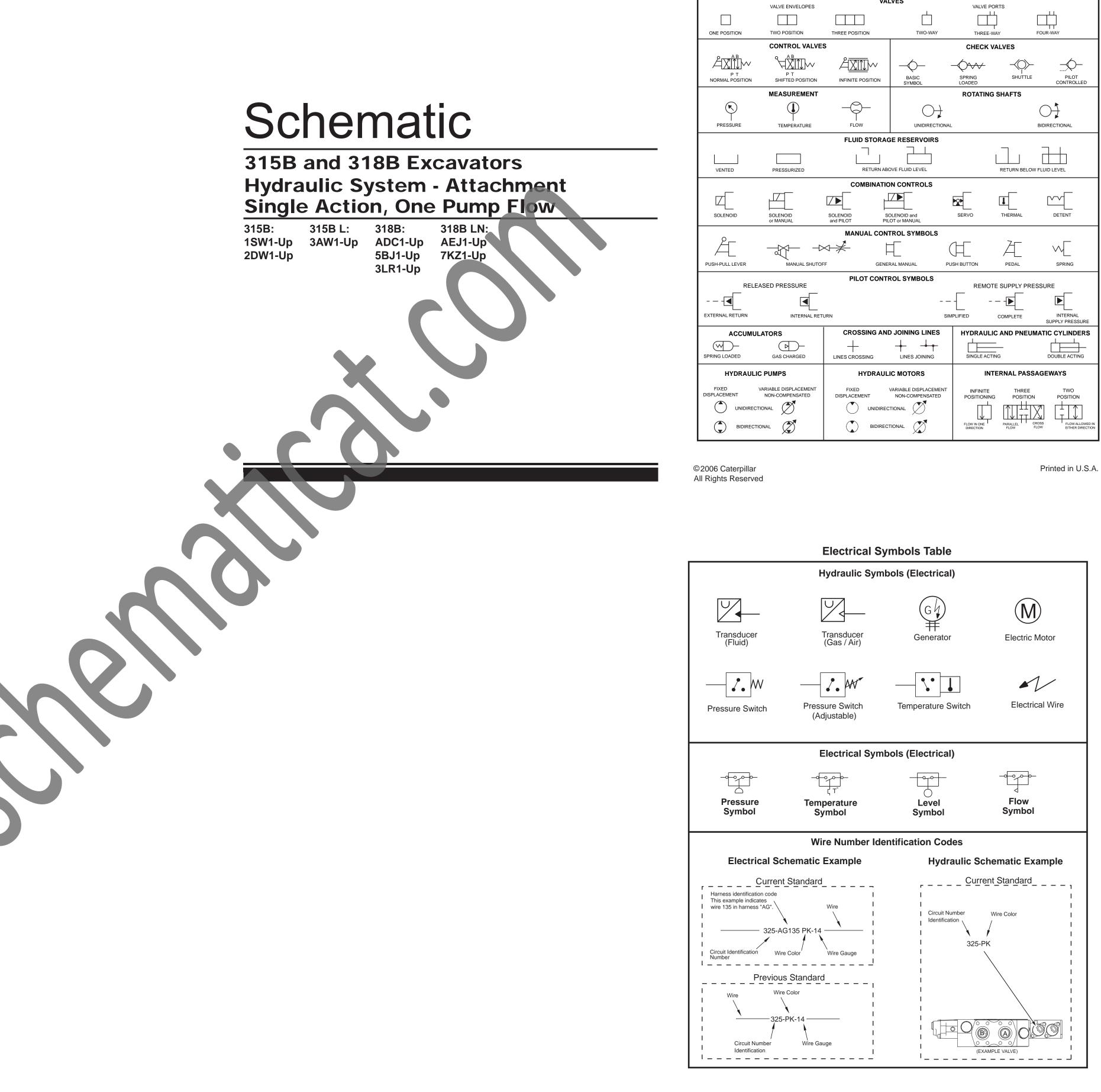
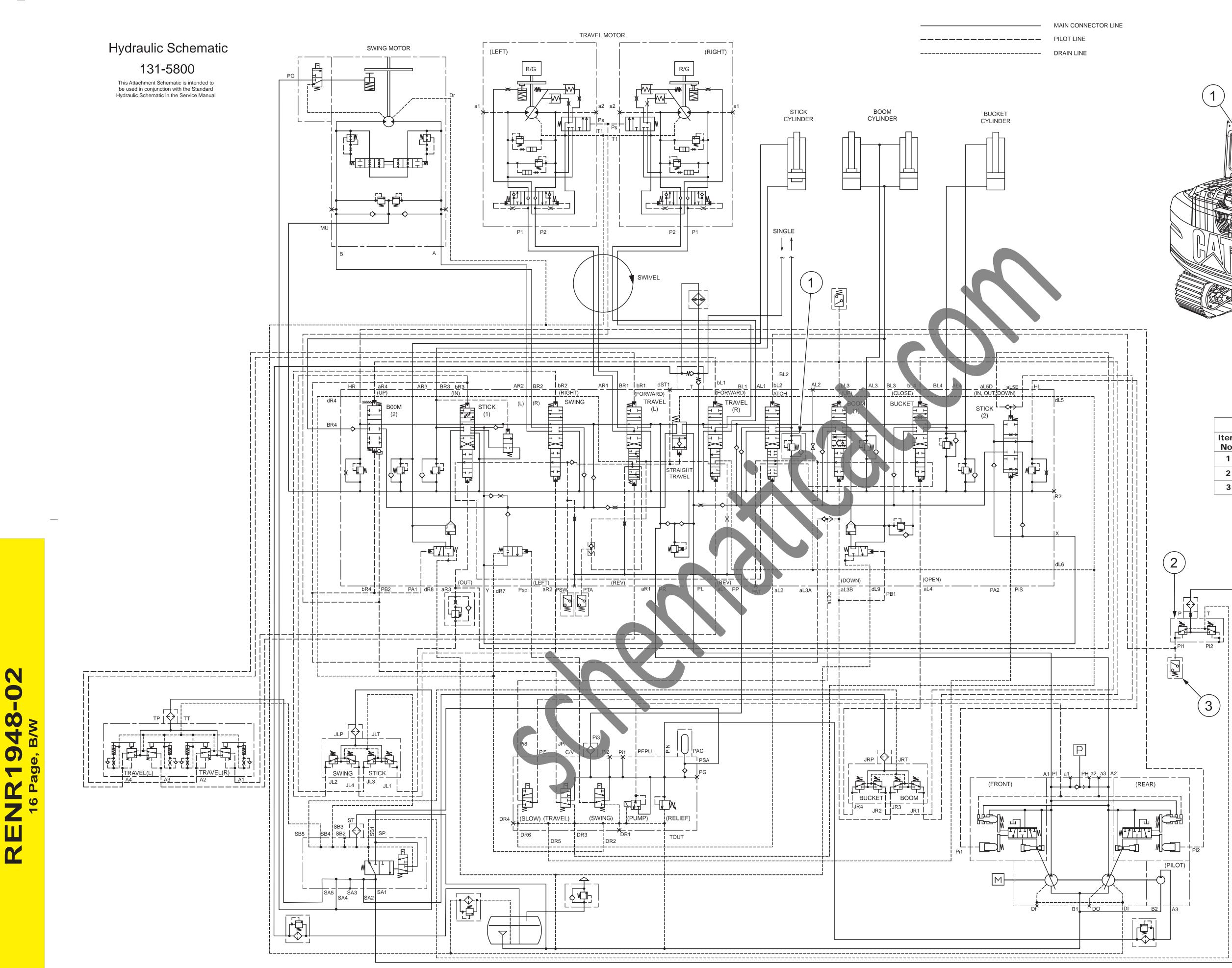
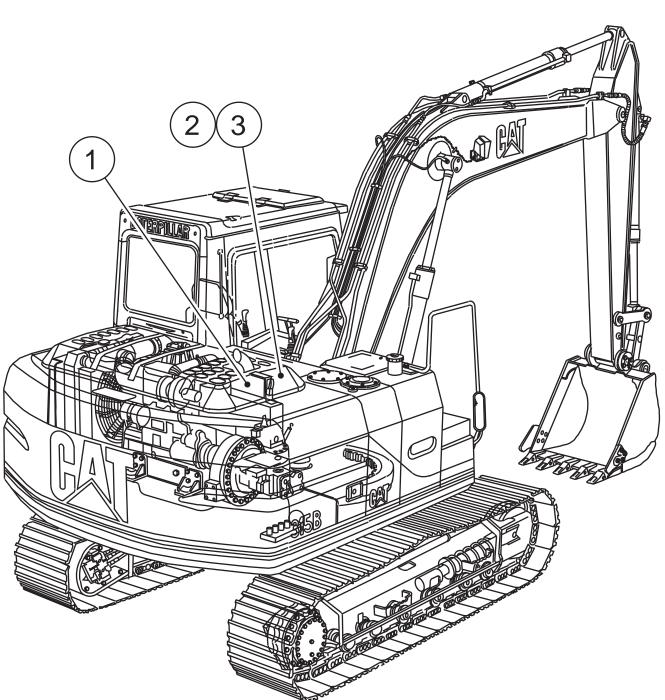

CATERPILLAR®

RENR1948-02 February 2006



FLUID POWER SYMBOLS							
BASIC COMPONENT SYMBOLS							
\bigcirc	\rightarrow	$\left\{ \square \square \right\}$)()(
PUMP or MOTOR	FLUID CONDITIONER SF	PRING CONTROL VALVES	RESTRICTION	LINE RESTRICTION (FIXED)	P	UMP: VARIABLE and SSURE COMPENSATED	
VARIABILITY		STRICTION PRESSURE RIABLE) COMPENSATION	HYDRAULIC ENERGY TRI		LINE RESTRICTION VARIABLE and PRESSURE COMPENSATED		
VALVE ENVELOPES VALVE PORTS							
ONE POSITION	TWO POSITION	THREE POSITION	TWO-WAY			II II IR-WAY	
CONTROL VALVES CHECK VALVES							
P T NORMAL POSITION	P T SHIFTED POSITION		BASIC SYMBOL				
	MEASUREMENT ROTATING SHAFTS						
PRESSURE	TEMPERATURE FLOW						
FLUID STORAGE RESERVOIRS							
VENTED	PRESSURIZED	RETURN ABC			RETURN BELOW FLU		
COMBINATION CONTROLS							
	SOLENOID or MANUAL		DLENOID and OT or MANUAL	SERVO	THERMAL		
MANUAL CONTROL SYMBOLS							
USH-PULL LEVER MANUAL SHUTOFF GENERAL MANUAL PUSH BUTTON PEDAL SPRING							
PILOT CONTROL SYMBOLS RELEASED PRESSURE RELEASED PRESSURE							
ACCUMULATORS CROSSING AND JOINING LINES HYDRAULIC AND PNEUMATIC CYLINDERS							
PRING LOADED	GAS CHARGED				<u>-</u>	DOUBLE ACTING	
HYDRAULIC PUMPS HYDR			LIC MOTORS INTERNAL PASSAGEWAYS		EWAYS		
	VARIABLE DISPLACEMENT NON-COMPENSATED CTIONAL	FIXED DISPLACEMENT UNIDIREC BIDIRECT			THREE POSITION	TWO POSITION	





COMPONENTS				
Item No.	Description			
1	Line Relief			
2	Pilot Valve (Attachment)			
3	Pressure Switch			