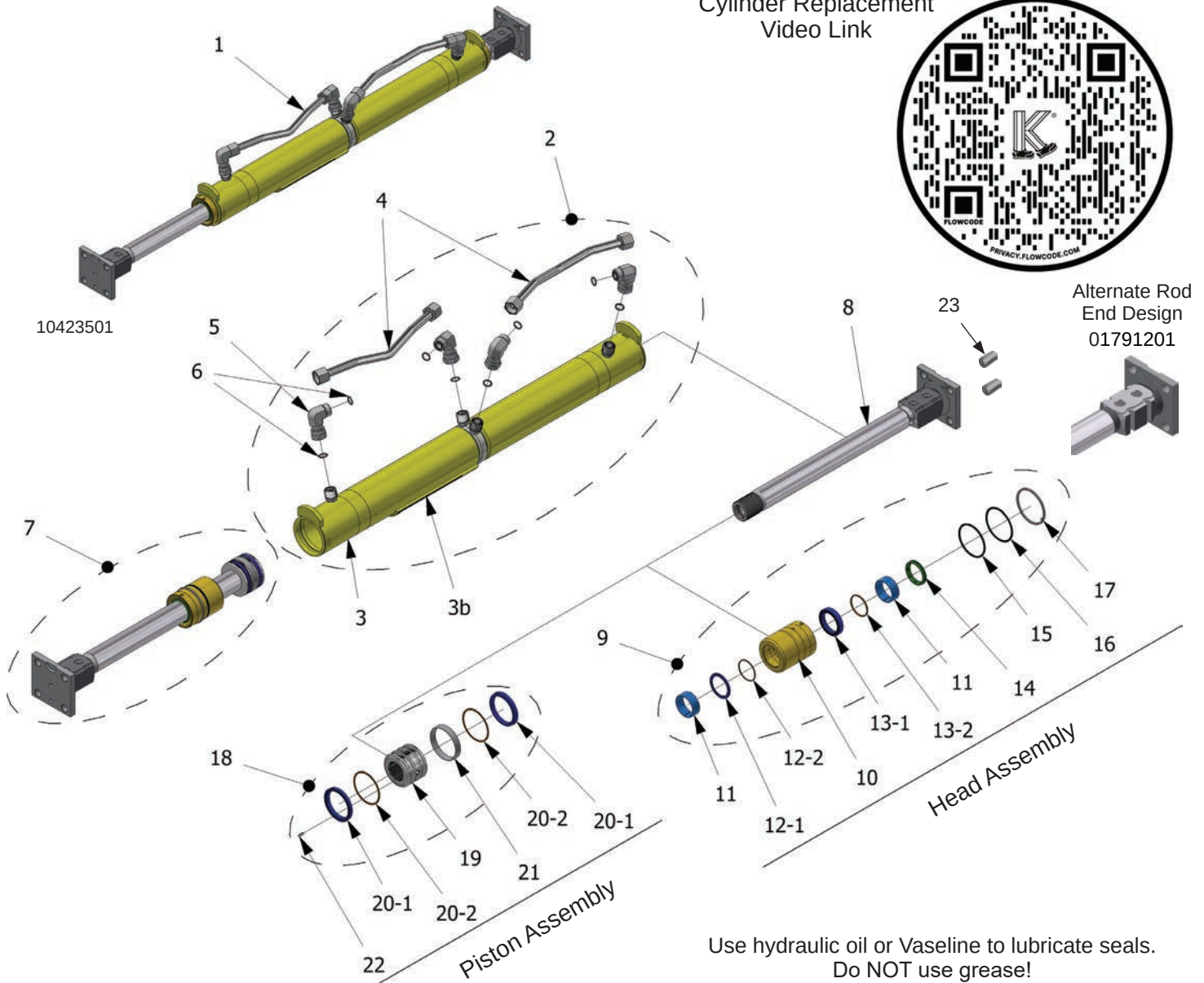


	ID #	Manual CV	Description
HYDRAULIC TUBES	E52	1	#E52 Tube - Control Valve to Front Cylinder 3
	53	1	#53 Tube - Control Valve to Rear Cylinder 1
	54	1	#54 Tube - Control Valve to Switching Valve Front CYL
	55	1	#55 Tube - Control Valve to Switching Valve Rear CYL
	56	1	#56 Tube - Front Check Valve 1 to Switching Valve Front CYL
	57	1	#57 Tube - Rear Check Valve 3 to Switching Valve Rear CYL
	58	1	#58 Tube - Switching Valve PUMP to Ball Valve
	59	1	#59 Tube - Switching Valve RES to Ball Valve
	61	2	#61 Tube - Check Valve to Check Valve
	62	2	#62 Tube - Check Valve 2 to Cylinder
FITTINGS	68	1	Sweep Elbow: 12 Male JIC - 12 Female JIC 45°
	69	1	Sweep Elbow: 16 Male JIC - 16 Female JIC 90°
	71	1	Elbow: 12 Male JIC - 16 Male ORB
	75	2	Sweep Elbow: 12 Male JIC - 12 Female JIC
	81	2	Run Tee: 12 Male JIC - 12 Female JIC- 12 Male JIC

Cylinder Assembly - ORFS Tubes (Jan 2020 - Present)

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

Cylinder Replacement
Video Link



Rod Assembly changed back
ORFS Cross-Over Tubes

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
Round Hole Style

Cylinder Assembly - ORFS Tubes (Jan 2020 - Present)

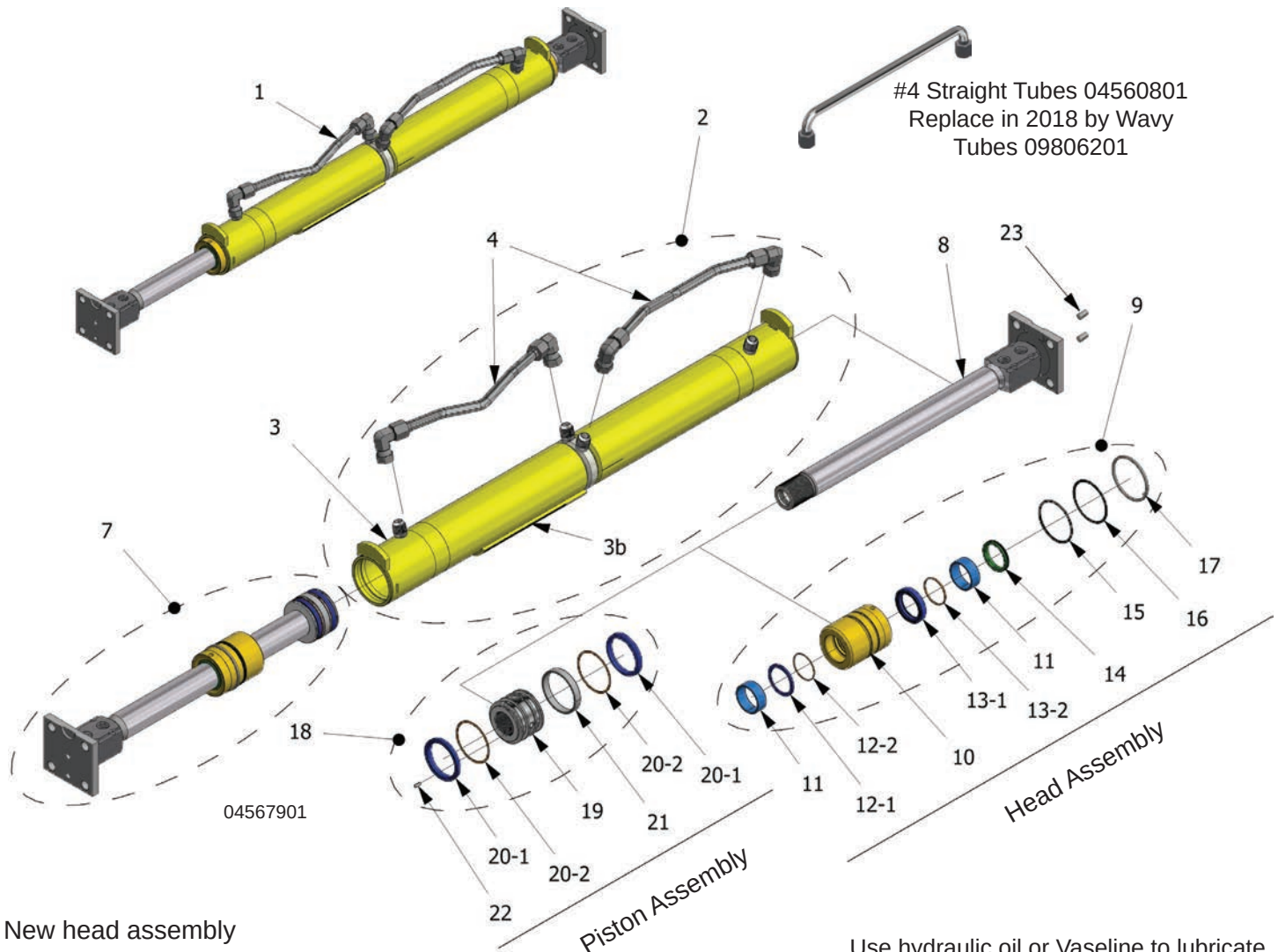
ID#	Qty	3.0" Part #	3.5" Part #	4.0" Part #	Description
1	(3)	10423501	10423601	10628601	Cylinder Assembly (Includes items 2-23)
2	(1)	10423301	10423401	10628501	Barrel Assembly - ORFS (Includes items 3-6)
3	1	10423101	10423201	10628401	Barrel Weld Assembly Cylinder (Includes item 3b)
3b	1	02552301	03027101	-	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	85766640			#10 Trap Seal Parker 10367 (interchangeable 84375272)
7	(2)	02553201	02553301	10053201	Rod w/Piston & Head Assemblies (Includes items 8-22)
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, 240) BUNA 90
16	1	84392400	84392800	84393200	O-Ring Backup (232, 236, 240) 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	4	86654310			Alignment Locating Dowel Pin 10 mm x 20 mm
-(2)	-	06528901	06529001	10172801	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 - 3.0" & 3.5" (2009 - Jan 2020)

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

Obsolete Design



New head assembly
(2) blue wear rings
Changed from straight to wavy
cross over tubes

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



Nose cone for
head installation



Piston Wrench



Spanner Wrench -
Round Hole Style

Cylinder Assembly - 3.0" & 3.5" (2009 - Jan 2020)

ID#	Qty	3.0" Part #	3.0" Diesel Part #	3.5" Part #	Description
1	(3)	04567901	04567903	04568001	Cylinder Assembly (Includes items 2-23)
2	(1)	04560901	04560901	04561001	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 - Wavy (Aug 2018-Present)
		04560801			Cross-Over Tube Assembly - Straight (Sept 2001-Aug 2018)
7	(2)	02553201	02553203	02553301	Rod W/Piston & Head Assembly (Includes items 8-22)
8	1	01791201			Rod 45 mm W/Block & Plate
9	(1)	03808501	03808503	03811001	Head Assembly (Includes items 10-17)
10	1	06372501	06372501	06375501	Head - Round Hole Style
11 ⁽¹⁾	2	84401205			PTFE Wear Ring Rod 45 mm (Blue)
12-1	1	84400201			Buffer Seal Rod 45 mm
12-2	1	w/seal			Buffer Seal Back-up Rod 45 mm
13-1	1	84354200			Seal Rod 45 mm
13-2	1	w/seal			Seal Backup Rod 45 mm
14	1	84426605			Wiper Rod 45 mm
15	1	84384200	84384210	84384600	O-Ring Buna 90 (232, 232 Viton, 236)
16	1	84392400	84392410	84392800	O-Ring Backup Buna 90 (8-232, 232 Viton, 8-236)
17	1	03812102		03812104	Lock Wire Square
18	(1)	03808101		03810901	Piston Assembly (Includes items 19-22)
19	1	02564801		02553601	Piston
20-1	2	84353600		84353800	Seal Piston
20-2	2	w/seal		w/seal	Seal Backup Piston
21	1	84404600		84404800	Wear Ring Piston
22	1	86650400			Pin Drive Lock 3/16" x 1/2"
23	4	86654310			Alignment Locating Dowel Pin 10 mm x 20 mm
-	-	-	-	-	Cylinder Seal Kits (Include items 11-17 & 20-22)
-(2)	-	06528901	-	-	Seal Kit 3.0" Rod 45 mm Metric (1993 - *Serial #0901022 1/05/2009)
-(2)	-	-	-	06529001	Seal Kit 3.5" Rod 45 mm Metric (1993 - *Serial #0901032 1/14/2009)
TOOLS					
-	-	03572201		03572202	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

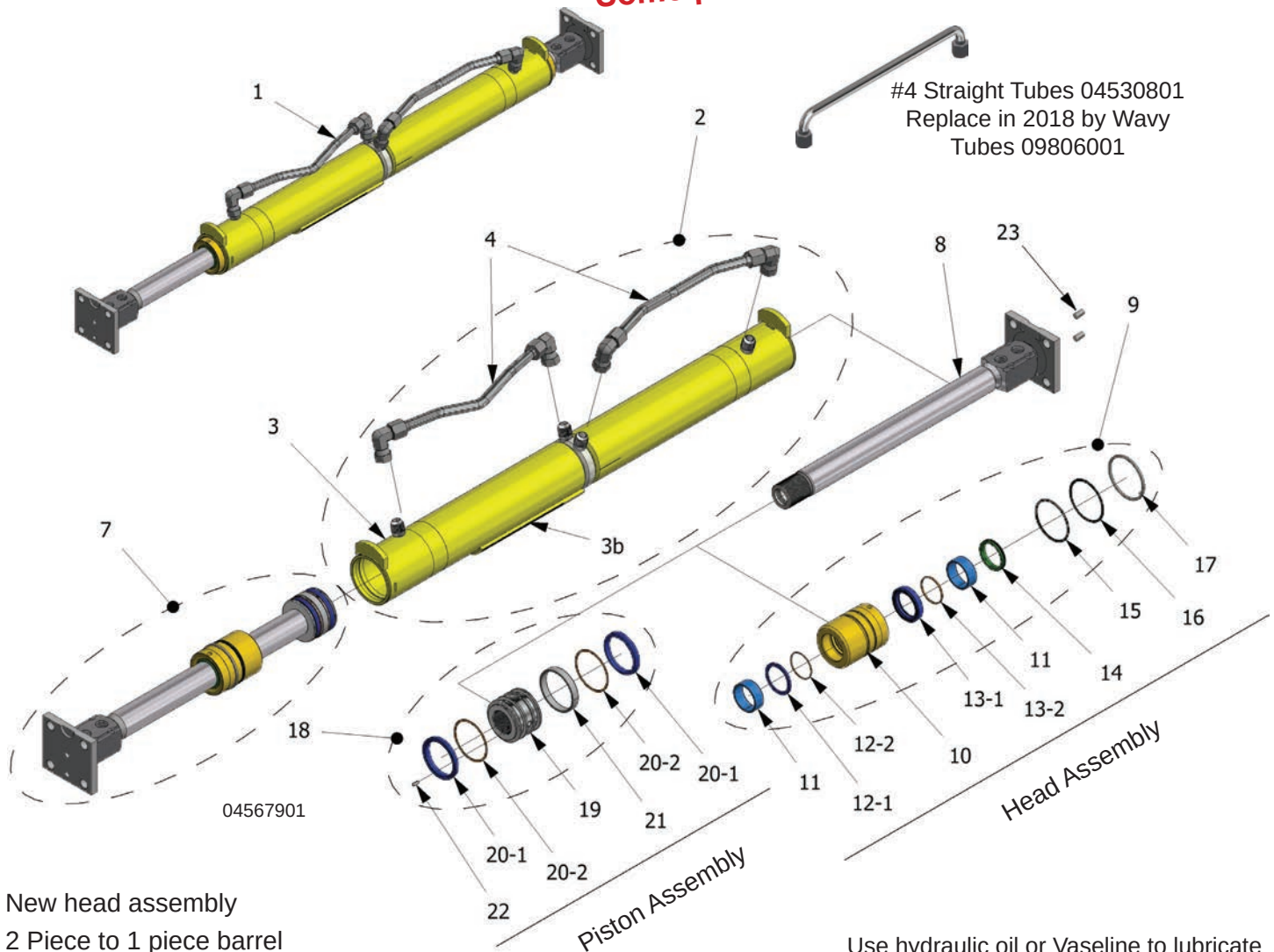
⁽¹⁾ Previous versions of the piston used (1) blue wear ring 84401205 and (1) gray wear ring 84401105 which has now been replaced with a second blue wear ring.

⁽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.

Cylinder Assembly - 4" (May 2008 - Jan 2020)

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

Obsolete Design
Some parts no longer available



New head assembly

2 Piece to 1 piece barrel

(2) blue wear rings

Changed from straight to wavy
cross over tubes

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



Nose cone for
head installation



Piston Wrench



Spanner Wrench -
Round Hole Style

Cylinder Assembly - 4" (May 2008 - Jan 2020)

ID#	Qty	5/08 - Part #	1/16 - Part #	11/17 - Part #	Description
-	(3)	06122901	06122902	09611801	Cylinder Assembly (Includes items 2-23) 02 w/Tab Jan '16
2	(1)	06123001	-	09612201	Barrel Assembly (Includes items 3-4)
3	1	06123101	-	-	Barrel Weld Assembly - No Actuator Tab
		-	06123102	-	Barrel Weld Assembly w/Tab Jan '16
		-	-	09612501	Barrel Weld Assembly - One Piece Barrel Nov '17
4	2	-	-	09806001	Cross-Over Tube Assembly - Wavy (Aug 2018-Present)
		04530801	-	-	Cross-Over Tube Assembly - Straight (Sept 2001-Aug 2018)
7	(2)	06321301	10053201		Rod W/Piston & Head Assembly (Includes items 8-22) July 2018
8	1	01791201	09612001		Rod 45 mm W/Block & Plate
9	(1)	06321201			Head Assembly (Includes items 10-17)
10	1	06811301			Head - Slotted Hole Style
11	2	84401205			Wear Ring Rod 45 mm
12-1	1	84400201			Buffer Seal Rod 45 mm
12-2	1	w/seal			Buffer Seal Back-up Rod 45 mm
13-1	1	84354200			Seal Rod 45 mm
13-2	1	w/seal			Seal Backup Rod 45 mm
14	1	84426605			Wiper Rod 45 mm
15	1	84385000			O-Ring Buna 90 (232, 236, 240)
16	1	84393200			O-Ring Backup Buna 90 (8-232, 8-236, 240)
17	1	03812106			Lock Wire Square
18	(1)	06321101			Piston Assembly (Includes items 19-22)
19	1	01334402			Piston
20-1	2	84352500			Seal Piston
20-2	2	w/seal			Seal Backup Piston
21	1	84405400			Wear Ring Piston
22	1	86650400			Pin Drive Lock 3/16" x 1/2"
23	4	86654310			Alignment Locating Dowel Pin 10 mm x 20 mm
-	-	-			Cylinder Seal Kits (Include items 11-17 & 20-22)
-(2)	-	04737101	10172801		Seal Kit 4.0" Rod 45 mm Metric (1993 - Present)

TOOLS

-	-	03572203		Barrel Pass Ring
-	-	04592701		Head Spanner Wrench - for Slotted Style Head (pre 2009)
-	-	04190201		Rod Nose Cone (45 mm = 1.772")
-	-	-		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.

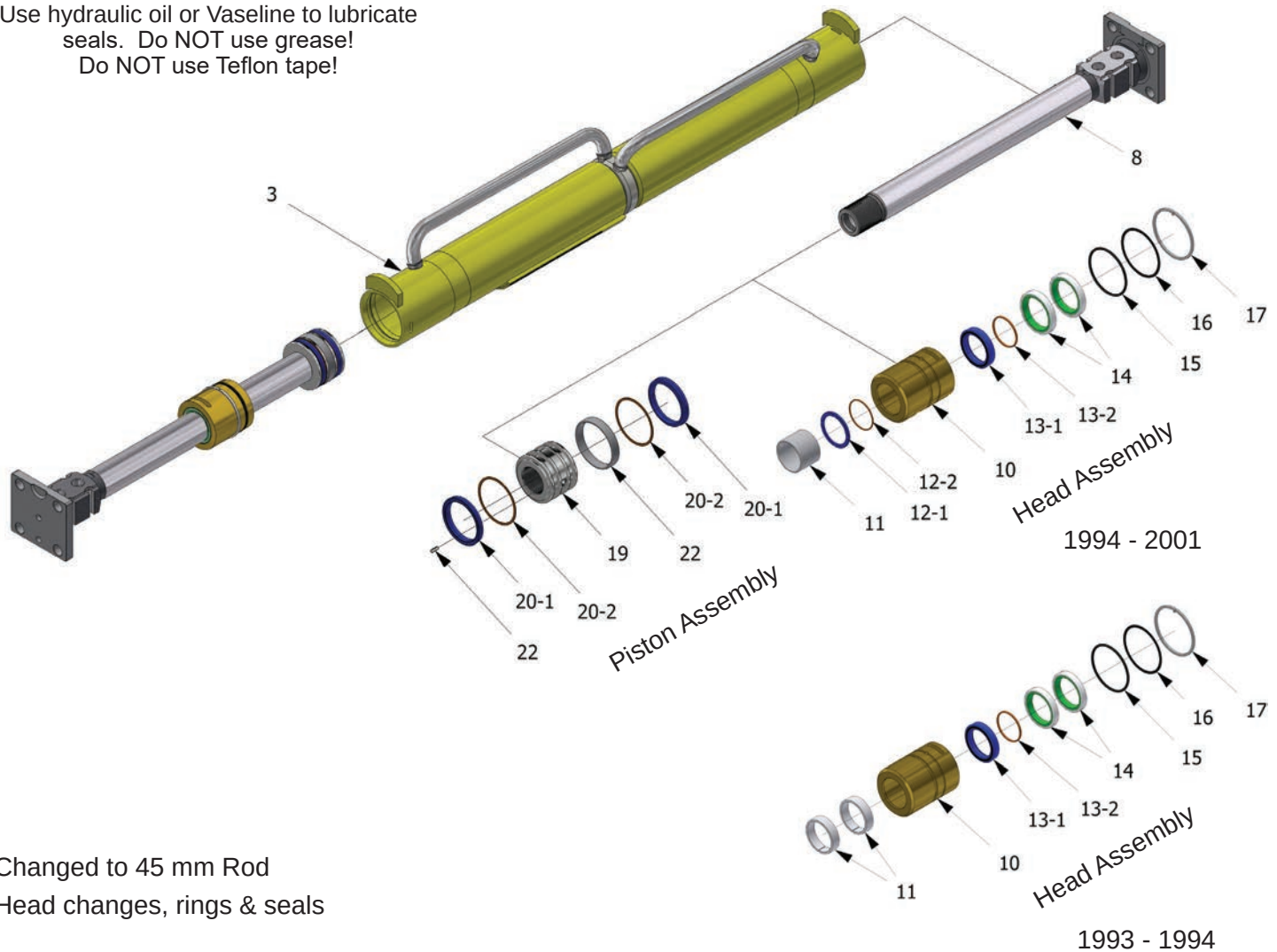
Obsolete Design
Some parts no longer available

Cylinder Assembly - 45 mm Rod & Welded Tubes (1993 - Sept 2001)

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

Obsolete Design
Some parts no longer available

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



Changed to 45 mm Rod
Head changes, rings & seals

TOOLS



Barrel Pass Ring
for removing piston
from barrel



Nose cone for
head installation



Piston Wrench



Spanner Wrench -
Slotted Hole Style

Cylinder Assembly - 45 mm Rod & Welded Tubes (1993 - Sept 2001)

ID#	Qty	3.0" Part #	3.5" Part #	4.0" Part #	Description
-	(3)	02553901	02553902	03808301	Cylinder Assembly Welded Tubes (Includes items 2-22)
3	(1)	02552901	02553001	03808201	Barrel Assembly (Includes items 3-4)
	1	02552301	03027101	03416901	Threaded Pad Weld On
	2	03423901		03812501	Cross-Over Tube Assembly - (straight, welded)
-	(2)	02553201	02553301	-	Rod W/Piston & Head Assembly (Includes items 8-22)
8	1	01791201			Rod 45 mm W/Block & Plate
10 ⁽¹⁾	1	01786201	02553501	03969301	Head - Slotted Hole Style
11 ⁽¹⁾	1	84401200			Wear Ring Rod 45 mm (1994-2009)
	2	84403400			Wear Ring Rod 45 mm (1993-1994)
12-1 ⁽¹⁾	1	84400201			Buffer Seal Rod 45 mm (1994-2009)
12-2 ⁽¹⁾	1	w/seal			Buffer Seal Back-up Rod 45 mm (1994-2009)
13-1	1	84354200			Seal Rod 45 mm
13-2	1	w/seal			Seal Backup Rod 45 mm
14	1	84426600			Wiper Rod 45 mm canned
15	1	84384200	84384600	84385000	O-Ring Buna 90 (232, 236, 240)
16	1	84392400	84392800	84393200	O-Ring Backup Buna 90 (8-232, 8-236, 240)
17	1	03812102	03812104	03812106	Lock Wire Square
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"
-	-	-	-	-	Cylinder Seal Kits (Include items 11-17 & 20-22)
.. ⁽²⁾	-	03877501	-	-	Seal Kit 3.0" Rod 45 mm Metric (1993 - *Serial #0901022 1/05/2009)
.. ⁽²⁾	-	-	03877601	-	Seal Kit 3.5" Rod 45 mm Metric (1993 - *Serial #0901032 1/14/2009)
.. ⁽²⁾	-	-	-	04737101	Seal Kit 4.0" Rod 45 mm Metric (1993 - 2009)
TOOLS					
-	-	03572201	03572202	03572203	Barrel Pass Ring
-	-	04592701			Head Spanner Wrench - for Slotted Style Head (pre 2009)
-	-	04190201			Rod Nose Cone (45 mm = 1.772")
-	-	06354201	05808301	-	Piston Wrench

⁽¹⁾ Internal rings and seals differ due to design change.

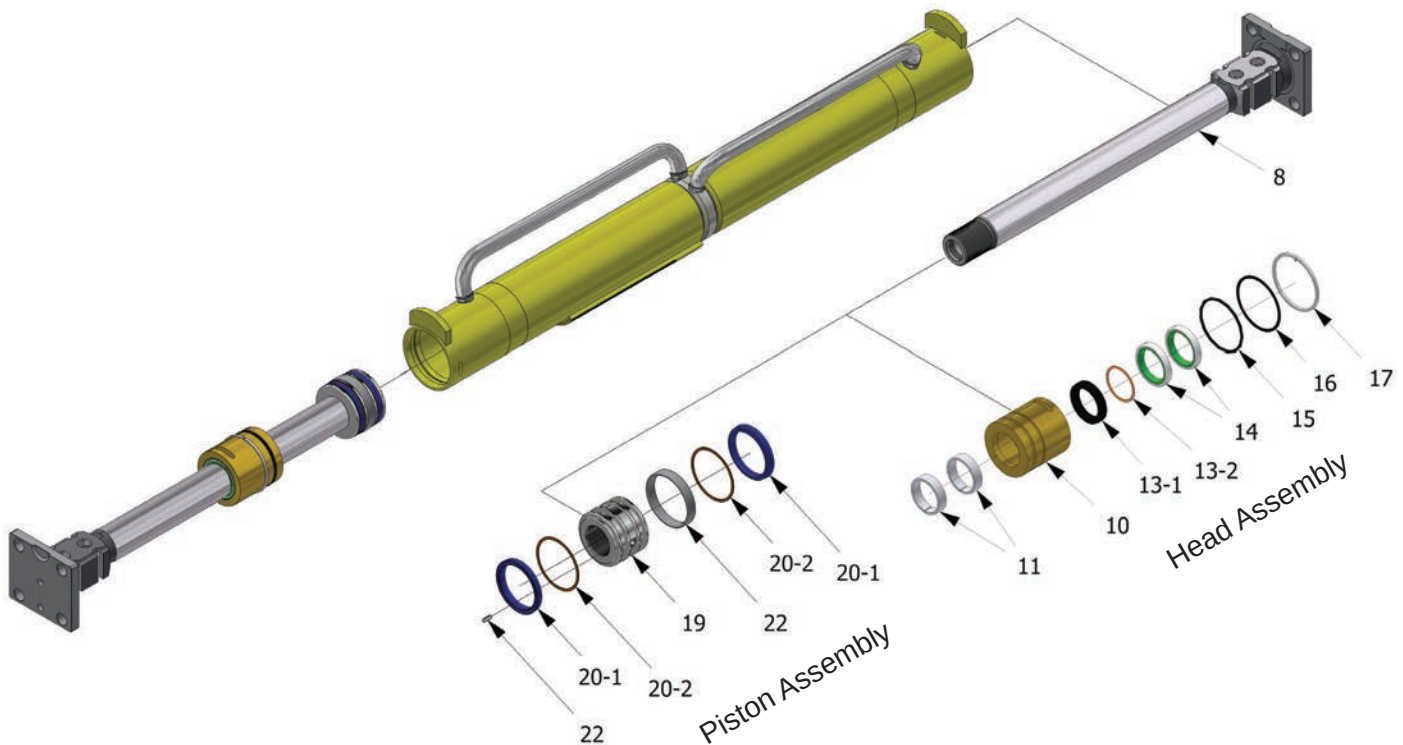
⁽²⁾ Seal kit includes all necessary items required to rebuild the entire cylinder. It does not include items such as the Barrel, Tubes & Fittings, Rod, Head or Piston.

Obsolete Design
Some parts no longer available

Cylinder Assembly - SAE Rod 1.727" (1985 - Dec 1993)

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

Obsolete Design
Some parts no longer available



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



Nose cone for
head installation



Piston Wrench



Spanner Wrench -
Slotted Hole Style

Cylinder Assembly - SAE Rod 1.727" (1985 - Dec 1993)

ID#	Qty	3.0" Part #	3.5" Part #	Description
8	(2)	01789801		Rod 1.727" Dia w/Block & Plate Obsolete
10	1	01270401	01270501	Head - Slotted Hole Style Obsolete
11	2	84403400		Wear Ring W125-2000-500 for 1.727" Rod Dia
13-1	1	84353400		Seal Rod P-25001750-375 1-3/4X2-1/4X3/8
13-2	1	w/seal		Seal Backup Rod
14	1	84426400		Wiper Rod J1725 SAE Canned
15	1	84384200	84384600	O-Ring Buna 90 (232, 236)
16	1	84392400	84392800	O-Ring Backup Buna 90 (8-232, 8-236)
17	1	03812102	03812104	Lock Wire Square
19	1	01325701	01337401	Piston
20-1	2	84353600	84353800	Seal Piston
20-2	2	w/seal	w/seal	Seal Backup Piston
21	1	84404600	84404800	Wear Ring Piston
22	1	86650400		Pin Drive Lock 3/16" x 1/2"
-	-	-	-	Cylinder Seal Kits (Include items 11-17 & 20-22)
..(2)	-	03877502	-	Seal Kit 3.0" 1.727" Rod SAE (1985 - 1993)
..(2)	-	-	03877602	Seal Kit 3.5" 1.727" Rod SAE (1985 - 1993)

Obsolete Design
Some parts no longer available

TOOLS

-	-	03572201	03572202	Barrel Pass Ring
-	-	04592701		Head Spanner Wrench - for Slotted Style Head (pre 2009)
-	-	03528001		Rod Nose Cone SAE 1.727"
-	-	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.

Check Valve Assembly (Jan 1998 - Present)



Check Valve
Replacement
Video Link

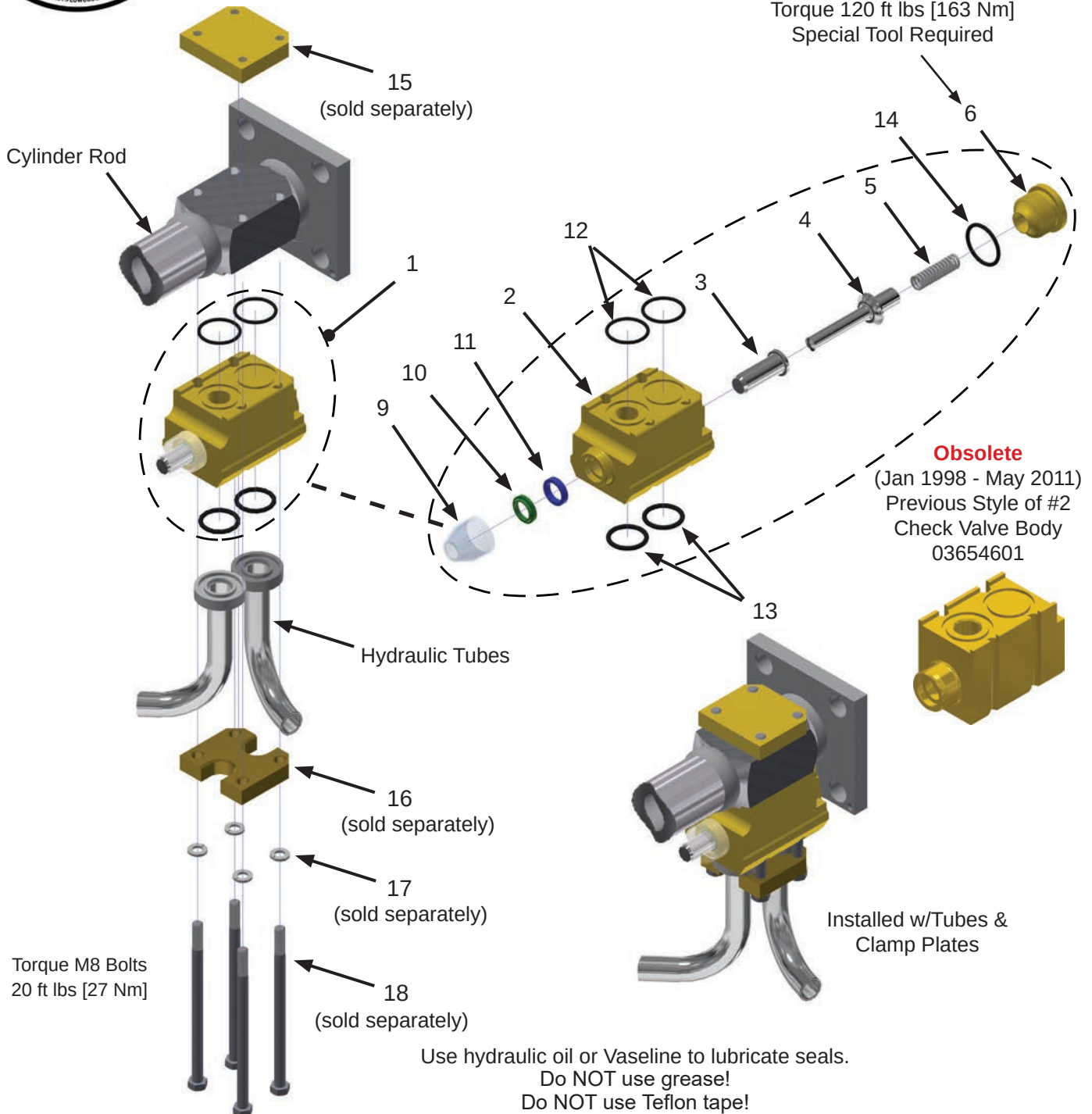
Stob Adapters

03054101 -12 JIC

03673201 -16 JIC x -12 O-ring



Torque 120 ft lbs [163 Nm]
Special Tool Required



Obsolete

(Jan 1998 - May 2011)
Previous Style of #2
Check Valve Body
03654601

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

Check Valve Assembly (Jan 1998 - Present)

ID#	Qty	Part #	Description
1	(4)	03709401	External Check Valve Assembly (Includes items 2-6, 9-14)
2	1	07283201	Body Check Valve AL 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	122 O-Ring Buna 90
13	2	84381600	214 O-Ring Buna 90
14	1	84387800	916 O-Ring Buna 90

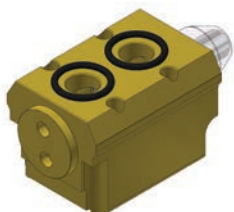
Check Valve Related Components

ID#	Qty	Standard Part #	Metric Part #	Description
15	1	02513001	02513002	Top Clamp Check Valve External
16	1	02513101		Lower Clamp Check Valve External
17	4	86553000		Washer Lock 5/16" Zinc
18	4	86434500	87007550	Bolt Socket 5/16" x 5-1/2" or M8 x 140mm (with Check Valve)
	4	86431000	87006451	Bolt Hex ZN (5/16"-18 X 3-1/4", 8mmX90mm) (Without Check Valve)

Tools

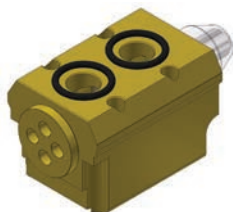
ID#	Qty	Part #	Description
-	-	08248301	Check Valve 4 Prong Raised End Cap Tool (Nov '13 - Present)
-	-	08248201	Check Valve 2 Prong Raised End Cap Tool (Jan '98 - Nov '13)
-	-	09031801	Check Valve 2 Prong Flush End Cap Tool (Dec '93 - Jan '98)

03709401
(Jan '98 - Nov '13)



2 Hole
Raised Cap

03709401
(Nov '13 - Present)



4 Hole
Raised Cap

29



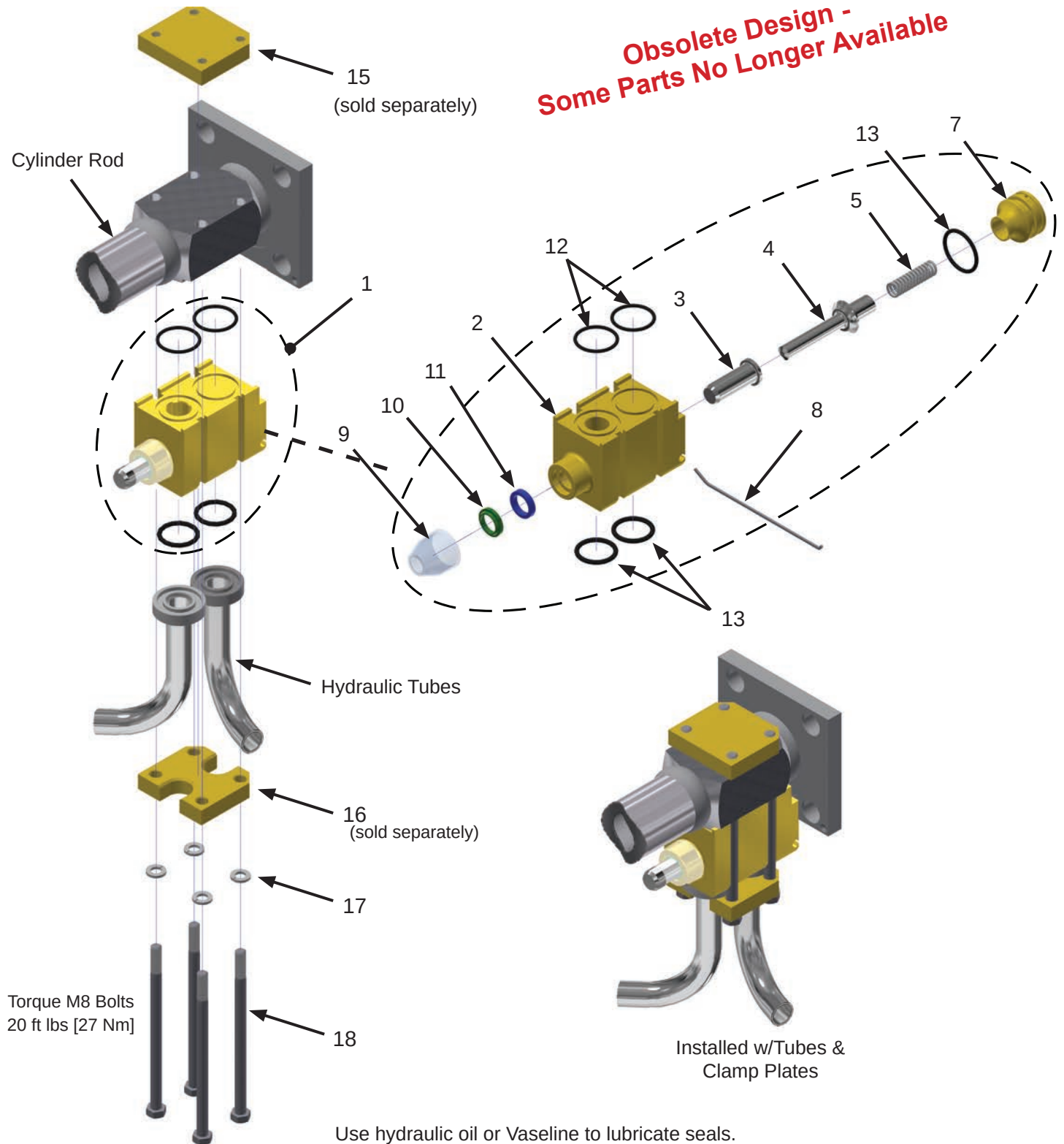
2 Prong
Raised Cap



4 Prong
Raised Cap

Check Valve Assembly (Dec 1993 - Jan 1998)

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



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

Check Valve Assembly (Dec 1993 - Jan 1998)

ID#	Qty	Part #	Description
1	(4)	02551601	External Check Valve Assembly (Includes items 2-5 & 7-13)
2	1	01248601	Body Check Valve AL 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
7	1	01268501	End Cap Check Valve External
8	1	03889301	Lock Wire .093 DIA x 4-5/8" LG 303 SS
-	-	03878101	External Check Valve Seal Kit (Includes items 9-13)
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	122 O-Ring Buna 90
13	3	84381600	214 O-Ring Buna 90

Obsolete Design -
Some Parts No Longer Available

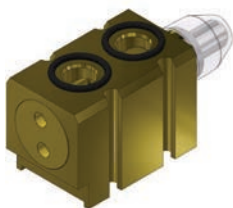
Check Valve Related Components

ID#	Qty	SAE Part #	Metric Part #	Description
15	1	02513001	02513002	Top Clamp Check Valve External
16	1	02513101		Lower Clamp Check Valve External
17	4	86553000		Washer Lock 5/16" Zinc
18	4	86434500	87007550	Bolt Socket 5/16" x 5-1/2" or M8 x 140mm (with Check Valve)
	4	86431000	87006451	Bolt Hex ZN (5/16"-18 X 3-1/4", 8mmX90mm) (Without Check Valve)

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)
-	-	09031801	Check Valve 2 Prong Flush End Cap Tool (Dec '93 - Jan '98)

02551601 **Obsolete**
(Dec '93 - Jan '98)

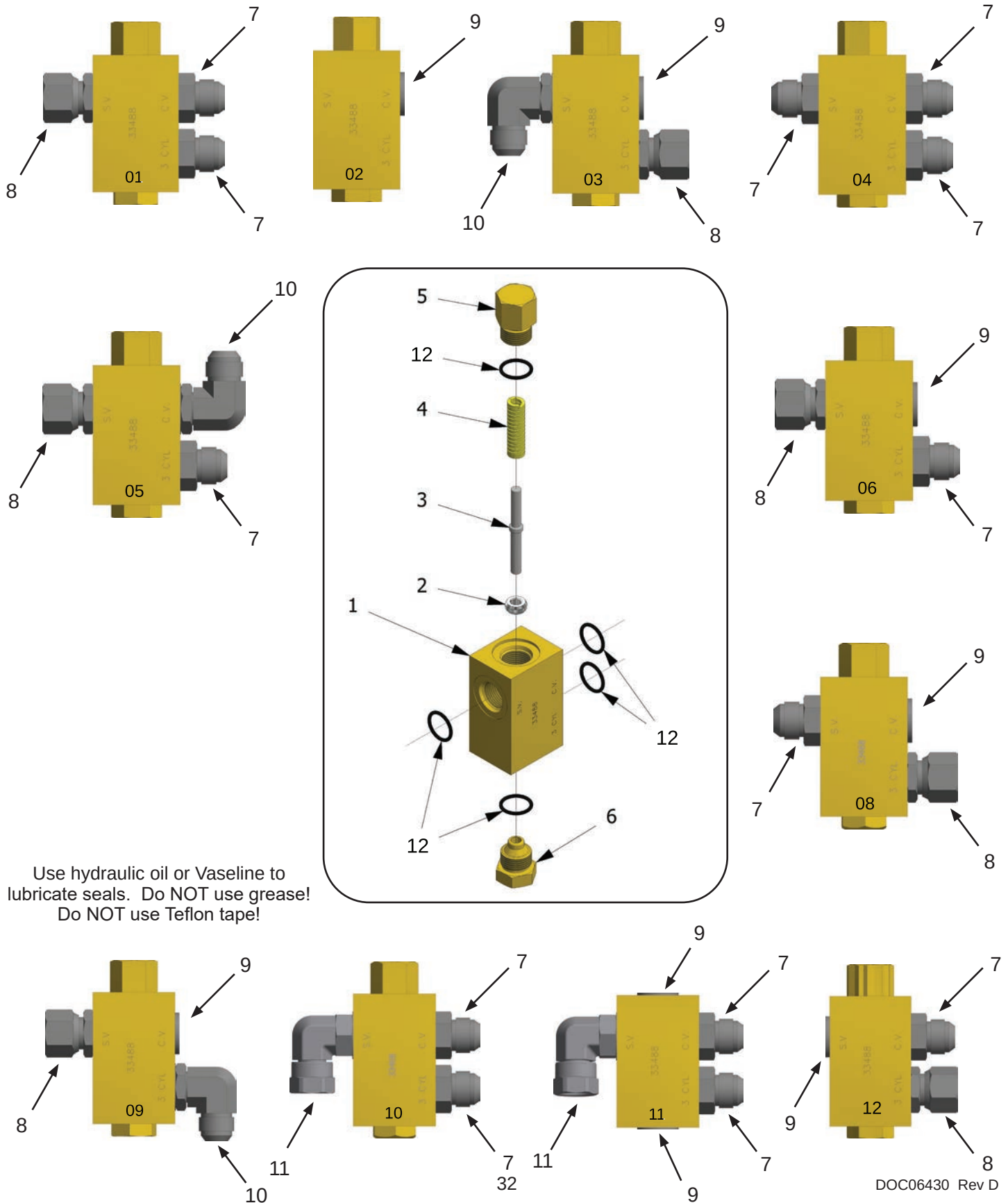


2 Hole
Flush Cap



2 Prong
Flush Cap

One-Way Restrictor Valve Assembly



Restrictor Valve Assembly

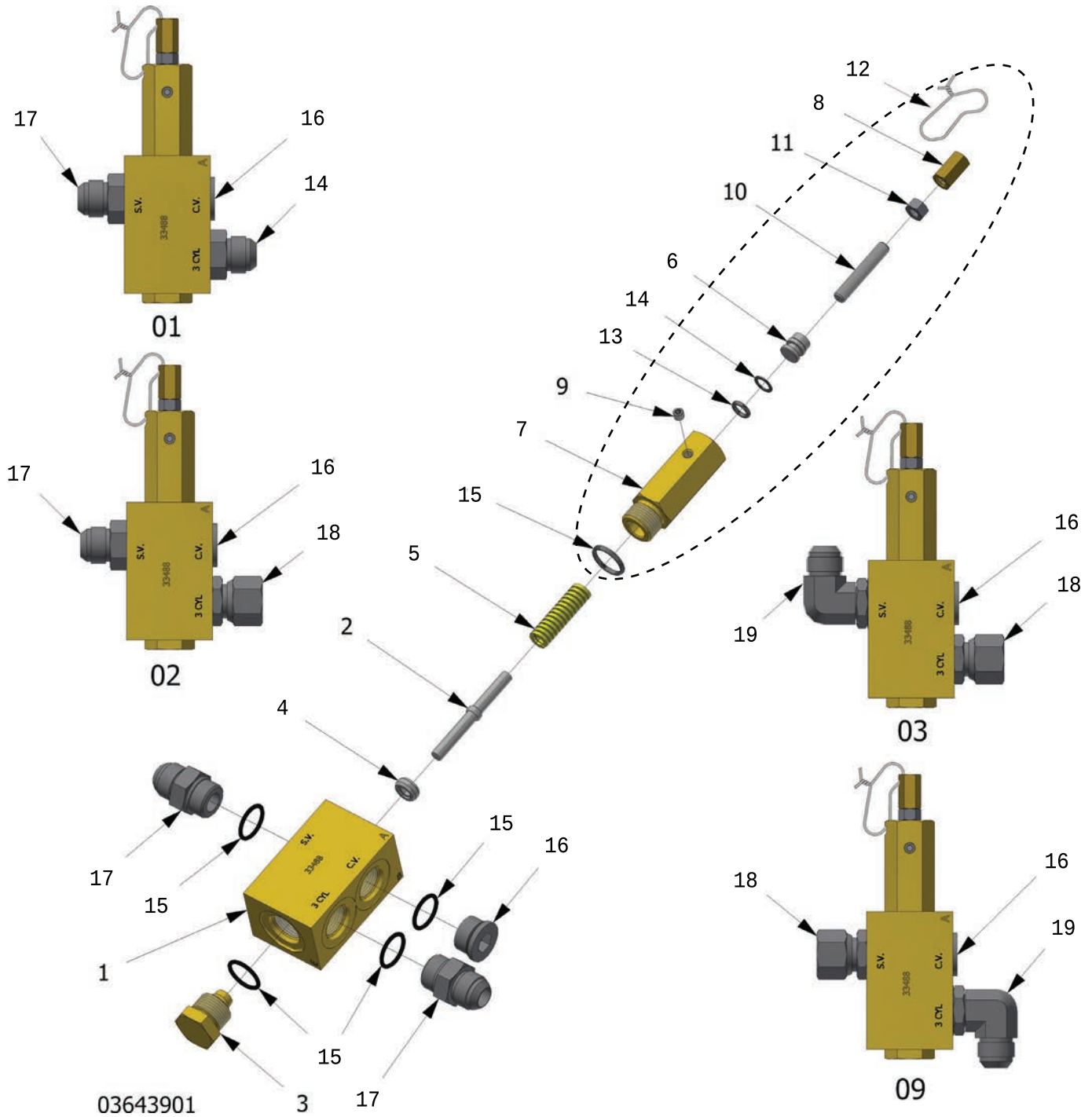
ID#	Quantities											Part #	Description	
-	01	02	03	04	05	06	08	09	10	11	12	033487xx	One-Way Restrictor Valve Assembly (Includes all items listed below)	
1	1	1	1	1	1	1	1	1	1	1	1	03348801	Restrictor Valve Body KRFII	
2	1	1	1	1	1	1	1	1	1	-	1	01951901	Collar Restrictor Internal CKV KRFII/WFII 80&90MM 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	1	-	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	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)	
12	5	3	5	5	5	5	5	5	5	5	5	84387400	O-Ring 912 Buna 90	
-	-	-	-	-	-	-	-	-	-	-	-	06832201	Restrictor Valve Seal Kit for (Includes item 12)	

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!

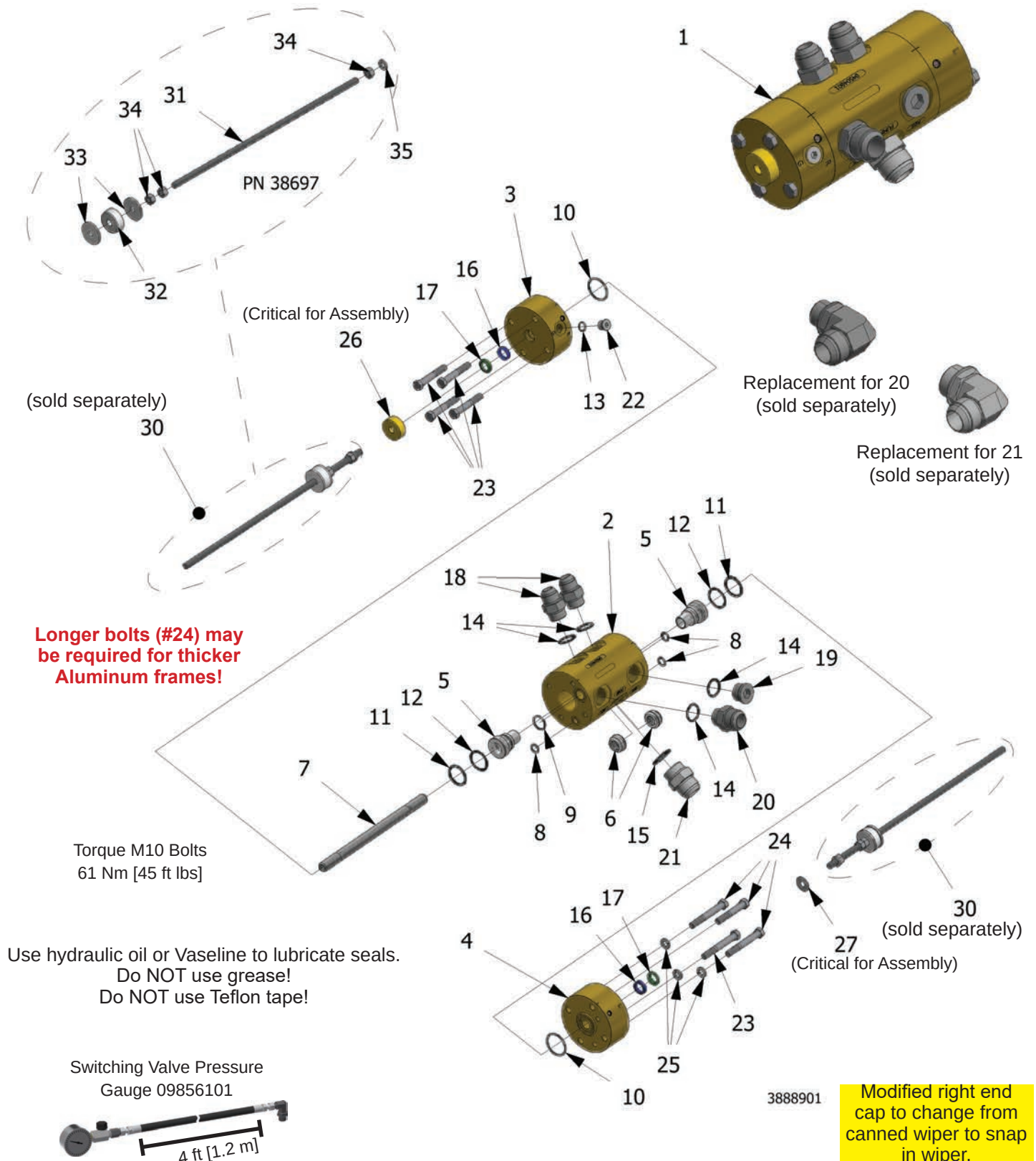
Adjustable Restrictor Valve Assembly

ID#	Qty	Qty	Qty	Qty	Part #	Description
-	01	02	03	09	036439xx	Adjustable Restrictor Valve Assembly (Includes items 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	03436901	RESTRICTOR SPOOL
5	1	1	1	1	84455400	DIE SPRING, RECT WIRE, YELLOW, DANLEY 9-1010-36
-	-	-	-	-	06995401	Adjustable Screw Assembly to Fit Restrictor Valve (Includes 6-15)
6	1	1	1	1	03434701	SPRING PLUNGER
7	1	1	1	1	03434801	SPRING CAP FOR ADJUSTMENT SCREW
8	1	1	1	1	03437601	NUT COVER BK KRFII FOR RESTRICTOR VALVE
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	80900300	SAFETY WIRE BAR RD SS WIRE .064
13	1	1	1	1	84376200	111 O-RING BUNA 90
14	1	1	1	1	84389000	111 BACK-UP RING BUNA
15	5	5	5	5	84387400	912 O-RING BUNA 90
16	1	1	1	1	84687700	12 HP5ON-S HOLLOW HEX PLUG M O-RING
17	2	1	-	-	84685000	12 F5OX-S STRAIGHT THREAD CONNECTOR MJIC X M O-Ring
18	-	1	1	1	84686100	12 F65OX-S STRAIGHT THREAD M O-RING X FJIC
19	-	-	1	1	84691500	12 C5OX-S STRAIGHT THREAD ELBOW MJIC X ADJ

Restrictor Adjustment Instructions

1. Remove the safety wire #12 that is through the holes in the spring cap #5 and the cover nut #8.
2. Remove the cover nut #8.
3. Loosen the jam nut #11.
4. Remove the pipe plug #9.
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 in to increase the pressure drop (flow restriction), turn the set screw out to decrease the pressure drop (flow restriction).
8. After adjusting lock the jam nut #11.
9. Re-install the pipe plug #9.
10. Re-install the cover nut #8.
11. Replace the safety wire #12.

Switching Valve Assembly (November 2014 - Present)



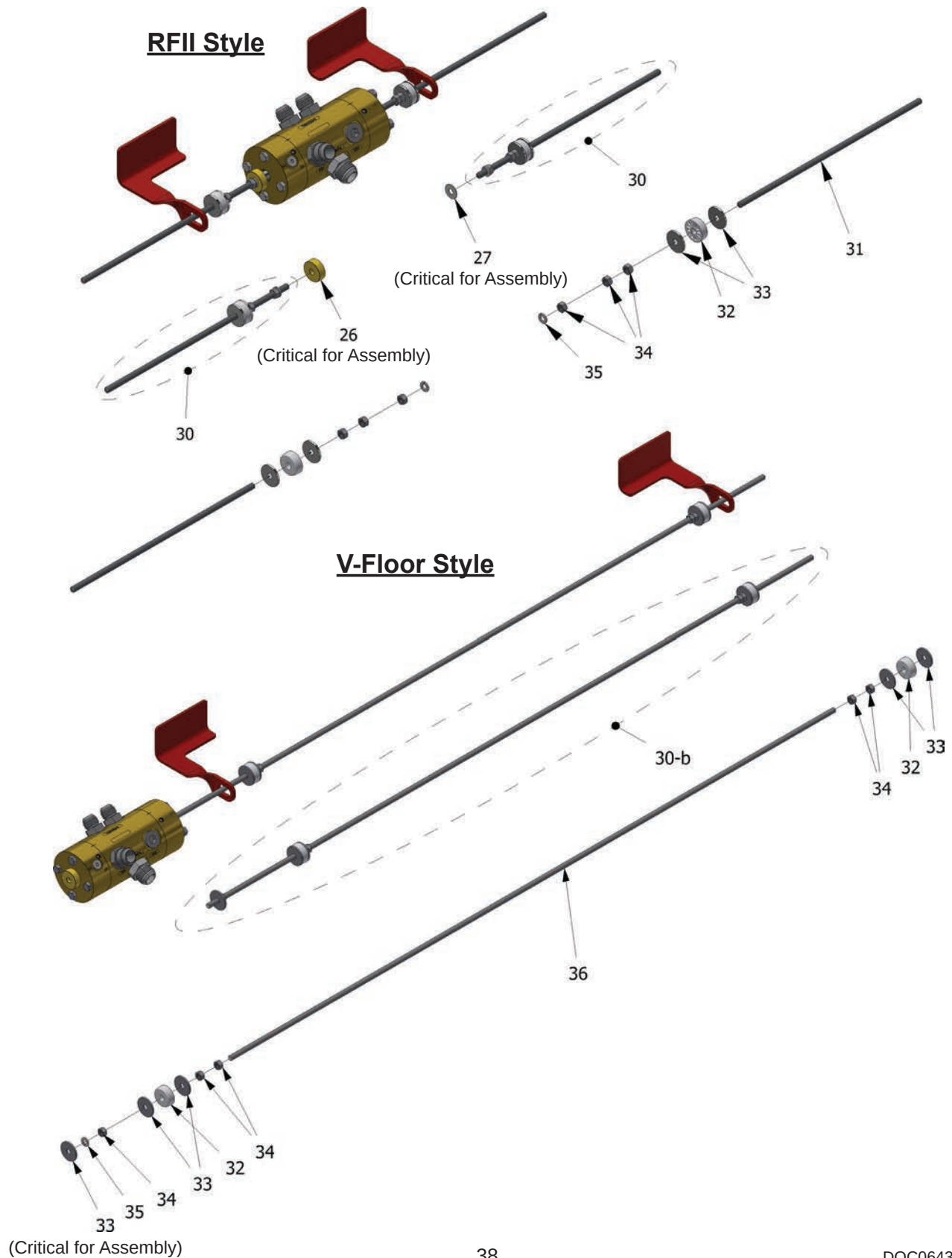
Switching Valve Assembly (November 2014 - Present)

ID#	Qty	Metric Part #	SAE Part #	Diesel SAE Part #	Description
1	(1)	03888902	03888901	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
-	-	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		84685300		6400-16-12 Straight Threaded
21	1		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)
-	-		84691700		6801-16-12 Straight Threaded Elbow (sold separately)
-	-		84691800		6801-16-16 Straight Threaded Elbow (sold separately)



Switching Valve
Replacement &
Adjustment Video Link

Threaded Rod Assembly



Threaded Rod Assembly - RFII Style

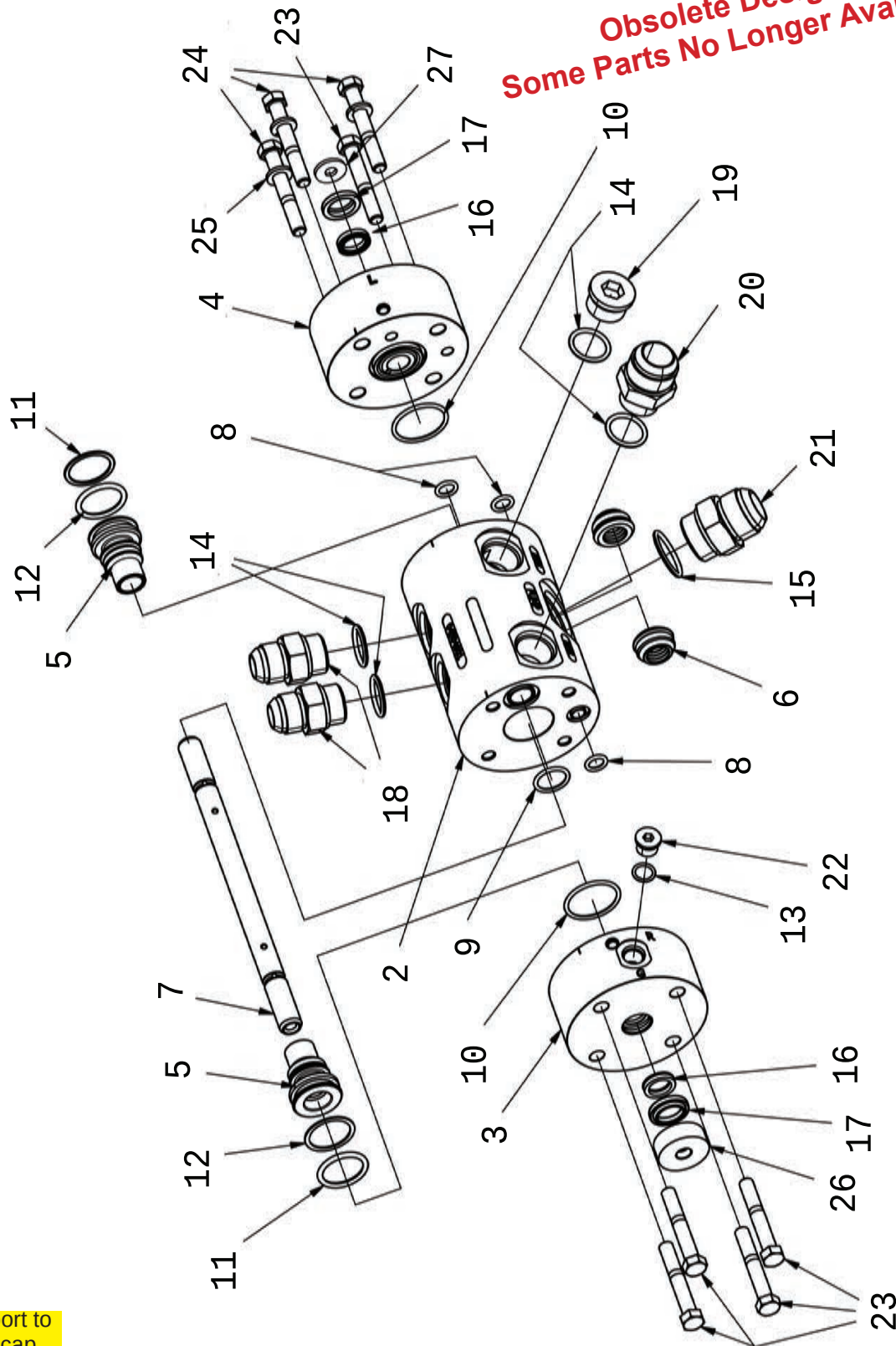
ID#	Qty	Metric Part #	SAE Part #	Description
30	(2)	03869702	03869701	Rod Threaded Assembly RFII (Includes Items 31-35)
31	1	10488401	10488301	Actuator Rod Threaded (M10-1.5 x 406mm , 3/8"-16x16")
32	1	83217500		Switching Valve Grommet
33	2	86553500		Washer Large OD 3/8"
34	3	87101500	86628500	Nut Hex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

Threaded Rod Assembly - V-Floor Style

ID#	Qty	Metric Part #	SAE Part #	Description
30-b	(1)	07332602	07332601	Rod Threaded Assembly V-Floor (Includes Items 32-36)
32	2	83217500		Switching Valve Grommet
33	5	86553500		Washer Large OD 3/8"
34	5	87101500	86628500	Nut Hex (M10 x 1.5, 3/8")
35	1	87076500	86555000	Washer Lock (M10, 3/8")
36	1	87151000	86603600	Actuator Rod Threaded (M10-1.5 x 200mm , 3/8"-16x72")

Switching Valve Assembly (April 2013 - November 2014)

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



Added -6 port to
right end cap

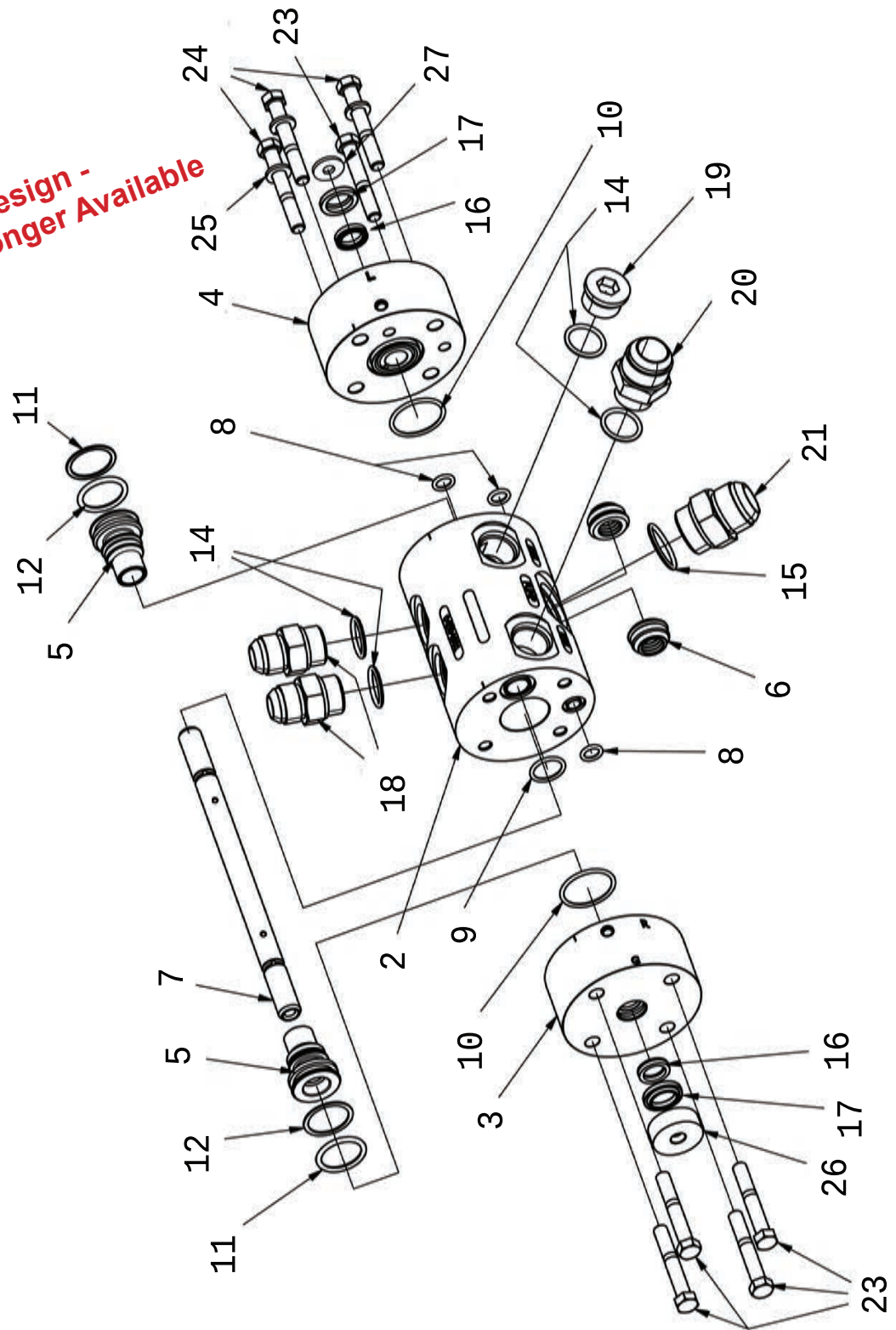
Switching Valve Assembly (April 2013 - November 2014)

ID#	Qty	Metric Part #	SAE Part #	Diesel SAE Part #	Description
-	(1)	03888902	03888901	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	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	84685300			6400-16-12 Straight Threaded
21	1	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)

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

Switching Valve Assembly (August 2008 - April 2013)

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



Removed filter,
seat & spring.

Switching Valve Assembly (August 2008 - April 2013)

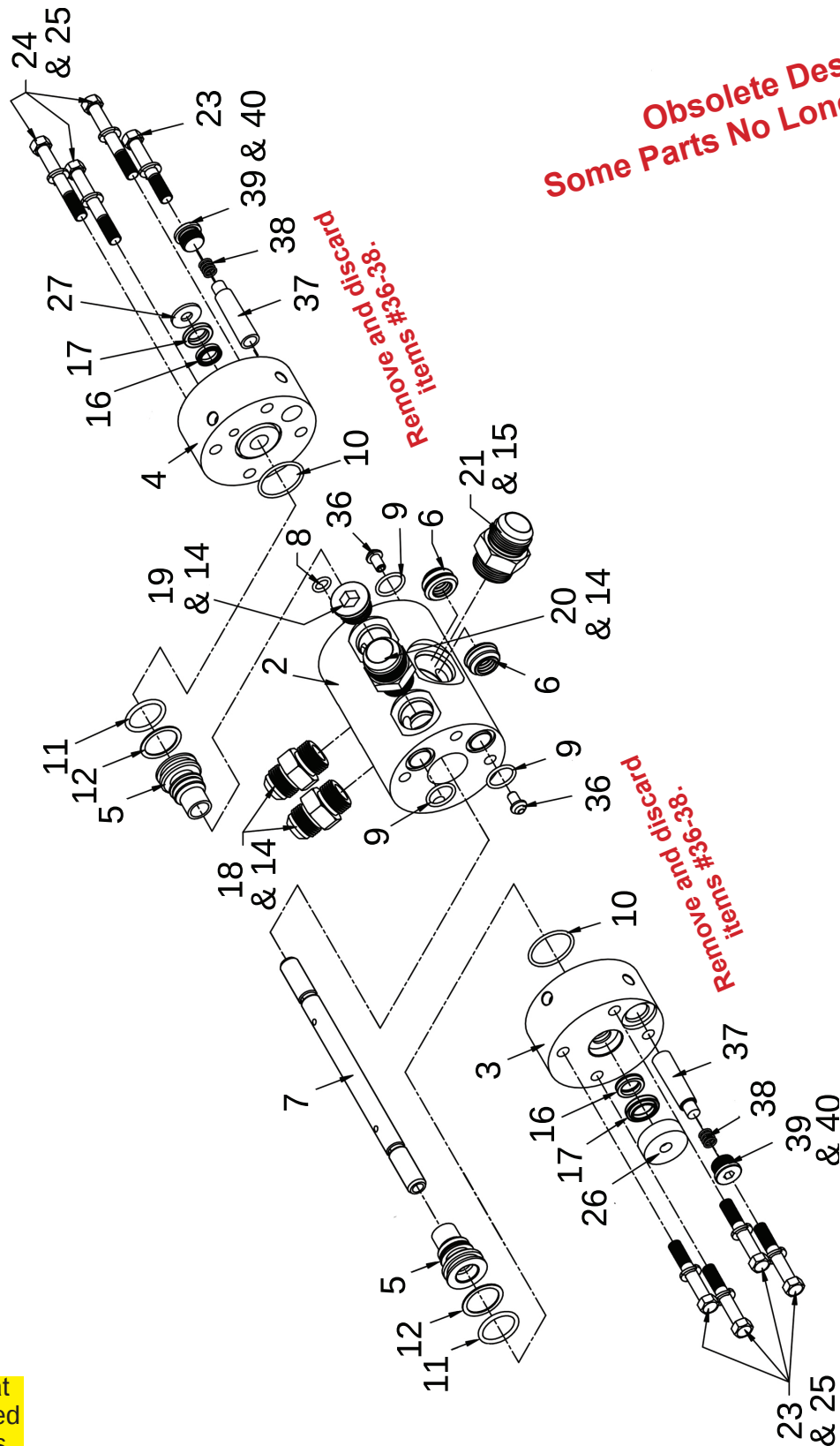
ID#	Qty	Metric Part #	SAE Part #	Diesel SAE Part #	Description
-	(1)	03888902	03888901	03888911	Switching Valve Assembly (Includes Items 2-27)
2	1	04504602	04504601		Body Switching Valve (not sold separately)
3	1		04504701		End Cap Right Switching Valve (not sold separately)
4	1		04504801		End Cap Left 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)
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	84685300			6400-16-12 Straight Threaded
21	1	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)

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

Obsolete Design -
Some Parts No Longer Available

Switching Valve Assembly (June 2002 - August 2008)

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

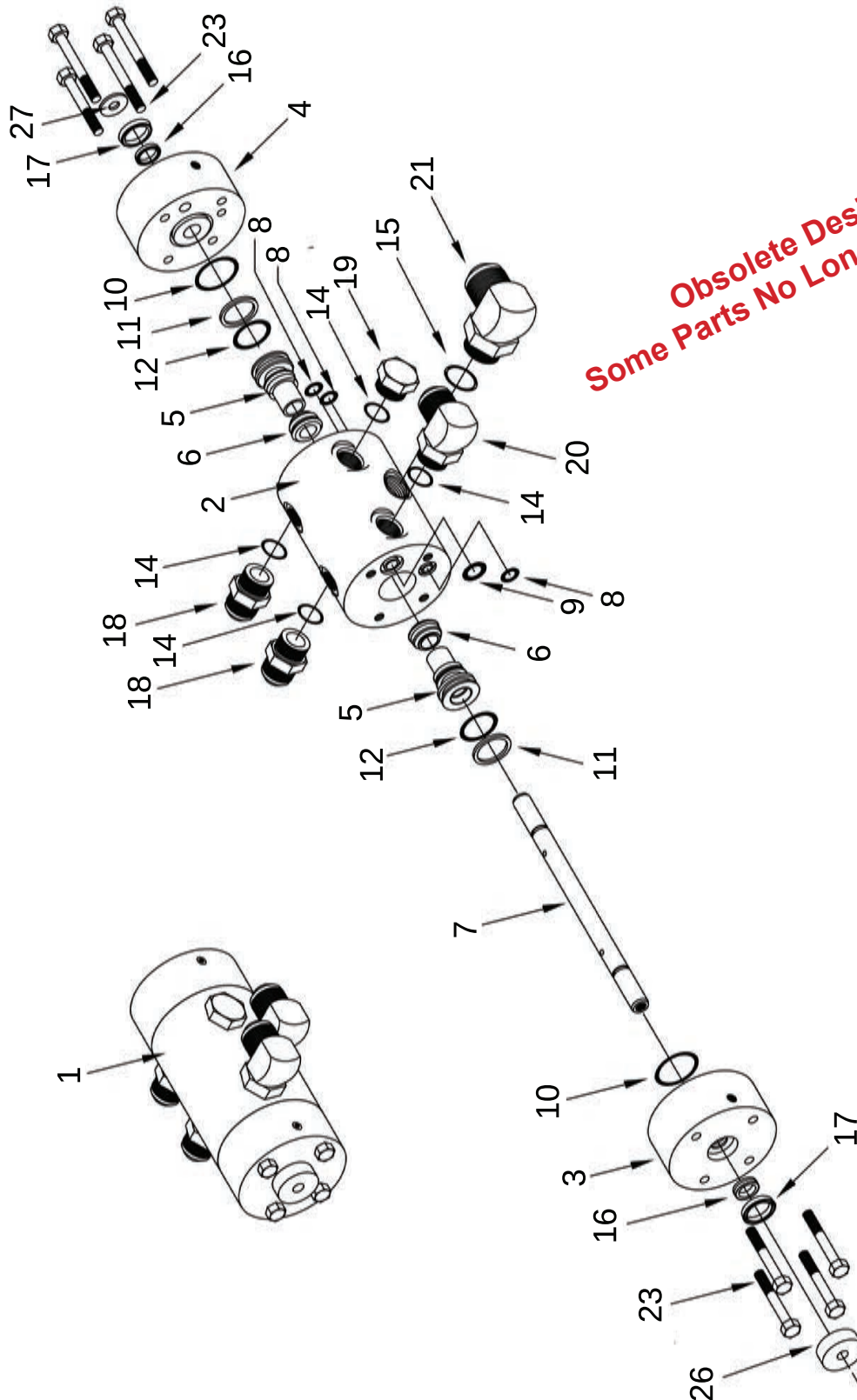


Added filter, seat
& spring. Changed
body & end caps.

Switching Valve Assembly (June 2002 - August 2008)

ID#	Qty	Metric Part #	SAE Part #	Diesel SAE Part #	Description
-	(1)	03888902	03888901	03888911	Switching Valve Assembly (Includes Items 2-27, 36-40)
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	1	84376200	84376201		O-Ring 111 (Buna 90, Viton)
9	3	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	84685300			6400-16-12 Straight Threaded
21	1	84685400			6400-16-16 Straight Threaded
23	8	87009000	86441000		Bolt Hex M10 x 65mm [GR5 3/8"x2 1/2"]
26	1	02552101			Cap Limit Switching Valve (Critical for Assembly)
27	1	86553500			Washer Large OD 3/8" (Critical for Assembly)
36	2	04502701			FILTER SEAT SWV PILOT100 (REMOVE & DISCARD)
37	2	84012700			FILTER ELEMENT CF0563-46 SWV (REMOVE & DISCARD)
38	2	84451750			SPRING S-157 (REMOVE & DISCARD)
39	2	84687500			08 HP50N-S Hollow Hex Plug M O-Ring Hex Socket (6408-H08-O)
40	2	84387000	84387010		O-Ring 908 (Buna 90, Viton)

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

Switching Valve Assembly (December 1998 - June 2002)

Switching Valve Assembly (December 1998 - June 2002)

ID#	Qty	Metric Part #	SAE Part #	Diesel SAE Part #	Description
2 ⁽²⁾	1	03888902	03888901	03888911	Switching Valve Assembly (Includes Items 2-27)
2 ⁽²⁾	1	03851502	03851501		Body Switching Valve (not sold separately)
3 ⁽²⁾	1		03851701		End Cap Right Switching Valve (not sold separately)
4 ⁽²⁾	1		03851601		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)
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	84686900			12 P5ON-S HEX HEAD PLUG M O-RING HEX CAP (6408-O-12)
20	1	84691700			16-12 C5OX-S Straight Thread Elbow MJIC (6801-16-12)
21	1	84691800			16 C5OX-S Straight Thread Elbow MJIC (6801-16-16)
23	8	87009000	86441000		Bolt Hex M10 x 65mm [GR5 3/8"x2 1/2"]
26	1	02552101			Cap Limit Switching Valve (Critical for Assembly)
27	1	86553500			Washer Large OD 3/8" (Critical for Assembly)

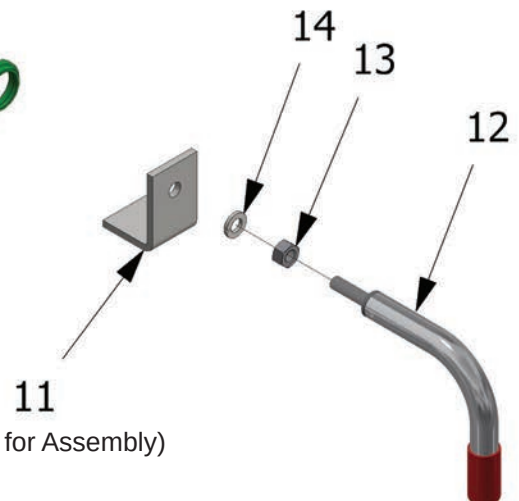
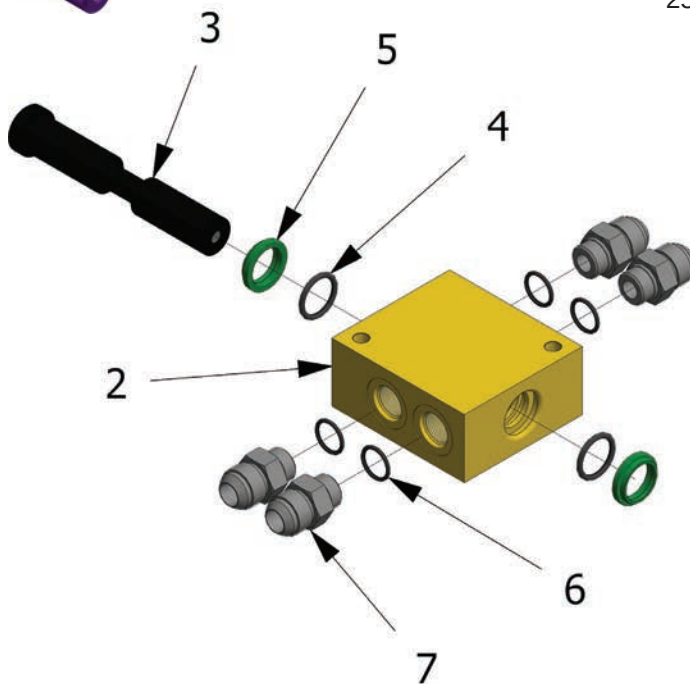
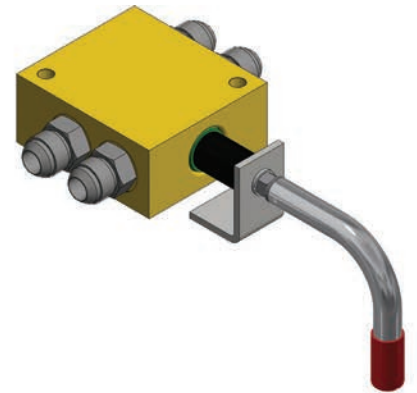
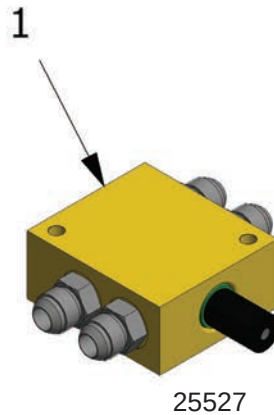
⁽²⁾ Part numbers vary for Switching Valves made before 1998.

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!

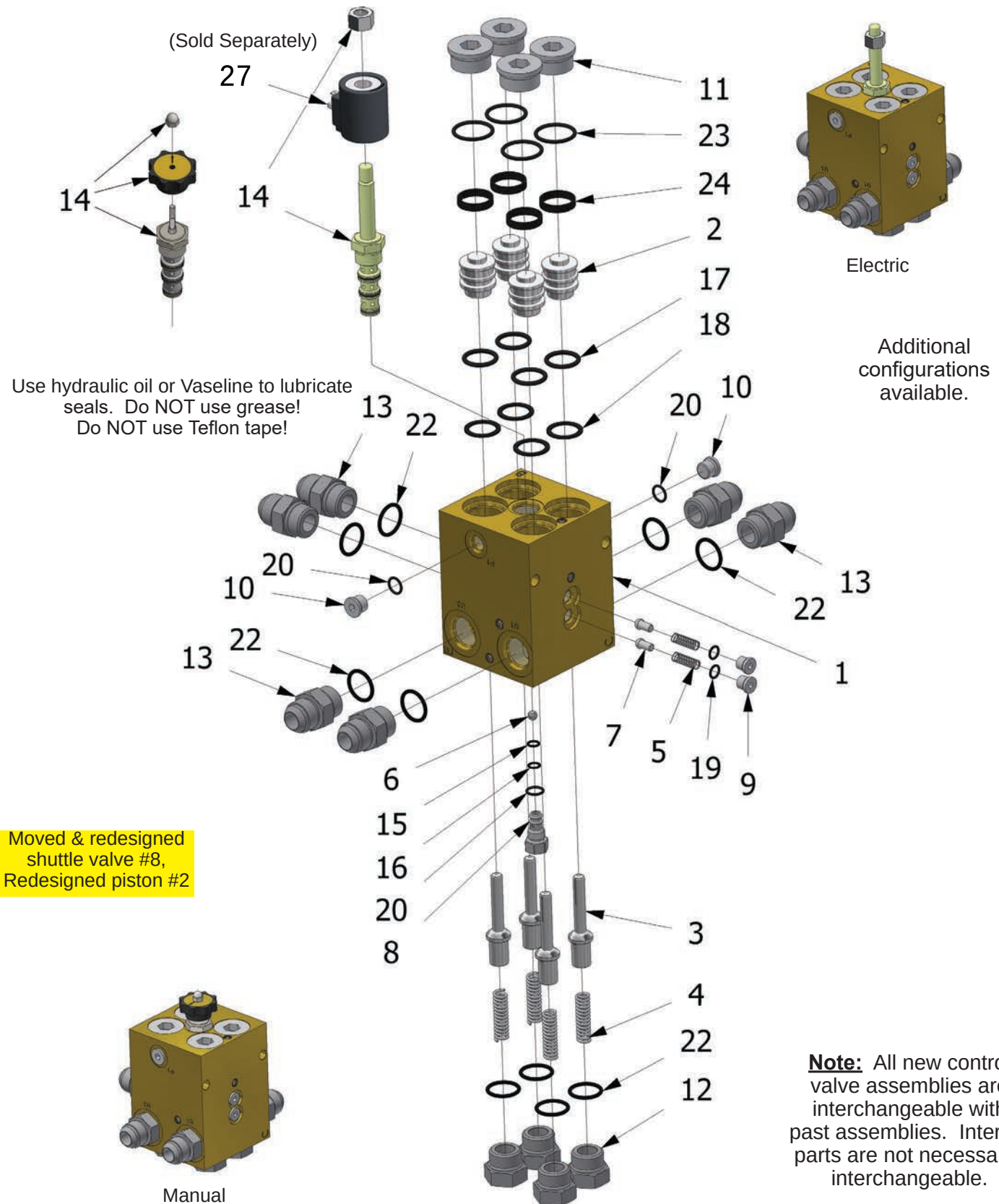
Control Valve Assembly

ID#	Qty	Metric Part #	SAE Part #	Diesel SAE Part #	Description
1	(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	03423201		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	(1)	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)

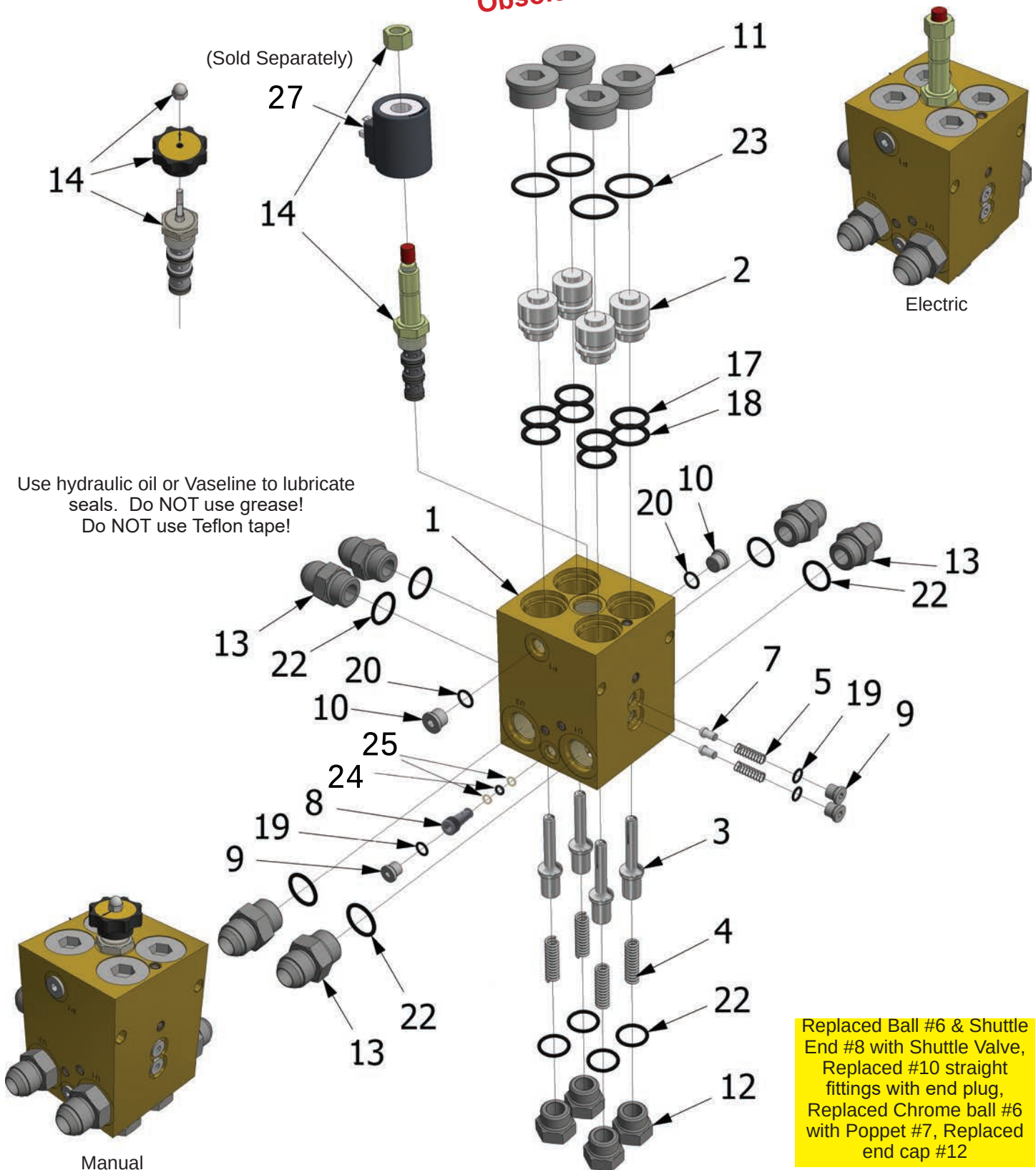


Control Valve (Load/Unload) Assembly - Electric/Manual (Jan 2022 - Present)

ID#	Qty	Electric Part #	Manual Part #	Description
-(⁽¹⁾)	((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
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
22	10	84387400		912 O-RING BUNA 90
23	4	84387800		916 O-RING BUNA 90
26	4	84405415		WEAR RING BRONZE PTFE 1/4 X 1/16
-	-	85108798		Seal Kit for Cartridge Valves (Includes (1) 910 O-Ring)
-	-	04661701		Seal Kit Control Valve Electric (Includes items 15-26 & 85108798)
27	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

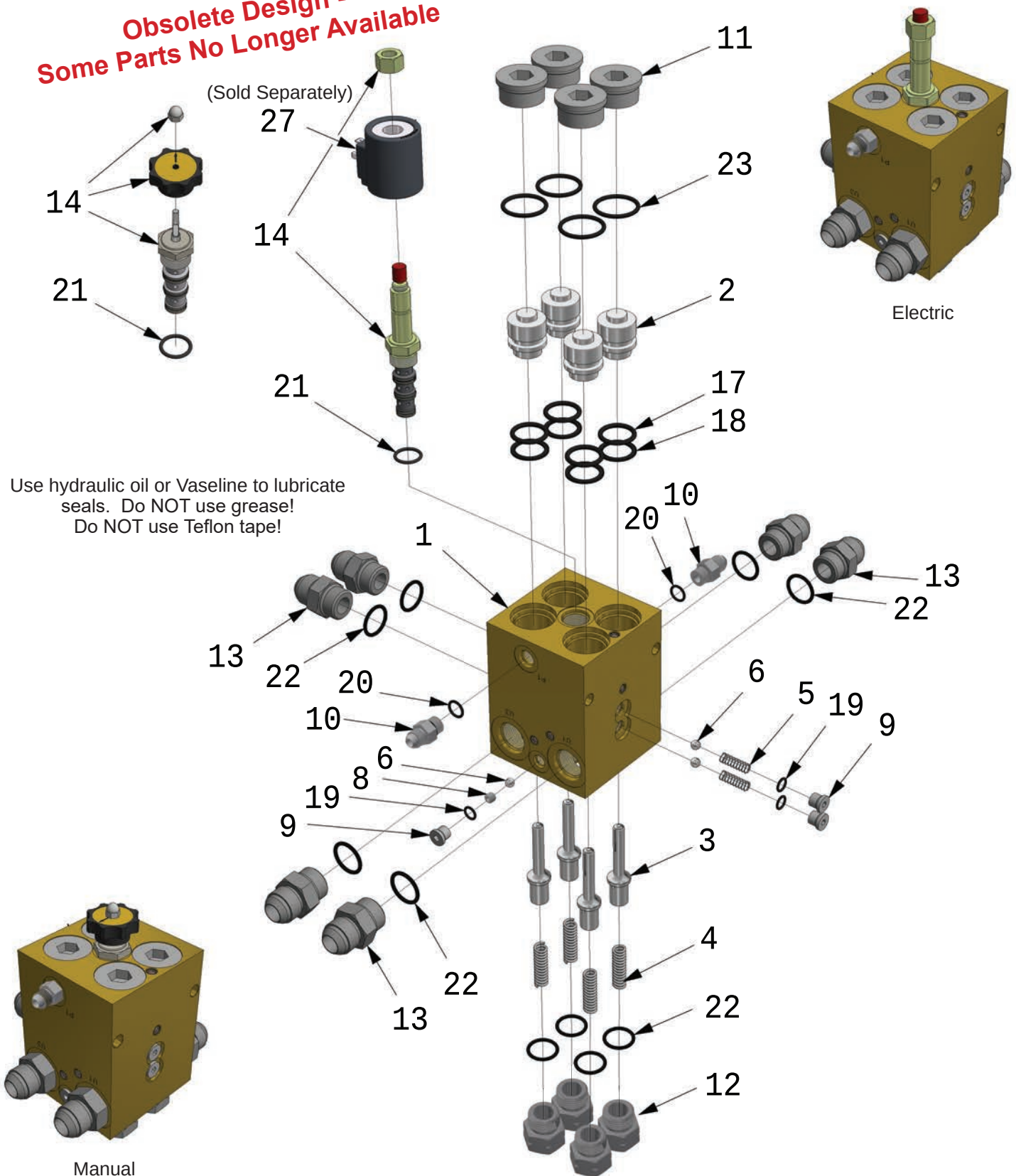
Control Valve (Load/Unload) Assembly - Electric/Manual (Mar 2000 - Jan 2022)

ID#	Qty	Electric Part #	Manual Part #	Description
-(1)	(1)	03244610	03244630	Control Valve (Load/Unload) Assembly (Includes items 1-23)
1	1	03134701		Electric Control Valve Body (not sold separately)
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
17	4	84381200		213 O-Ring Buna 90
18	4	84391200		8-213 O-Ring Back-Up Buna 90
19	3	84386600		904 O-Ring Buna 90
20	2	84386800		906 O-Ring Buna 90
22	10	84387400		912 O-Ring Buna 90
23	4	84387800		916 O-Ring Buna 90
24	1	84375170		007 O-Ring Buna 90
25	2	84388508		007 O-Ring Back-Up Nylon
-	-	85108798		Seal Kit for Cartridge Valves (Includes (1) 910 O-Ring)
-	-	04661701		Seal Kit Control Valve Electric (Includes items 17-25 & 85108798)
27	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 (May 1995 - Mar 2000)

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



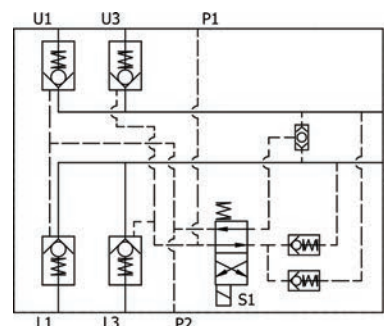
Control Valve (Load/Unload) Assembly - Electric/Manual (May 1995 - Mar 2000)

ID#	Qty	Electric Part #	Manual Part #	Description
-(¹)	(1)	03244610	03244630	Control Valve (Load/Unload) Assembly (Includes items 1-23)
1	1	03134701		Electric Control Valve Body (not sold separately)
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
6	3	84800500		5/16" Chrome Steel Ball
8	1	03122801		Shuttle Valve End
9	3	84687300		6409-04 MSAE O-Ring Socket Plug
10	2	84684000		6400-06-06 F5OX-S Straight Thread Connector MJIC X M O-RING
11	4	84687900		6409-16 MSAE O-Ring Socket Plug
12	4	03860201		END CAP CKV/6 PORT
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
17	4	84381200		213 O-Ring Buna 90
18	4	84391200		8-213 O-Ring Back-Up Buna 90
19	3	84386600		904 O-Ring Buna 90
20	2	84386800		906 O-Ring Buna 90
22	10	84387400		912 O-Ring Buna 90
23	4	84387800		916 O-Ring Buna 90
24	1	84375170		007 O-Ring Buna 90
25	2	84388508		007 O-Ring Back-Up Nylon
-	-	85108798		Seal Kit for Cartridge Valves (Includes (1) 910 O-Ring)
-	-	04661701		Seal Kit Control Valve Electric (Includes items 17-25 & 85108798)
26	1	varies	-	Coil (Sold Separately) Contact KEITH for Information

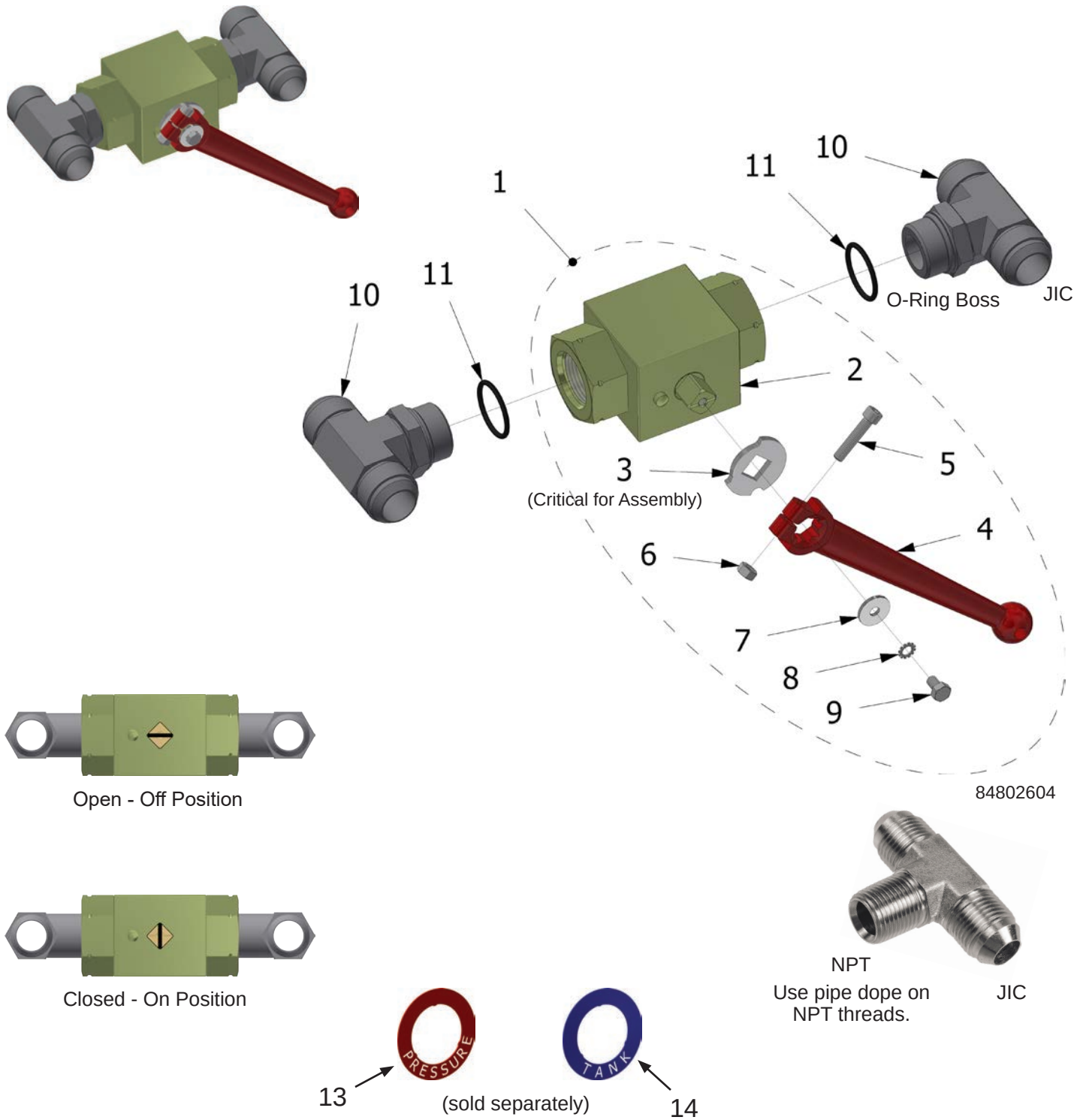
**Obsolete Design -
Some Parts No Longer Available**

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

HYDRAULIC SCHEMATIC
Single Solenoid, P/N 0324461x
S1 De-Energized = Unload.
S1 Energized = Load.



Ball Valve (On/Off) Assembly - Manual - JIC

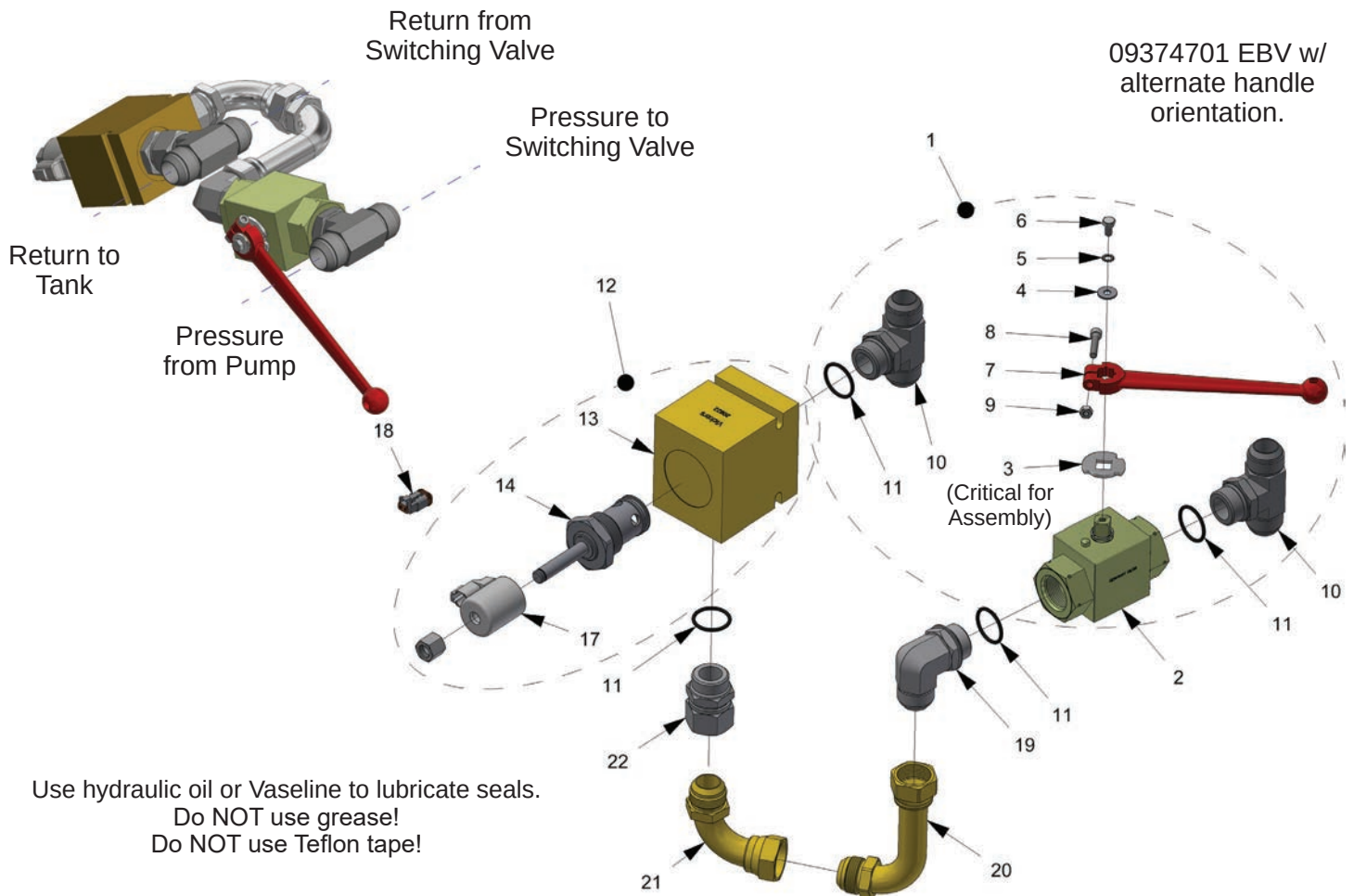


Use hydraulic oil or Vaseline to lubricate seals.
Do NOT use grease!
Do NOT use Teflon tape!

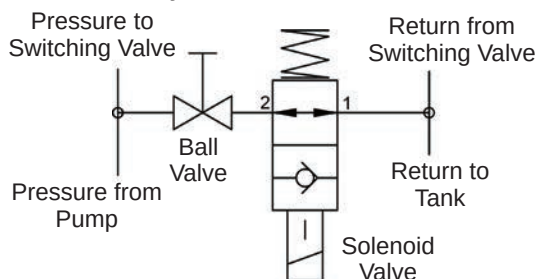
Ball Valve (On/Off) Assembly - Manual - JIC

ID#	Qty	O-Ring Boss JIC Part #	NPT JIC Part # Obsolete	Description
-	(1)	84802604	-	Ball Valve Assembly 1" JIC O-Ring Boss w/Handle & Tees (Includes items 1-11)
-	(1)	-	84802600	Ball Valve Assembly 1" JIC NPT w/Handle & Tees (Includes items 1-10) Obsolete
1	1	84802605	-	Ball Valve Assembly 1" O-Ring Boss Body w/Handle, No Tees (Includes items 3-9)
		-	84802800	Ball Valve Assembly 1" BKH 1NPT-1123 Body w/Handle, No Tees (Includes items 3-9) Obsolete
3	1	84802910		Spud Stop LW56 (Critical for Assembly)
4	1	84802903		Ball Valve Handle Assembly w/Hole (Includes items 4-6)
5	1	87004120		BOLT SOCKET HEAD 6MMX30MM ZN
6	1	87100510		Nut Hex 6mmx1mm
-	-	87075503		Handle to BV Bolt Kit (Includes items 7-9)
7	1	87075410		Washer Fender Flat 6MM ZN DIN 9021
8	1	87075501		Star Washer External Tooth M6
9	1	87002460		Bolt Hex GR8.8 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
13	1	11467301	-	Laser Plate Pressure KRFII Ball Valve Red JIC (sold separately)
14	1	11467302	-	Laser Plate Tank KRFII Ball Valve Blue JIC (sold separately)

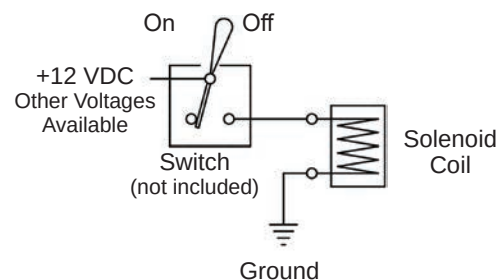
Ball Valve (On/Off) Assembly - Electric - JIC O-Ring Boss



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.

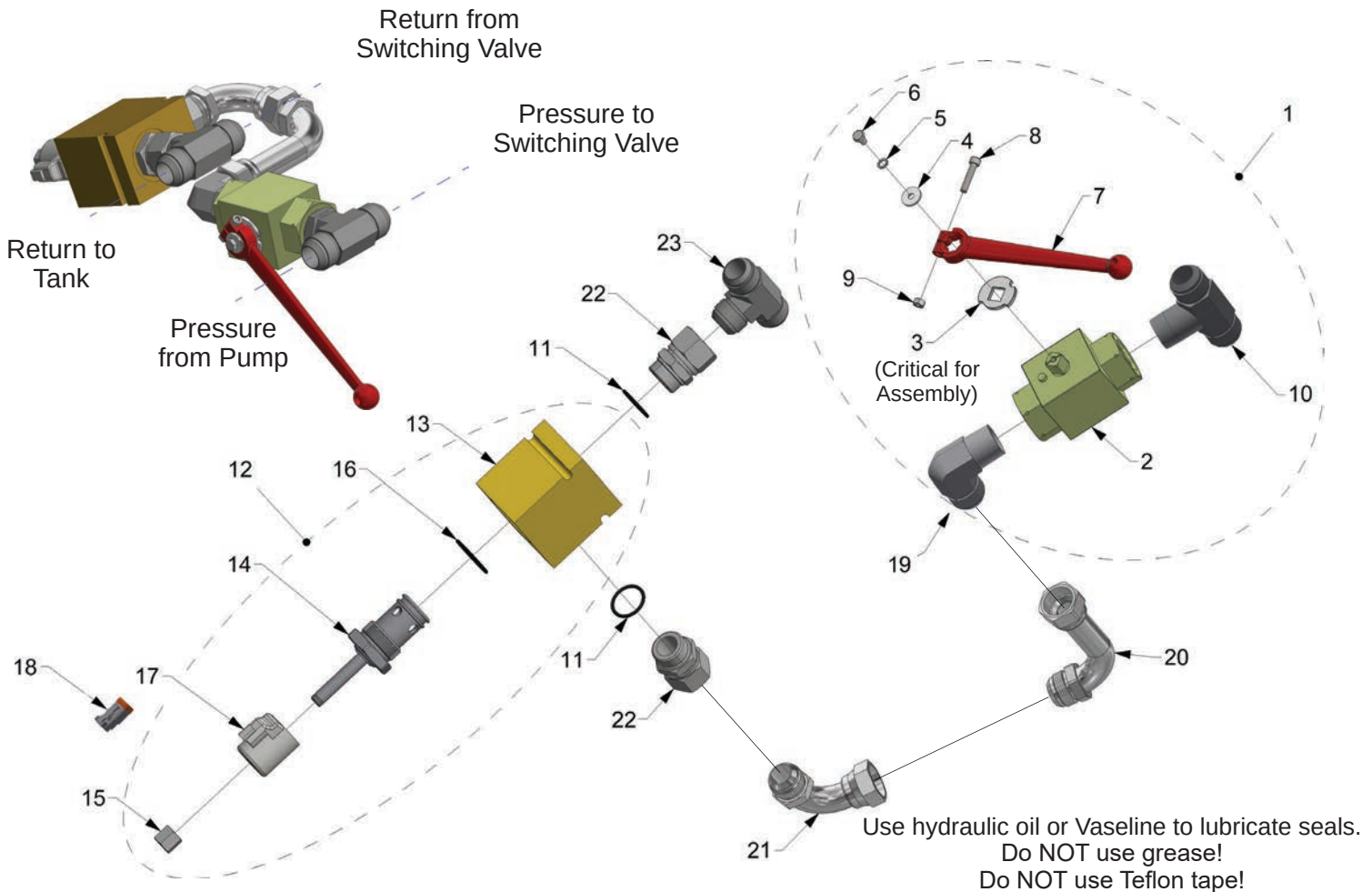
OPERATION

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.

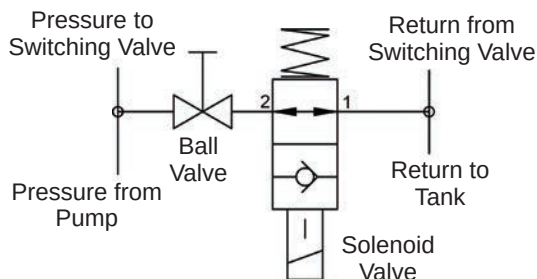
Ball Valve (On/Off) Assembly - Electric - JIC O-Ring Boss

ID#	Qty	O-Ring Boss JIC Part #	Description
-	(1)	03426601	Electric On/Off Ball Valve Assembly w/Coil & Connector (Includes all items below)
-	(1)	03426602	Electric On/Off Ball Valve Assembly (Includes items 1-14, 19-22)
1	1	84802604	Ball Valve Assembly 1" JIC O-Ring Boss w/Handle & Tees (Includes items 2-11)
2	1	84802605	Ball Valve Assembly 1" O-Ring Boss Body w/Handle, No Tees (Includes items 3-6)
3	1	84802910	Spud Stop (critical for assembly)
4	1	87075410	Washer Fender Flat 6MM ZN DIN 9021
5	1	87075501	Star Washer External Tooth M6
6	1	87002460	Bolt Hex GR8 6mm x 1mm x 12mm
7	1	84802903	Ball Valve Handle Assembly w/Hole (Includes items 8-9)
8	1	87004120	BOLT SOCKET HEAD 6MMX30MM ZN
9	1	87100510	Nut Hex 6mm x 1mm
10	1	84692110	16 S5OX-S Straight Thread Tee MJIC X MJIC X ADJ O-Ring (6803-16-16-16)
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
17	1	85602615	Coil, 12 VDC w/Deutsch Conn. Vickers
18	1	06714701	CONNECTOR KIT DEUTSCH DT06-2S
19	1	84691800	16 C5OX-S Straight Thread Elbow MJIC X ADJ O-RING (6801-16-16)
20	1	84683700	16 41T3 LONG SWEPT ELBOW MJIC X FJIC 90 (6701-L-16-16) 63UC
21	1	84683200	16 39T3-S SWEPT ELBOW MJIC X 90° FJIC (6701-16-16) 63UA
22	1	84686200	16 F65OX-S STRAIGHT THREAD CONNECTOR

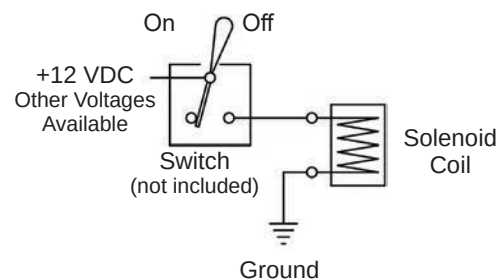
Ball Valve (On/Off) Assembly - Electric - JIC NPT



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.

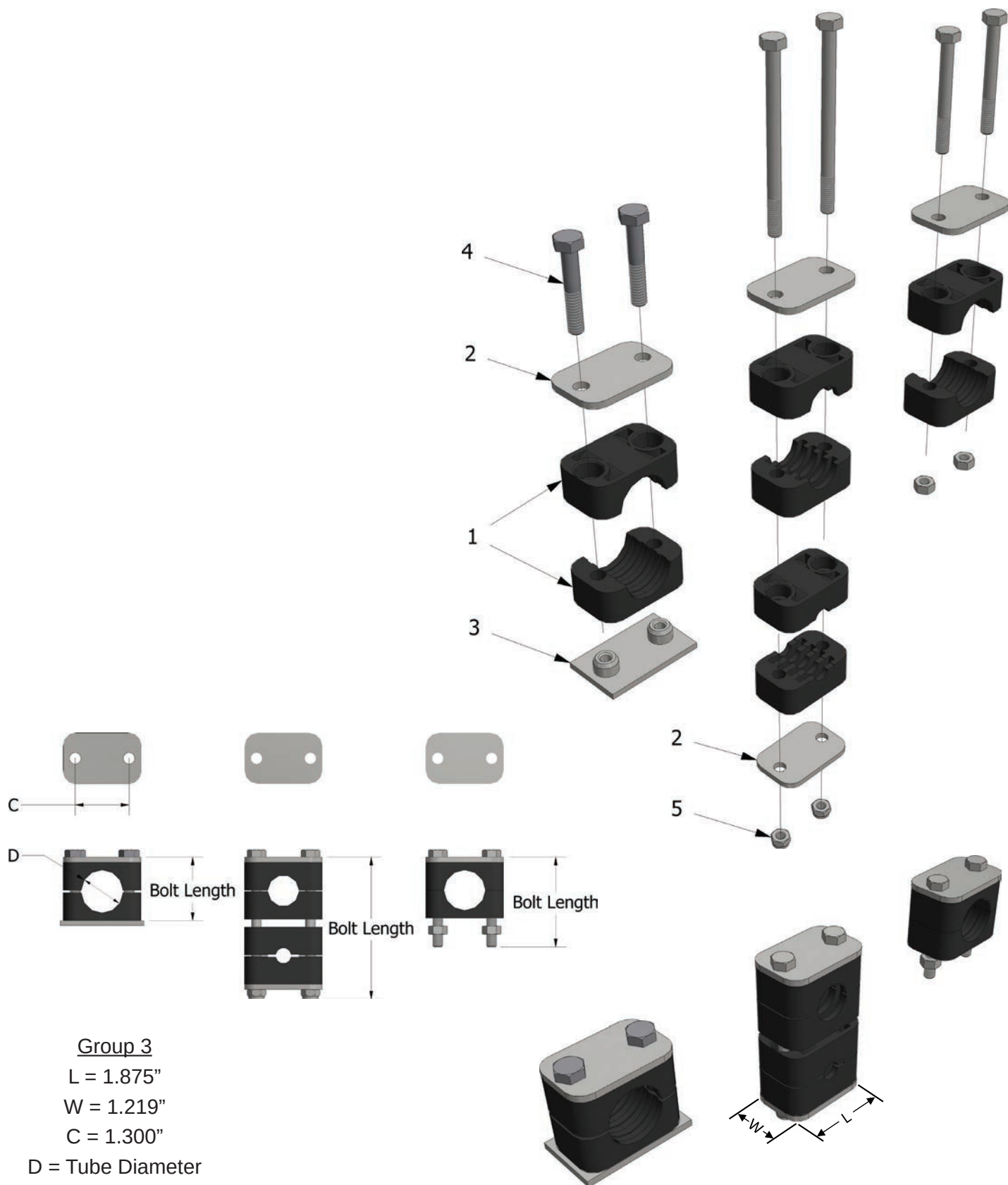
OPERATION

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 - JIC NPT

ID#	Qty	NPT JIC Part #	Description
-	(1)	-	Electric On/Off Ball Valve Assy SV3-20 W/12V Coil & Connector (Includes items 1-23)
1	1	84802601	Ball Valve Assembly 1" JIC NPT w/Handle, T & L (Includes items 1-10 & 19) Obsolete
2	1	84802800	Ball Valve Assembly 1" BKH 1NPT-1123 Body w/Handle, No Tees (Includes items 3-6) Obsolete
3	1	84802910	Spud Stop (critical for assembly)
4	1	87075410	Washer Fender Flat 6MM ZN DIN 9021
5	1	87075501	Star Washer External Tooth M6
6	1	87002460	Bolt Hex GR8 6mm x 1mm x 12mm
7	1	84802903	Ball Valve Handle Assembly w/Hole (Includes items 8-9)
8	1	87004120	BOLT SOCKET HEAD 6MMX30MM ZN
9	1	87100510	Nut Hex 6mm x 1mm
10	1	84677880	16 STX-S Male Branch Tee MJIC X MJIC X MPIPE (2601-16-16-16)
11	2	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
15	1	85108001	NUT SV3 VALVE CART 02-175698
16	1	84388000	920 O-Ring Buna 90
17	1	85602615	Coil, 12 VDC w/Deutsch Conn. Vickers
18	1	06714701	CONNECTOR KIT DEUTSCH DT06-2S
19	1	84677400	16 CTX-S MALE ELBOW MJIC X 90° MPIPE (2501-16-16)
20	1	84683700	16 41T3 LONG SWEPT ELBOW MJIC X FJIC 90 (6701-L-16-16) 63UC
21	1	84683200	16 39T3-S SWEPT ELBOW MJIC X 90° FJIC (6701-16-16) 63UA
22	2	84686200	16 F65OX-S STRAIGHT THREAD CONNECTOR
23	1	84678100	16 JTX-S UNION TEE MJIC X MJIC X MJIC (2603-16-16-16)

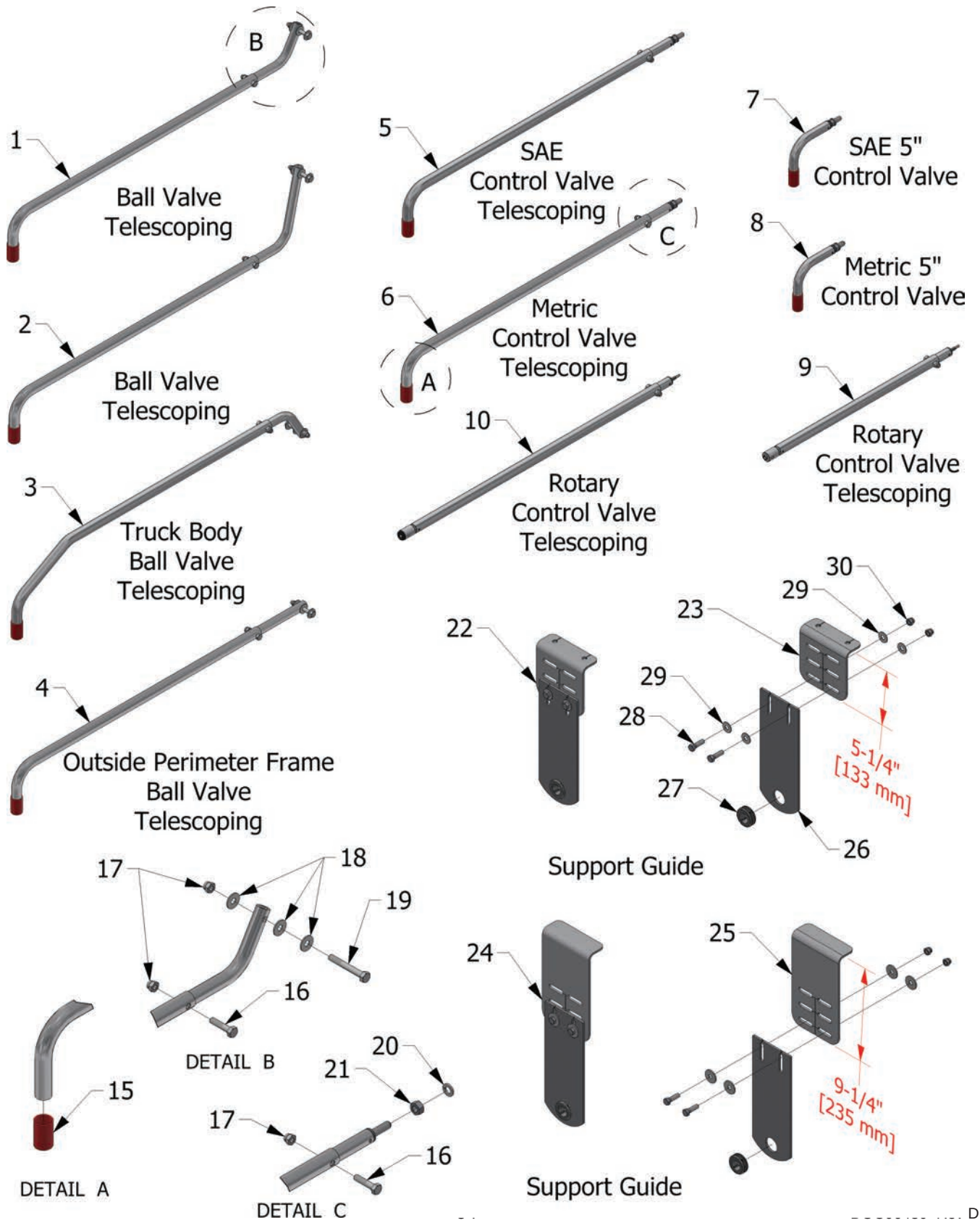
Tube Clamps



Tube Clamps

ID#	Qty	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



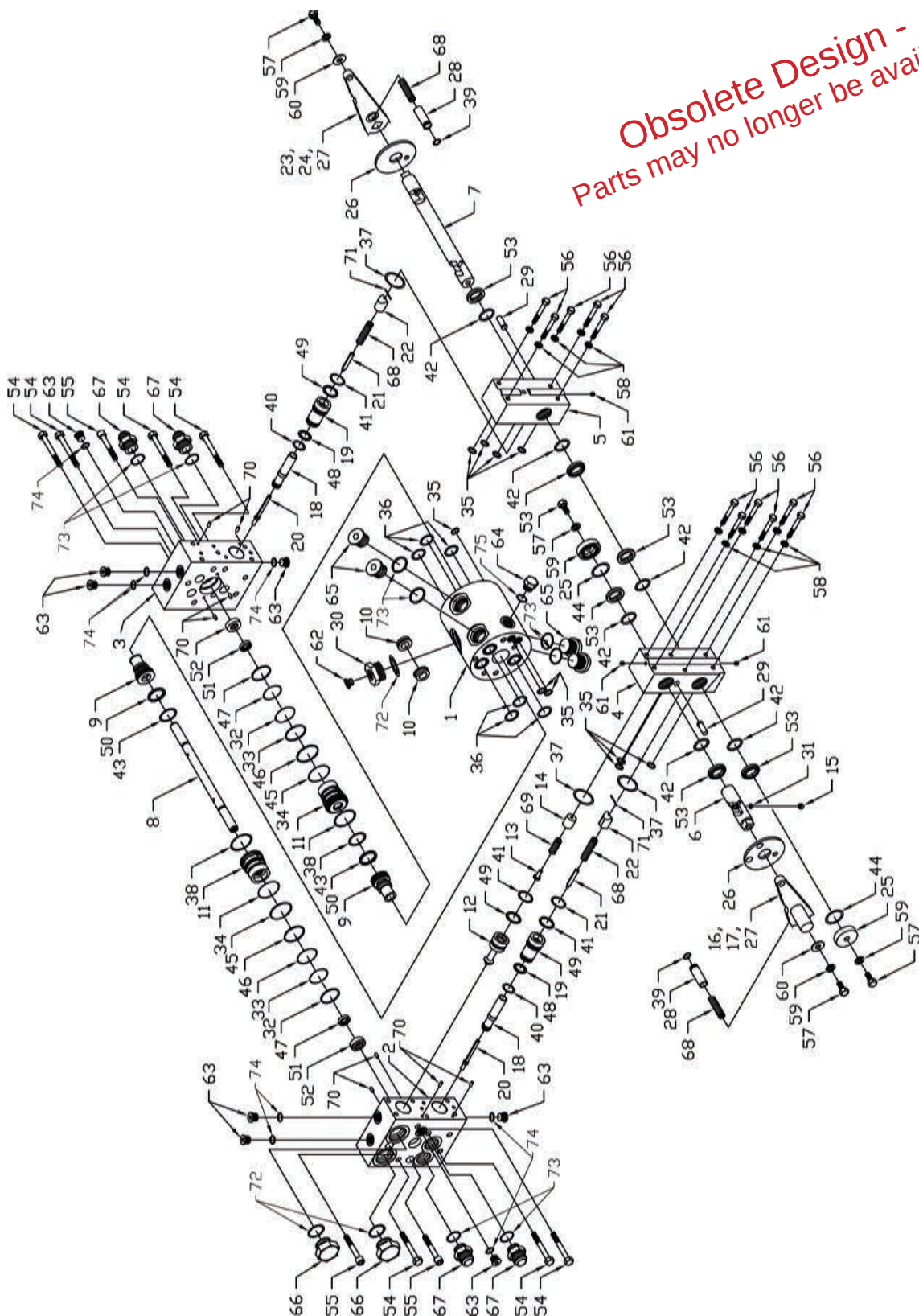
Handle Assemblies

ID#	Qty	Part #	Description
1	(1)	11262401	Telescoping Ball Valve Handle Assembly (Includes items 15-19)
2	(1)	11262501	Telescoping Ball Valve Handle Assembly (Includes items 15-19)
3	(1)	11262601	Telescoping TB Ball Valve Handle Assembly (Includes items 15-19)
4	(1)	11262701	Telescoping OSP Ball Valve Handle Assembly (Includes items 15-19)
5	(1)	11262801	Telescoping Control Valve Handle Assy SAE (Includes items 15-17, 20-21)
6	(1)	11262901	Telescoping Control Valve Handle Assy Metric (Includes items 15-17, 20-21)
7	(1)	11229429	Control Valve Handle Assembly SAE 5" (Includes items 15, 20-21)
8	(1)	11229430	Control Valve Handle Assembly MET 5" (Includes items 15, 20-21)
9	(1)	11263001	Telescoping 23-39" Rotary Control Valve Handle Assembly Metric (Includes items 16-17)
10	(1)	11263101	Telescoping 33-59" Rotary 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	(1)	06627102	Handle Mount Support Assembly (Included items 23 & 26-30)
23	1	06625401	Angle Mount Plate 5-1/4"
24	(1)	06747801	Handle Mount Support Assembly (Included items 25-30)
25	1	06698501	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

Combination Valve Assembly



Obsolete Design -
Parts may no longer be available

Combination Valve Assembly

ID #	Qty	Part #	Description
-	(1)	03890202	VALVE COMBINATION ASSY MET MAN
1	1	03906202	SWITCHING VALVE BODY W/ELEC ON/OFF IN END CAPS
2	1	03906402	front end cap
3	1	03906502	rear end cap
4	1	03906601	front cam block, manual
5	1	03906701	rear cam block, manual
6	1	03912702	on / off cam
7	1	03912802	load / unload cam
8	1	03870002	control rod assembly
9	2	03718901	POPPET VALVE W/ ACTUATOR PISTON KRFII
10	2	03718801	POPPET VALVE CENTER KRFII
11	2	03865001	control rod wear sleeve
12	1	03890701	on / off valve
13	1	03890801	on / off valve follower
14	1	03890901	on / off cam follower
15	1	03892401	on / off cam drain port plug
16	1	03913001	on / off handle assembly
17	1	03913101	on / off handle
18	2	03891101	control valve poppet
19	2	03891201	control valve sleeve
20	2	03891301	control valve pilot poppet
21	2	03891401	control valve plunger
22	2	03891501	control valve cam follower
23	1	03913201	HANDLE LOAD/UNLOAD ASSY KRFII
24	1	03913301	control valve handle
25	2	03892501	cam retaining washer
26	2	03892601	detent plate
27	2	03892901	detent housing
28	2	03893001	detent plunger
29	2	03892001	handle stop pin
30	1	03890402	body port plug-16
31	1	84375175	O-RING 2-010 BUNA 90
32	2	84375428	O-RING 028 BUNA 90
33	2	84375429	O-RING 029 BUNA 90
34	2	84375430	O-RING 030 BUNA 90
35	10	84376200	O-RING 111 BUNA 90
36	6	84377000	O-RING 117 BUNA 90 (Used to be 84377400)
37	3	84378400	O-RING 127 BUNA 90
38	2	84378429	O-RING 129 BUNA 90

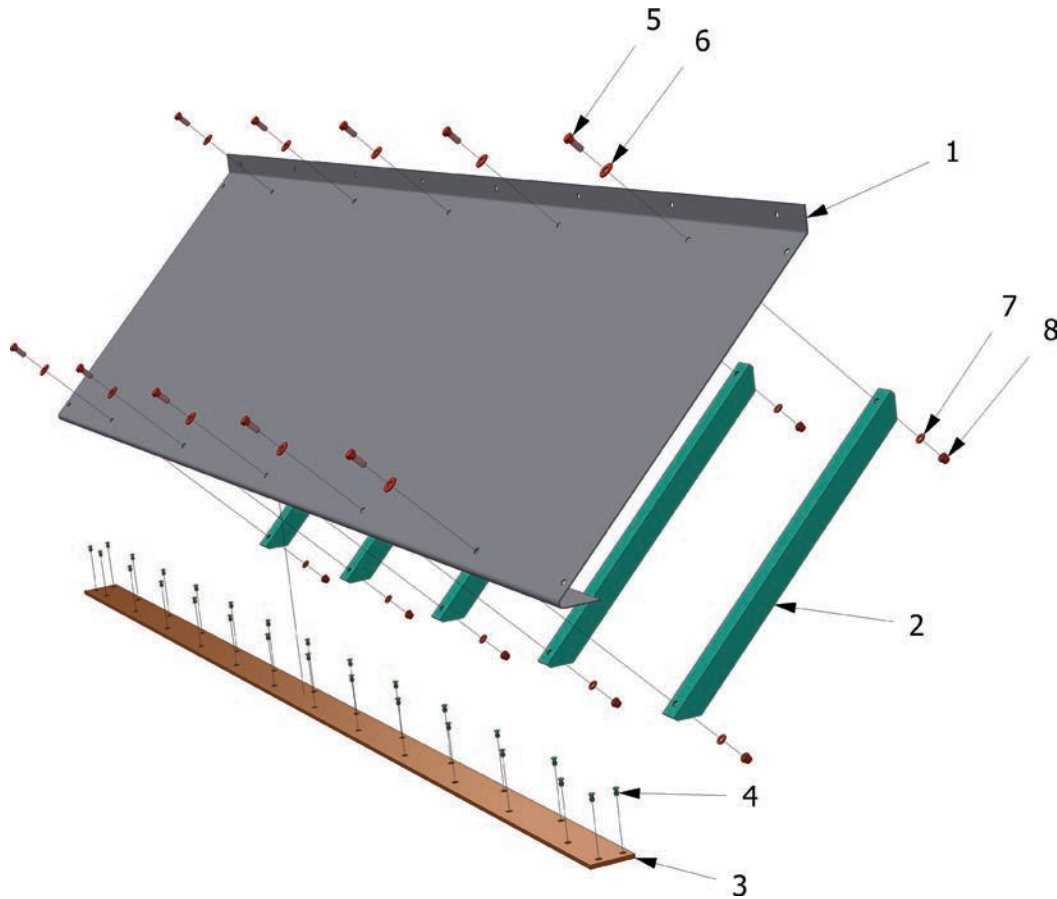
Obsolete Design -
Parts may no longer be available

Combination Valve Assembly

ID #	Qty	Part #	Description
39	2	84378700	O-RING 205 BUNA 90
40	2	84380200	O-RING 210 BUNA 90
41	3	84381200	O-RING 213 BUNA 90
42	6	84381800	O-RING 214 BUNA 70
43	2	84382200	O-RING 216 BUNA 90
44	2	84382600	O-RING 217 BUNA 90
45	2	84388638	O-RING BACKUP 030 BUNA 90
46	2	84388620	O-RING BACKUP 029 BUNA 90
47	2	84388618	O-RING BACKUP 028 BUNA 90
48	2	84390600	O-RING BACKUP 210 BUNA 90
49	3	84391200	O-RING BACKUP 213
50	2	84391600	O-RING BACKUP 216 BUNA 90
51	2	84352200	SEAL ROD 5/8" 7/8X5/8X3/16
52	2	84427200	WIPER CANNED 5/8" ROD 4700625 (Used to be 84425200)
53	2	84427000	WIPER 1" SPOOL CONTROL VALVE D-01.000 (DM-1000U2145)
54	7	87009750	BOLT HEX 10.9 10MMX75MM 17MM HEAD
55	3	87009000	BOLT HEX 10.9 10MMX65MM ZINC
56	11	87006400	BOLT HEX 8.8 8MMX70MM
57	6	87008470	BOLT HEX 10.9 10MM-1.5 X 20MM ZN HCS
58	11	87075750	WASHER LOCK 8MM
59	4	87076500	WASHER LOCK 10MM ZN
60	2	87076000	WASHER FLAT 10MM
61	3	84680770	1/16 HHP-S PLUG PIPE SOCKET 1/16 7/8 TAPER ZINC
62	1	84678780	VSTI 1/4 EDS (1/4" BSPP PLUG)
63	8	84687400	06 HP5ON-S HOLLOW HEX PLUG M O-RING HEX SOCKET (6408-H06-O)
64	1	84687500	08 HP5ON-S HOLLOW HEX PLUG M O-RING HEX SOCKET (6408-H08-O)
65	4	84686900	12 P5ON-S HEX HEAD PLUG M O-RING HEX CAP (6408-O-12)
66	2	84687000	16 P5ON-S HEX HEAD PLUG M O-RING HEX CAP (6408-16)
67	4	84685000	12 F5OX-S STRAIGHT THREAD CONNECTOR MJIC X M O-RING (6400-12-12)
68	4	84453400	.480 x.080 x 1.91" COMP. SPRING
69	1	84453400	.480 x.080 x 1.91" COMP. SPRING
70	8	86650255	PIN DOWEL 3/16"X3/8"
71	2	86650260	PIN ROLL 1/8"X5/8" 12R75PRP BLACK
72	3	84387800	916 O-RING
73	8	84387400	912 O-RING
74	8	84386800	906 O-RING
75	1	84387000	908 O-RING
-	-	03890310	Seal Kit Combination Valve (Includes items 31-53, 68, 72-75)

Obsolete Design -
Parts may no longer be available

Front Shield Assembly



Front Shield Assembly

ID#	Qty	36" Part #	30" Part #	Description
-	(1)	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.