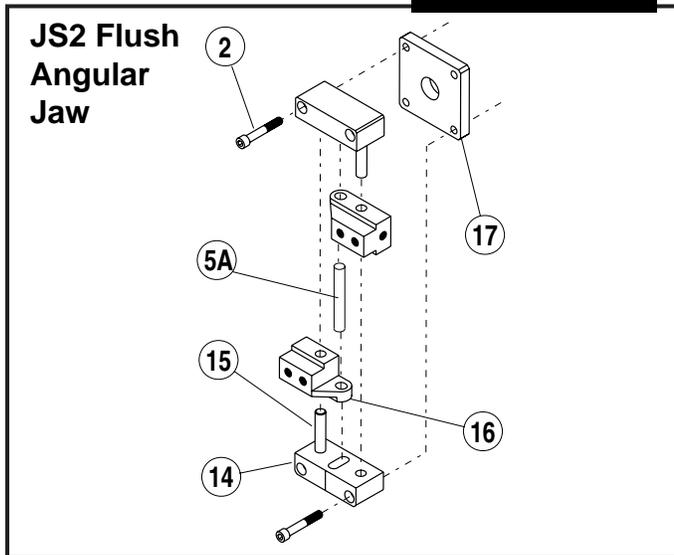


Gripper

2", 3" Bore

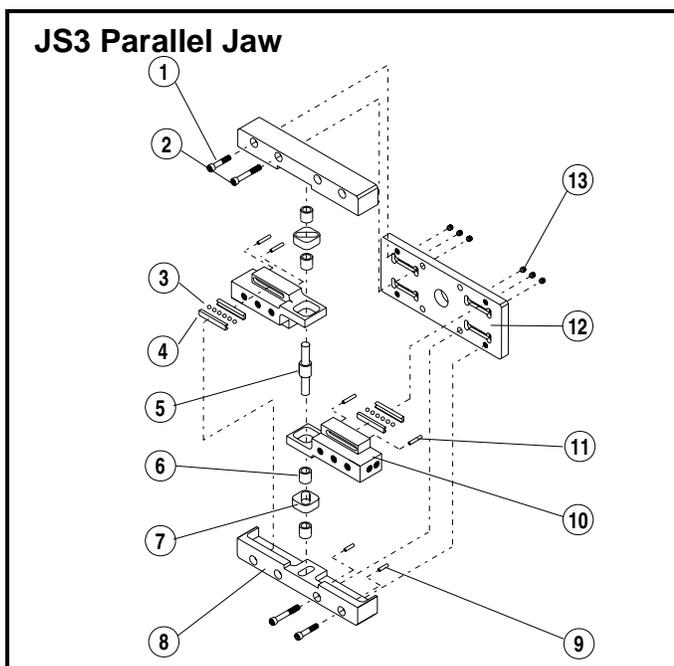
**DISCONTINUED
PRODUCT STYLE
OR SIZE. PARTS
SHEET IS FOR
REPAIR USE ONLY.**

**Models: GPA200JS2 GPP200JS3
GPA300JS2 GPP300JS3**



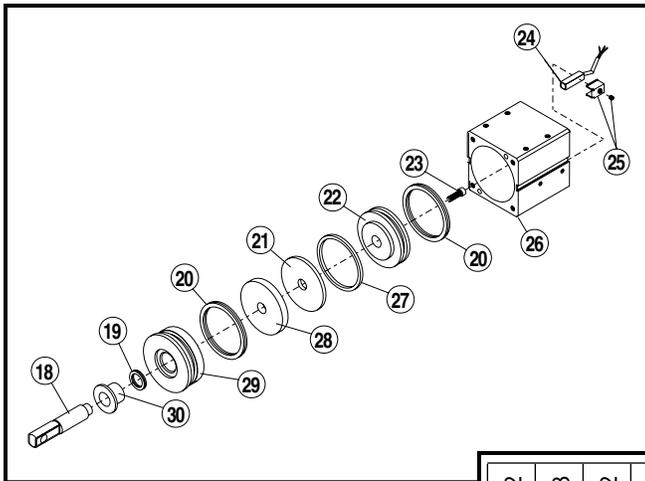
List of Parts

JS2 FLUSH, ANGULAR JAW ASSEMBLY			GPA200JS2	GPA300JS2
ITEM	PART NO.	DESCRIPTION		
2.	1920-1018	SHCS 1/4 -28 x 1.25, GPA200, JS2	4	
	1014-1243	SHCS 5/16-18 x 1.75, GPA300, JS2		4
5A.	1920-1012	Dowel Pin, 5/16 x 1.5 GPA200	1	
	1930-1012	Dowel Pin, 7/16 x 2.25 GPA300		1
14.	1920-1003	Block, Side, GPA200	2	
	1930-1003	Block, Side, GPA300		2
15.	1920-1012	Dowel, Pin, GPA200	2	
	1930-1012	Dowel, Pin, GPA300		2
16.	1920-1021	Finger, Flat Angular, GPA200	2	
	1930-1021	Finger, Flat Angular, GPA300		2
17.	1920-1010	Cover, Housing, GPA200	1	
	1930-1010	Cover, Housing, GPA300		1



List of Parts

JS3 PARALLEL JAW ASSEMBLY			GPP200JS3	GPP300JS3
ITEM	PART NO.	DESCRIPTION		
1.	1920-1026	SHCS 1/4 -28 x 1.25, GPP200, JS2	4	
	1014-1243	SHCS 5/16-18 x 1.75, GPP300, JS2		4
2.	1920-1018	SHCS 1/4 -28 x 1.75, GPP200, JS3	4	
	1014-1243	SHCS 5/16-18 x 2.25, GPP300, JS3		4
3.	1415-1009	Bearing, Ball	48	72
4.	1920-1015	Way, Ball, GPP200	16	
	1930-1015	Way, Ball, GPP300		16
5.	1920-1033	Dowel Pin, 5/16 x 1.5 GPP200	1	
	1930-1012	Dowel Pin, 7/16 x 2.25 GPP300		1
6.	1920-1034	Roller	4	4
7.	1920-1017	Insert, Cam, GPP200	2	
	1930-1017	Insert, Cam, GPP300		2
8.	1920-1004	Block, Side, GPP200	2	
	1930-1004	Block, Side, GPP300		2
9.	1920-1007	Pin, Roll/Dowel, 5/32 x 3.13, GPP200	8	
	1930-1007	Pin, Roll/Dowel, 5/32 x .50, GPP300		8
10.	1920-1007	Finger, Parallel, GPP200	2	
	1930-1007	Finger, Parallel, GPP300		2
11.	1920-1029	Pin, Roll/Dowel, 5/32 x 3.13, GPP200	8	
	1930-1031	Pin, Roll/Dowel, 5/32 x .50, GPP300		8
12.	1920-1011	Cover, Housing, GPP200	1	
	1930-1011	Cover, Housing, GPP300		1
13.	0915-1044	SHCS 1/4-28 x .25	12	12



List of Parts

ITEM	PART NO.	DESCRIPTION	GPA200JS2	GPP200JS3	GPA300JS2	GPP300JS3
23.	1920-1016	SHCS, 1/4-28 x .75, GP200	1	1		
	0804-1254	SHCS, 3/8-16 x 1.0, GP300			1	1
24.	3600-9082	Switch, Reed, Form A, 5m	AR	AR	AR	AR
	3600-9083	Switch, Reed, Form A, Male Connector	AR	AR	AR	AR
	3600-9084	Switch, Reed, Form C, 5m	AR	AR	AR	AR
	3600-9085	Switch, Reed, Form C, Male Connector	AR	AR	AR	AR
	3600-9086	Switch, Triac, 5m Wire	AR	AR	AR	AR
	3600-9087	Switch, Triac, Male Conn.	AR	AR	AR	AR
	3600-9088	Switch, Source, Hall-effect, 5 meter Wire	AR	AR	AR	AR
	3600-9089	Switch, Source, Hall-effect, Male Connector	AR	AR	AR	AR
	3600-9090	Switch, Sinking, Hall-effect, 5 meter Wire	AR	AR	AR	AR
	3600-9091	Switch, Sinking, Hall-effect, Male Connector	AR	AR	AR	AR
25.	2506-9999	Switch Hardware Kit	AR	AR	AR	AR
§.	2503-1025	Female Connector 5 meter	AR	AR	AR	AR
26.	1920-1000	Housing, GP200	1	1		
	1930-1000	Housing, GP300			1	1
27.	2532-1069	Magnet, GP200	1	1		
	1024-1123	Magnet, GP300			1	1
28.	1920-1020	Bumper, GP200	1	1		
	2324-1006	Bumper 3/4 10 x 1/4, GP300			1	1
31.	1920-1008	Guide, Shaft. Piston, GP200	1	1		
	1930-1008	Guide, Shaft. Piston, GP300			1	1
30.	0920-1009	Bushing, Sft, Bronze, GP200	1	1		
	0930-1009	Bushing, Sft, Bronze, GP300			1	1

§ Not pictured

List of Parts

ITEM	PART NO.	DESCRIPTION	GPA200JS2	GPP200JS3	GPA300JS2	GPP300JS3
18.	1920-1002	Shaft, Piston, GP200	1	1		
	1930-1002	Shaft, Piston, GP300			1	1
19.	1920-1031	Seal, U-Cup, Buna-N, GP200	1	1		
	1001-1020	Seal, U-Cup, Buna-N, GP300			1	1
	1920-1032	Seal, U-Cup, Viton, GP200	1	1		
	1001-1119	Seal, U-Cup, Viton, GP300			1	1
20.	1920-1013	Seal, Quad, Buna-N, GP200	2	2		
	1930-1013	Seal, Quad, Buna-N, GP300			2	2
	1920-1027	Seal, Quad, Viton, GP200	2	2		
	1930-1029	Seal, Quad, Viton, GP300			2	2
21.	1920-1005	Washer, Magnet, GP200	1	1		
	1930-1005	Washer, Magnet, GP300			1	1
22.	1920-1001	Piston, GP200	1	1		
	1930-1001	Piston, GP300			1	1

Switches

SWITCHES

On assembled Gripper, Secure Switch with a Clamp and Screw (25).

NOTE: Form A Reed Switches should not be used in TTL logic circuits. A voltage drop caused by the L.E.D. indicator will result. For applications where TTL circuits are used, please contact the factory.

WARNING: An ohmmeter is recommended for testing Reed Switches. NEVER use an incandescent light bulb as a high current rush may damage the switch.

Reed and TRIAC switches are only recommended for signalling position, not directly powering solenoids. For shifting a solenoid, a relay or resistor is recommended between it and the Reed Switch. Switch ratings must not be exceeded at any time.

TO ORDER RETROFIT KITS: SW (then the model number and base size, and code for type of switch needed):

EXAMPLE: SWGP200RY

All Switch Kits come with 1 switch and mounting hardware.

HARDWARE ONLY KIT:
2506-9999

QUICK-DISCONNECTS:
2503-1025 Female Connector 5M

SWITCH TYPE CODE	
BY	(Form C Reed Switch with 5-meter lead)
BX	(Form C Reed Switch with 5-meter lead and QD)
RY	(Form A Reed Switch with 5-meter lead)
RX	(Form A Reed Switch with 5-meter lead and QD)
CY	(TRIAC Switch with 5-meter lead)
CX	(TRIAC Switch with 5-meter lead and QD)
KY	(Hall-effect Switch (Sinking) 5-meter lead)
KX	(Hall-effect Switch (Sinking) 5-meter lead and QD)
TY	(Hall-effect Switch (Sourcing) 5-meter lead)
TX	(Hall-effect Switch (Sourcing) 5-meter lead and QD)

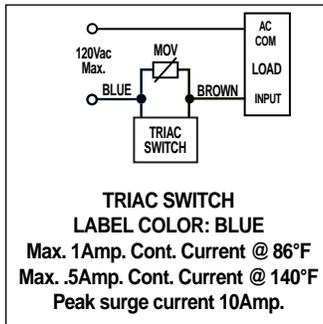
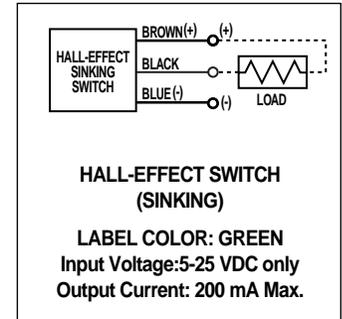
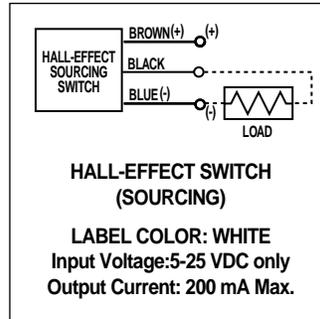
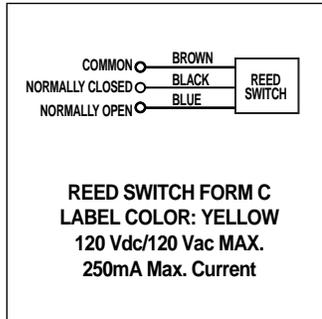
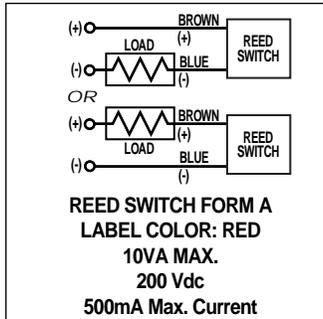
QUICK-DISCONNECT
(Applies to all switch types)

An Important Note Regarding Field Retrofit of Quick-Disconnect Couplers:

If replacing a Quick-Disconnect switch manufactured before 7-1-97 it will also be necessary to replace or rewire the female-end coupler with the in-line splice

2503-1025 Female Connector 5M

UNIVERSAL SWITCH WIRING DIAGRAMS AND LABEL COLOR CODING

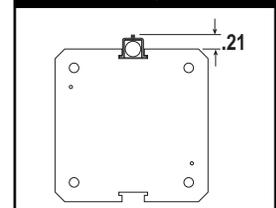


NOTE: The side of the switch with the groove indicates the sensing surface. This must face toward the magnet.

For complete Switch Performance Data, refer to the Tolomatic Fluid Power Products Catalog 9900-4000

MOUNTING DATA

GPA/GPP 150, 200 & 300

*Disassembly Instructions***PISTON SHAFT DISASSEMBLY**
(2" & 3" BORE SIZE)**ANGULAR FINGER DISASSEMBLY:**

1. Remove the four screws (#02) from the Side Blocks (#14). Slide the side blocks and Angular Fingers (#16) from the gripper assembly. Slide an Angular finger (#16) from the Dowel Pin (#15) pressed into the Side Block (#14). Repeat for opposite side.

PARALLEL FINGER DISASSEMBLY:

1. Remove the eight screws (#01 & #02) from the Side Blocks (#08). Remove the bearing way (#04) and bearings (#03) from the slot of the Parallel Finger (#08). Repeat the above step for the second finger/side block assembly. If needed press the dowel pin (#05) through Piston Shaft (#18).

HOUSING DISASSEMBLY:

1. Remove the entire piston/guide shaft assembly from the housing (#27).
2. Remove Quad Seal (#20) from the piston.
3. Loosen socket head cap screw (#23) to remove piston from piston shaft.
4. Remove piston from the stepped diameter of the Piston Shaft (#18) (For later reassembly note how the smaller of the two turned snouts of the piston faces the washer placed on the stepped diameter of the piston shaft).
5. If needed remove magnet (#29) from the smaller of the two turned snouts of the piston (#22).
6. Remove washer (#21) from stepped diameter of Piston Shaft (#18).
7. Slide bumper (#29) over piston shaft to remove.
8. Slide the Shaft Guide (#30) over the Piston Shaft (#18) to remove.
9. Remove Quad-ring (#19) from the Shaft Guide (#30).
10. Slide Quad Seal (#20) from Piston Shaft (#18).
11. Slide Bronze Bushing Shaft (#26) from Piston Shaft (For later reassembly note how flanged side of the bronze bushing shaft rests against the housing cover).
12. Remove Housing Cover (#17, #12) from the stepped diameter end of the Piston Shaft (#18).

*Assembly Instructions***PISTON SHAFT ASSEMBLY**
(2" & 3" BORE SIZE)

1. If applicable, press the dowel pin (#05) through Piston Shaft (#18) ensure that the dowel pin is centered in the piston shaft.
2. **Angular Grippers only**
If applicable, press a dowel pin (#15) into each Side Block (#14) with an arbor press until it bottoms out in the side block. One hole of the side block will have a loose fit and the other an interference fit with the dowel pin, press the dowel pin into the hole with the interference fit.
3. Install housing cover (#17, #12) over the stepped diameter end of the piston shaft (#18) and slide it up to the dowel pin (#05).
4. Slide Bronze Bushing Shaft (#31) onto piston shaft, flanged side of the

sleeve should rest against the housing cover.

5. Lubricate Quad Seal (#19) with Magnalube "G" and slide over piston shaft until it seats against the bronze bushing shaft (#31).
6. Lubricate and install Quad-ring (#20) onto the Shaft Guide (#30). Note: Inspect all quad seals after assembly to verify that there isn't a twist in the seal.
7. With stepped bore facing the housing cover slide the shaft guide (#30) over the piston shaft (#18) until it makes contact with the housing cover (#17, #12).
8. Slide bumper (#29) over piston shaft and seat it against the shaft guide.
9. Place washer (#21) onto stepped diameter of piston shaft.
10. If applicable install magnet (#28) onto the smaller of the two turned snouts of the piston (#22).

11. Insert piston (#22) onto the stepped diameter of the piston shaft (#18) so the smaller of the two turned snouts of the piston faces the washer (#21) placed on the stepped diameter of the piston shaft.
12. Secure piston to piston shaft with a socket head cap screw (#23). Use Loctite #272 on the screw.
13. Lubricate and install Quad Seal (#20) onto the piston.

HOUSING ASSEMBLY:

1. Verify the bore of the housing is clear of any dirt or debris. Lubricate the bore of the Housing (#27) with a thin film of Magnalube "G".
2. Insert entire piston/guide shaft assembly into housing (#27) until the housing cover rests on top of the housing. Line up the holes in the housing with the holes in the housing cover. Note: On those models that the housing cover extends over the side extend that portion of the cover over the dovetail side of the housing.

ANGULAR FINGER ASSEMBLY:

Note: Place a thin layer of Christolube "MCG 200" on all mating parts of angular gripper before assembly.

1. Slide an Angular finger (#16) over the dowel pin (#15) pressed into the Side Block (#14). Position the dowel pin (#05) on the piston shaft through the open slot in the angular gripper and into the recess milled into the side block. Place a small amount of Loctite #222 on the SHCS (#02) then loosely secure the side block to the housing. Do not tighten the SHCS at this time. Repeat the above step for the second half of the angular finger/slide block assembly. Squeeze both of the side blocks together to remove any sideplay from the fingers and tighten the four screws.

PARALLEL FINGER ASSEMBLY:

Note: Place a thin layer of Christolube "MCG 200" on all mating parts of parallel gripper before assembly.

1. Press the Ball Ways (#04) securely into the Side blocks and the parallel fingers. Press the Cam Inserts (#07) into the Parallel fingers.
2. Lubricate the ball ways with Christolube "MGC200".
3. On the 2" gripper place four Roller Cams (#06) onto the dowel pin pressed into the piston shaft. Place 6 Ball Bearings (#03) for the 2" gripper or 9 Ball Bearings for the 3" gripper into the ball way pressed into the housing cover. Lay the Parallel Finger (#10) over the ball bearings while simultaneously inserting the dowel pin on the piston shaft through the angled slot of the parallel finger. Place Ball Bearings (#03) into each ball way pressed into the top of the two parallel fingers. Loosely secure the side blocks to the housing assembly with four long SHCS (#02) on the inside and four shorter SHCS (#01) on the outside. Use Loctite #222 on the SHCS. Lay the assembly on its side on a flat surface tighten one side block ensuring the side block is in alignment with the housing. Tighten the second side block so it is parallel to the first.
4. Insert 12 socket heat Set Screws (#13) into the bottom of the housing cover.
5. Gradually tighten the set screws to eliminate any noticeable endplay in the gripper fingers yet still allow free and easy movement of the fingers.

INSPECTION:

1. Manually manipulate the jaws through a cycle to make sure it is properly assembled and does not have any sticking points before applying air.

Clean the outside surfaces of the gripper with a cloth wetted with contact cleaner. **CAUTION do not spray contact cleaner into the lubricated gripper finger assembly.**

Maintenance

MAINTENANCE

The Gripper should be kept as clean as possible around the jaws.

LUBRICATION

All Tolomatic Grippers are prelubricated at the factory. To ensure maximum life, the following guidelines should be followed.

1. Filtration– We recommend the use of dry, filtered air in our products. 'Filtered air' means a level of 10 Micron or less. 'Dry' means air should be free of appreciable amounts of moisture. Regular maintenance of installed filters will generally keep excess moisture in check.
2. External Lubricators (optional)– The factory prelubrication of Tolomatic Grippers will provide optimal performance without the use of external lubrication. However, external lubricators can further extend service life of pneumatic actuators if the supply is kept constant.

Oil lubricators, (mist or drop) should supply a minimum of 1 drop per 20 standard cubic feet per minute to the cylinder. As a rule of thumb, double that rate if water in the system is suspected. Demanding conditions may require more lubricant.

If lubricators are used, we recommend a non-detergent, 20cP @ 140°F 10-weight lubricant. Optimum conditions for standard cylinder operation is +32° to +125°F (+0° to 51.6°C).

NOTE: Use of external lubricators will wash away the factory installed lubrication. External lubricants must be maintained in a constant supply or the results will be a dry actuator prone to failure.

3. Sanitary environments– Oil mist lubricators must dispense 'Food Grade' lubricants to the air supply. Use fluids with ORAL LD50 toxicity ratings of 35 or higher such as Multitherm® PG-1 or equivalent. Demanding conditions can require a review of the application.

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