

# **Precision Controlled Steering**

*Tim Sarver, Ryan Kats, Adam Myers, Anthony Holtkamp*

*April 15, 2005*

## **Objective:**

- Install Outback E-Drive on a Hagie sprayer.
- Make necessary changes to the installation guide
- Adapt hydraulic components from a Hagie 284 to a 284XP
- Adjust steering system to reduce guidance error



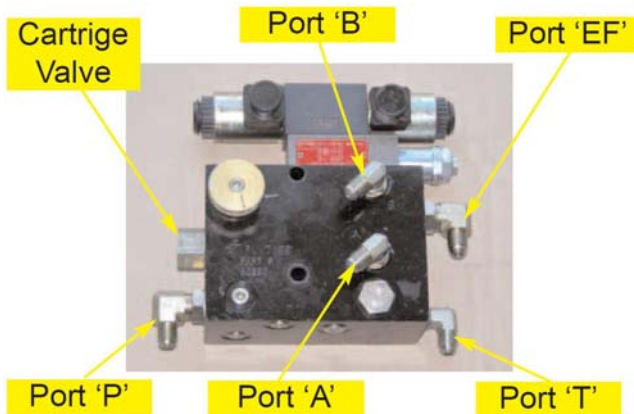
## Cab Components

Outback S (right)

✍ Takes signal from the receiver and displays position

Control Block Actuator (left)

✍ Relays signal from Outback S to an electric signal and sends it to the Hydraulic Control Block



## Hydraulic Control Block

✍ Receives electronic signals from the control block actuator

✍ Controls the hydraulic flow that steers the sprayer

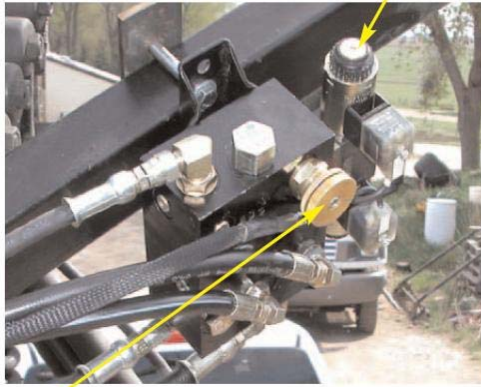
## Hydraulic Lines

✍ Hydraulic lines are coupled between the hydraulic control block and the steering cylinders on the sprayer

✍ Hydraulic lines shown are coupled with existing lines on the sprayer



## Manual Override



## Flow Control

This picture shows hydraulic lines connecting to the hydraulic control block

Shown to the right is the Hagie 284XP sprayer in the field ready to activate the E-drive system to start guiding.



## Parts List

### Kit Contents

Unpack the installation kit and identify the required parts as shown.

REF	P/N	QTY	DESCRIPTION
A	60290L	1	Assy, Hyd. Valve Block - OC eDrive (Low Flow)
Bag #1 of 3 includes B & C			
B	6MJ-6MB90	3	Adapter, Hyd. 90 Elbow - #6maleJIC x #6maleORB
C	6MJ08MB90	2	Adapter, Hyd. 90 Elbow - #6maleJIC x #8maleORB
D	AB791	1	PLB 60178 - eDrive Hyd. Block Mnt, Spra Coupe 4440
E	AB810	1	Hammer Strap, eDrive Hyd. Block Mount - Hagie 2100/284
Bag #2 of 3 includes F & G			
F	B38.314	2	Bolt - 3/8NC x 3-1/4" Gr5, ZP
	FW38N	2	Washer, Narrow Flat - 3/4"OD x 13/32ID x 1/16"thk, ZP
	LN38NYL	2	Nut, NyLock - 3/8NC ZP
G	B38.34	2	Bolt, 3/8NC x 3/4 Gr5 ZP
	LN38NYL	2	Nut, NyLock - 3/8NC Z

**PURDUE**  
UNIVERSITY

Title: Name(s), Program (ABE, ASM, FBPE)  
Month Day, Year

### Kit Contents (cont.)

REF	P/N	QTY	DESCRIPTION
Bag #3 of 3 includes H			
H	6MJ-6FJS-6MJ	3	Adapter, Hyd. Run Tee - #6 JIC
I	60674	1	Hose, Hyd. - 1/4" x 104", #6femJICswiv x #6femJICswiv 90EL
J	60675	1	Hose, Hyd. - 1/4" x 190", #6femJICswiv x #6femJICswiv 90EL
K	60676	1	Hose, Hyd. - 3/8" x 10", #6maleJIC x #6femJICswivel
L	60644	1	Hose, Hyd. - 3/8" x 40", #6femJICswiv x #6femJICswiv90EL
M	60576	1	Hose, Hyd. - 3/8" x 36", #6femJICswiv Both Ends
N	AB679	1	Cable, E-Drive Interface - 15 ft.
	TS-11HD	20	Tie Strap, 11" Heavy Duty
	60195	1	Decal, "Outback Equipped" - reverse printed