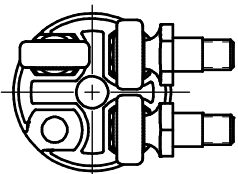
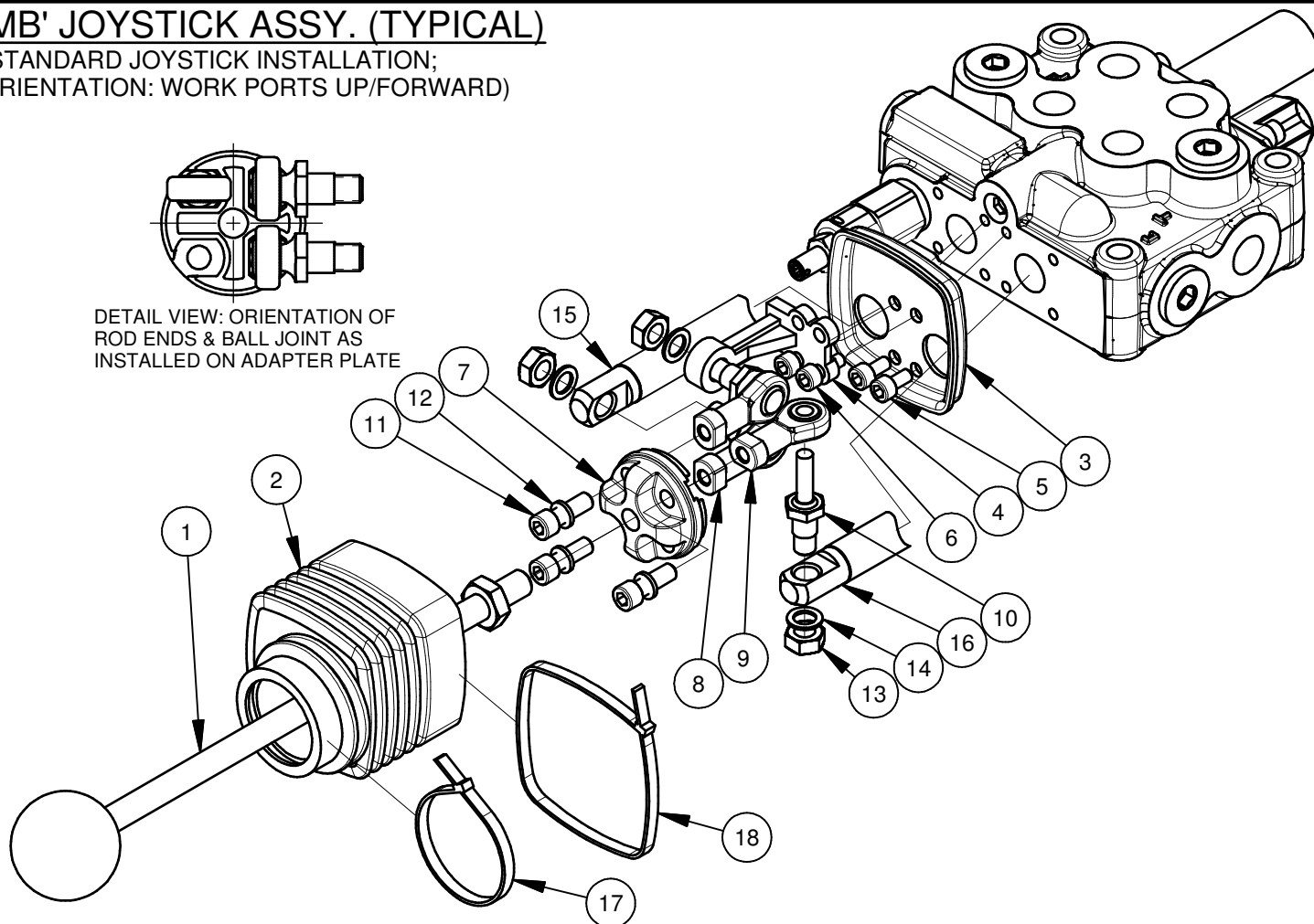


# 'MB' JOYSTICK ASSY. (TYPICAL)

(STANDARD JOYSTICK INSTALLATION;  
ORIENTATION: WORK PORTS UP/FORWARD)



DETAIL VIEW: ORIENTATION OF  
ROD ENDS & BALL JOINT AS  
INSTALLED ON ADAPTER PLATE



## JOYSTICK ASSEMBLY PROCEDURE:

USE MEDIUM STRENGTH THREAD LOCKER ON ALL FASTENERS. TORQUE FASTENERS PER TABLE BELOW.

ASSEMBLE TWO STUDED ROD END ASSY'S (ITEM 8) ONTO ADAPTER PLATE (ITEM 7) AS SHOWN USING CAP SCREW (ITEM 11) & LOCK WASHER (ITEM 12).

NOTE THAT WRENCH FLATS ARE ALIGNED. ROTATE ADAPTER PLATE AS REQUIRED TILL SLOTS MATCH WRENCH FLATS. (SEE INSERT VIEW)

INSTALL BASE PLATE (ITEM 3) ONTO VALVE BODY USING TWO SHORT CAP SCREWS (ITEM 5).

INSTALL BRACKET (ITEM 4) ONTO BASE PLATE USING THE HOLES OF THE BRACKET AS SHOWN AND TWO CAP SCREWS (ITEM 6).

ROTATE BOTH SPOOLS (ITEMS 15 & 16) UNTIL SPOOL HOLES ARE ORIENTED PARALLEL WITH THE BRACKET TANG HOLE. INSERT THE THREADED STUDS OF THE ROD END ASSY'S INTO THE BRACKET TANG AND SPOOL TANG NEAREST THE BRACKET. LOOSELY INSTALL LOCK WASHERS AND HEX NUTS ON STUDS.

ROTATE THE SPOOL FARTHEST FROM THE BRACKET SO THAT THE TANG HOLE IS PERPENDICULAR TO THE FIRST SPOOL TANG HOLE. INSERT THE THREADED END OF SPOOL STUD (ITEM 10) INTO THE SECOND SPOOL TANG HOLE AND LOOSELY INSTALL LOCK WASHER AND HEX NUT. SLIDE BALL ASSEMBLY (ITEM 9) OVER THE NON-THREADED END OF THE SPOOL STUD AND THEN SWING THE HANDLE ADAPTER PLATE (ITEM 7) UNTIL THE STEM OF THE BALL ASSEMBLY FITS INTO THE RECESS OF HANDLE PLATE, AS IS SHOWN IN THE DETAIL VIEW.

INSTALL CAP SCREW AND LOCK WASHER (ITEMS 11 & 12) INTO BALL ASSEMBLY. USING THE INDICATED TORQUE VALUES AND THREAD LOCKER, TIGHTEN ALL FASTENERS. APPLY GREASE TO EXPOSED ENDS OF SPOOLS, TO BALL JOINTS AND SPOOL STUD.

INSTALL KNOB ON HANDLE. SLIP RUBBER BOOT (ITEM 2) OVER HANDLE, WITH SMALL END TOWARD KNOB. FULLY THREAD JAM NUT ONTO HANDLE AND INSTALL HANDLE FULLY INTO ADAPTER PLATE. RESTRAIN ADAPTER PLATE WHILE TIGHTENING JAM NUT AGAINST ADAPTER PLATE. PULL BOOT INTO POSITION ON SPOOL ADAPTER AND BASE PLATE FLANGES (LOOSEN RELIEF CARTRIDGE IF REQUIRED). INSTALL PLASTIC TIES AS REQUIRED. MOVE JOYSTICK INTO ALL POSITIONS TO ENSURE THAT SPOOLS SPRING TO CENTER WHEN HANDLE FORCE IS REMOVED.

### TORQUE NOTES:

CAP SCREW, 5 mm (TYP): 6.5 FT-LBS. (78 IN-LBS.)

CAP SCREW, 6 mm (TYP): 11.0 FT-LBS. (132 IN-LBS.)

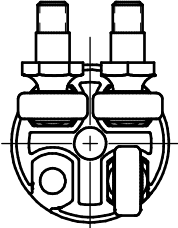
HEX NUT, 8 mm (TYP): 19.0 FT-LBS. (228 IN-LBS.)

## 660170061; JOYSTICK ASSY, COMPLETE

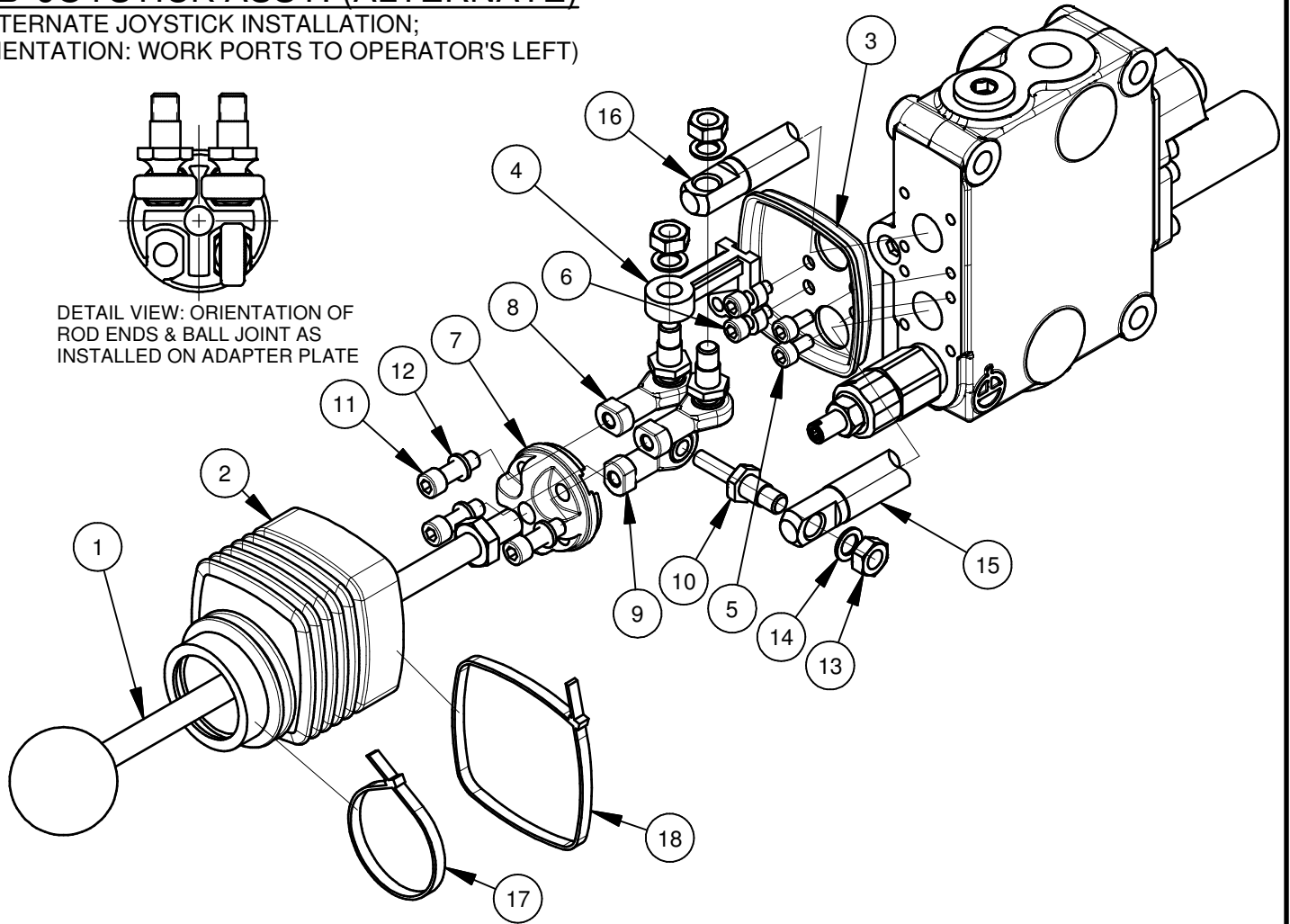
ITEM:	QTY	PART NO.:	DESCRIPTION:
1	1	660170062	LEVER KIT
2	1	671300064	BOOT
3	1	*	BASE PLATE
4	1	*	BRACKET, FIXED PIVOT
5	2	*	CAP SCREW (M5 x 10mm)
6	2	*	CAP SCREW (M5 x 14mm)
7	1	*	ADAPTER PLATE, HANDLE
8	2	*	ROD END ASSY
9	1	*	BALL JOINT ASSY
10	1	*	SPOOL STUD, THREADED
11	3	*	CAP SCREW (M6 x 16mm)
12	3	*	LOCK WASHER (6mm)
13	3	*	HEX NUT, 8mm
14	3	*	LOCK WASHER, 8mm
15	1	*	SPOOL, FLOAT
16	1	*	SPOOL, 4 WAY
17	1	*	PLASTIC TIE
18	1	*	PLASTIC TIE
		*	(NOT SOLD SEPARATELY)

# 'MB' JOYSTICK ASSY. (ALTERNATE)

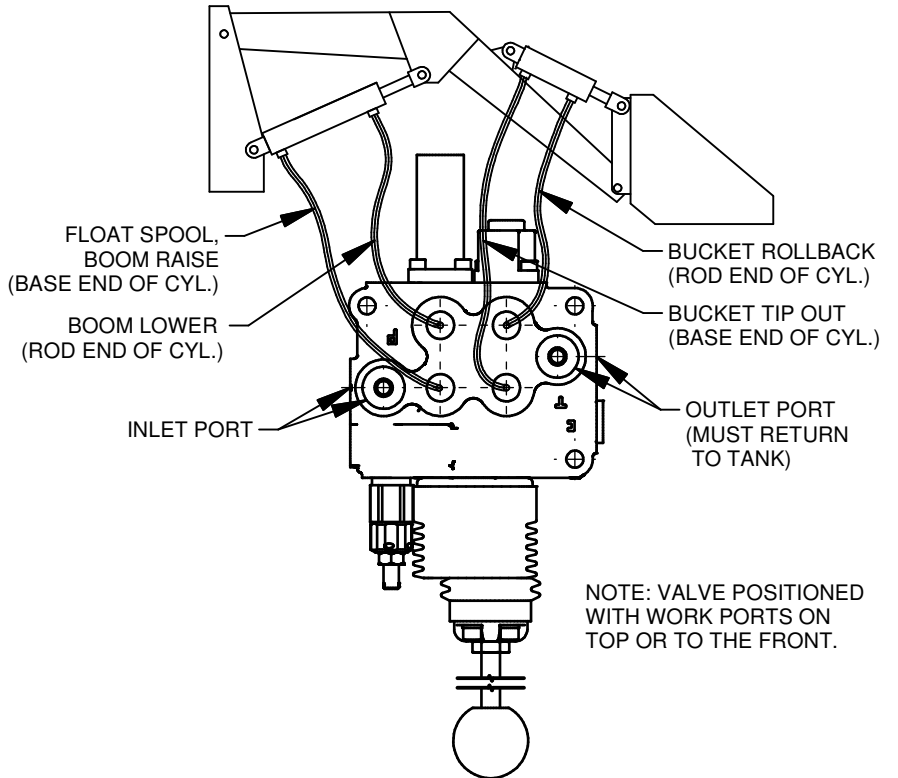
(ALTERNATE JOYSTICK INSTALLATION;  
ORIENTATION: WORK PORTS TO OPERATOR'S LEFT)



DETAIL VIEW: ORIENTATION OF  
ROD ENDS & BALL JOINT AS  
INSTALLED ON ADAPTER PLATE



## EXAMPLE 'MB' LOADER VALVE HYDRAULIC CIRCUIT



NOTE: VALVE POSITIONED  
WITH WORK PORTS ON  
TOP OR TO THE FRONT.

