

**Case Drain
&
Motor Return
Tractor Connection Guide
For
Great Plains YP Planters and Air Drills**



**This Guide Contains
Information For Connecting
Great Plains YP Planters and Air Drills
With Continuous Flow Fan Motors to
John Deere,
Case-IH, New Holland,
Massey, AGCO, Challenger, & Fendt
Tractors**



Current revisions of this Case Drain & Motor Return Tractor Connection Guide are posted on the Great Plains Mfg public website under:

www.greatplainsmfg.com/support/servicedocuments.html

and

www.greatplainsmfg.com/manuals/plantermanuals.html

and

www.greatplainsmfg.com/manuals/mintillmanuals.html

and

www.greatplainsmfg.com/manuals/notillmanuals.html

Make sure you are using the most current revision of the guide. The date of the revision is shown at the bottom of each page.

CDMR 08/27/10

Explanation

Early production YP Planters and Air Drills were not manufactured with fan motors that utilized a case drain connection. If there are only two lines connected to the fan motor, then the case drain connection is not utilized. If there are three hoses connected to the fan motor, then case drain is utilized.

The purpose of this guide is to show the port locations for connecting case drain and motor return for Great Plains YP Planters and Air Drills that utilize continuous flow fan motors. The information obtained for this guide was taken directly from the tractor manufacturer's information that is available on-line and through tractor dealers.

Since tractor equipment and options vary, the connections shown in this guide must be verified through the tractor manufacturer or dealer to prevent damage to the tractor and implement hydraulic systems.

Great Plains continuous flow fan motors require case drain and motor return lines to protect the motor during use. The case drain line must be connected first, then connect motor return line before connecting the pressure line. Failure to do so can cause damage to the motor seals. When disconnecting, always disconnect pressure, then motor return, and case drain last.

ALWAYS Connect

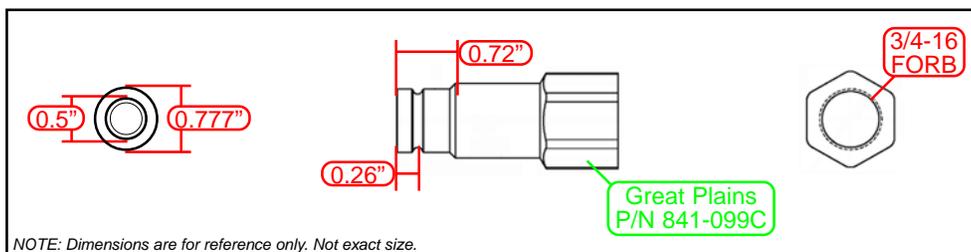
Case Drain First
Motor Return Second
Fan Pressure Last

ALWAYS Disconnect

Fan Pressure First
Motor Return Second
Case Drain Last

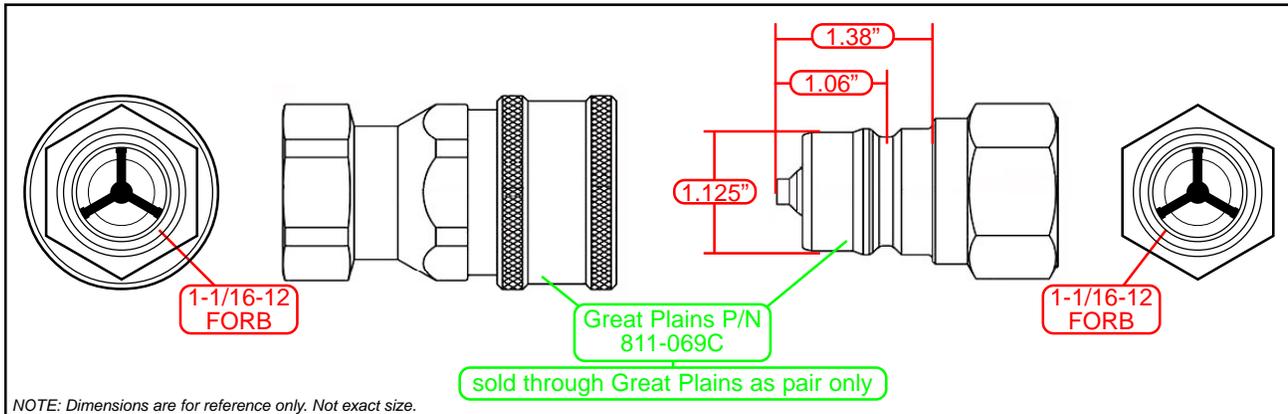
Case Drain

This connection is required to carry the motor case internal leakage directly to the tractor hydraulic reservoir (sump) with *zero pressure*. This oil serves to lubricate and cool motor components not directly exposed to the working oil. Great Plains supplies a 3/8" body size ISO 16028 zero pressure flat face case drain male coupler on a 1/4" hydraulic hose for the fan case drain line. It is normal to have seepage from this fitting when disconnected from the tractor to protect the motor seals from thermal expansion. If the tractor is not equipped with a female flat face case drain coupler, then it must be sourced through a tractor dealer or hydraulic supplier.



Motor Return

This connection is required to carry the *low pressure return* oil from the motor to the hydraulic reservoir or charge circuit. Using a motor return port prevents accidental reverse operation and possible flow checking of the return SCV coupling. Great Plains supplies a 3/4" body size ISO 7241-1 Series A male and female coupler with each YP planter and air drill. The male coupler is installed on the 1/2" or 5/8" motor return hydraulic hose from the factory. The mating female coupler must be connected to the tractor motor return port. The motor return hose and couplers are large to reduce back pressure to the motor.



Terminology

Agricultural manufacturer's use different terminology to describe case drain, motor return, power beyond pressure, and load sense. Below is a list of terms used to describe them:

Case Drain

Zero Pressure Return Motor Drain Motor Seal Drain Return Low Pressure Drain Return Low Flow Low Pressure Drain Free Return	Low Volume Sump Line Low Volume Case Drain Direct Outlet Pressure Sump Tank
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Motor Return

High Flow Low Pressure Return High Volume Hydraulic Motor Return High Volume Low Pressure Return Power Beyond Return	Tank Return Auxiliary Return Sump
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Below is a list of abbreviations used in this guide to describe types of fittings:

FORB	Female O-Ring Boss
FORFS	Female O-Ring Face Seal
MORB	Male O-Ring Boss
FJIC	Female JIC
MJIC	Male JIC
DIN	Deutsch (German) Industrial Norm
BSP	British Standard Parallel Pipe

Great Plains Manufacturing reserves the right to make changes or to add improvements to this guide at any time without notice or obligation.

Tractor Requirements

Tractors connected to YP Planters and Air Drills must meet the following requirements:

1. LS Closed or PC Closed hydraulic systems with a case drain connection and a motor return connection. Open Center hydraulic systems **MUST NOT** be used.
2. Verify the tractor Hp meets the requirements listed in the Specification section of the planter or drill Operator's Manual before connecting.

Tractors Equipped with Additional Accessories Connected to Case Drain and/or Motor Return

Some tractors may be equipped with additional accessories that connect to power beyond connections on the rear of the tractor (i.e. auto steering). If the case drain and motor return connections are already in use, then tee's can be installed to add connections.

IMPORTANT!

DO NOT tee case drain into motor return. Case drain must have zero pressure return. Great Plains warranty will be voided if case drain has been connected and/or teed to a motor return line. Case drain should only be returned directly to the hydraulic reservoir. The case drain line must utilize an ISO 16028 coupler that will allow seepage due to thermal expansion when disconnected from the tractor.

If tractor case drain circuit is filtered, it is necessary to make sure to have a clean filter to prevent excessive case pressure. High case pressure will cause motor seal failure.

DO NOT connect the fan motor to power beyond pressure. Continuous flow through the power beyond will deprive the tractor rear differential and pto drive gears of hydraulic flow and cause damage to the tractor.

Some tractor manufacturer's have chosen to use the same type coupler for power beyond load sense lines as for case drain lines. It is very important that these not be confused to prevent motor seal damage. **DO NOT** connect the case drain hose to a power beyond load sense coupler.

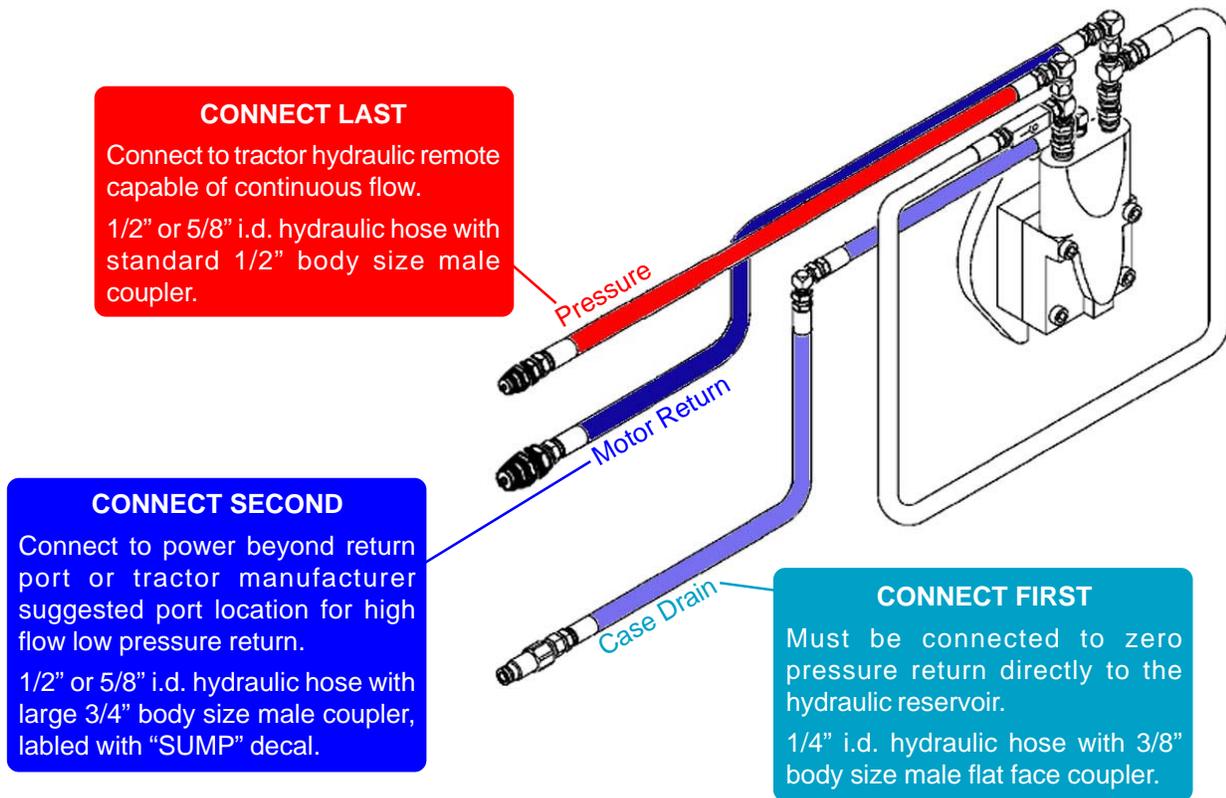
Some tractor manufacturer's recommend running motor return through a tractor SCV return port. **DO NOT** run motor return through a tractor SCV return port. Minimum pressure on most tractor SCV return ports is approximately 250 to 300 psi. Only connect motor return to a motor return port. Motor return ports allow pressures less than 50 psi, which prolongs motor seal life.

Failure to use the correct motor return port can cause oil starvation to the transmission pump and hydraulic charge circuit on some tractors. This is caused when oil is returned into the differential housing rather than the transmission or hydraulic charge circuit.

Make sure all hydraulic couplers and hose ends are clean before connecting.

Connecting Fan Motor to Tractor

Always connect case drain first, motor return second, then pressure line to prevent motor damage. Always disconnect pressure line first, motor return second, then case drain last to prevent motor damage.



Sourcing Adaptor Fittings

This guide lists part numbers for Eaton-Aeroquip and Parker hydraulic adaptor fittings since these two brands are widely used in North America. There are many other brands of hydraulic high pressure steel adaptor fittings available that can be used as long as the thread combinations match as shown in the illustrations. The part numbers listed can be used to cross reference with other brands if using a local hydraulic distributor or supplier.

Find your nearest **EATON-Aeroquip** hydraulic fittings and couplers distributor on-line at <http://web.fluidpower.eaton.com/public/distributorlocator/>

or

by calling toll free 888-258-0222

Find your nearest **Parker** hydraulic fittings and couplers distributor on-line at www.parker.com

or

by calling toll free 800-272-7537

Tractor Models

This guide lists suggestions for connecting case drain and motor return for John Deere, Case-IH, New Holland, Massey, AGCO, Challenger, & Fendt tractors. See the tables for each tractor manufacturer to find the models included in each series.



8010 & 8010T Series		8020 & 8020T Series		8030 & 8030T Series		8000R & 8000RT Series	
8110	8110T	8120	8120T	8130	-	8225R	-
8210	8210T	8220	8220T	8230	8230T	8245R	-
8310	8310T	8320	8320T	8330	8330T	8270R	-
8410	8410T	8420	8420T	8430	8430T	8295R	8295RT
		8520	8520T	8530	-	8320R	8320RT
						8345R	8345RT

9000 & 9000T Series		9020 & 9020T Series		9030 & 9030T Series	
9100	-	9120	-	9230	-
9200	-	9220	-	9330	-
9300	9300T	9320	9320T	9430	9430T
9400	9400T	9420	9420T	9530	9530T
		9520	9520T	9630	9630T
		9620	9620T		

Information for Tractor Models included on this page is listed on pages 1 through 12.

Tractor Models Continued



Puma Series	MX Series	Magnum Series	STX Series		Steiger Series	
165	MX210	180	STX275	-	335	-
180	MX215	190	STX280	-	380	-
195	MX230	210	STX325	-	385	385QT
210	MX245	215	STX330	-	430	-
225	MX255	225	STX375	STX375QT	435	435QT
	MX275	245	STX380	STX380QT	480	-
	MX285	275	STX425	STX425QT	485	485QT
	MX305	305	STX430	STX430QT	-	530QT
		335	STX440	STX440QT	535	535QT
			STX450	STX450QT		
			STX480	STX480QT		
			STX500	STX500QT		
			STX530	STX530QT		



T7000 Series	TG Series	T8000 Series	TJ Series	T9000 Series
T7030	TG210	T8010	TJ275	T9020
T7040	TG215	T8020	TJ280	T9030
T7050	TG230	T8030	TJ325	T9040
T7060	TG245	T8040	TJ330	T9050
T7070	TG255	T8050	TJ375	T9060
	TG275		TJ380	
	TG285		TJ425	
	TG305		TJ430	
			TJ450	
			TJ480	
			TJ500	
			TJ530	

Information for Tractor Models included on this page is listed on pages 13 through 18.

Tractor Models Continued



DTA Series	DTB Series
DT180A	DT205B
DT200A	DT225B
DT220A	DT250B
DT240A	DT275B

8400 Series	8600 Series
8450	8650
8460	8660
8470	8670
8480	8680

Challenger

MT600 Series	MT700 Series	MT800 Series	MT900 Series
MT635B	MT735	MT835	MT945B
MT645B	MT745	MT845	MT955B
MT655B	MT755	MT855	MT965B
MT665B	MT765	MT865	MT975B
MT645C	MT735B	MT835B	MT945C
MT655C	MT745B	MT845B	MT955C
MT665C	MT755B	MT855B	MT965C
MT675C	MT765B	MT865B	MT975C
MT685C	MT735C	MT875B	
	MT745C	MT835C	
	MT755C	MT845C	
	MT765C	MT855C	
		MT865C	
		MT875C	



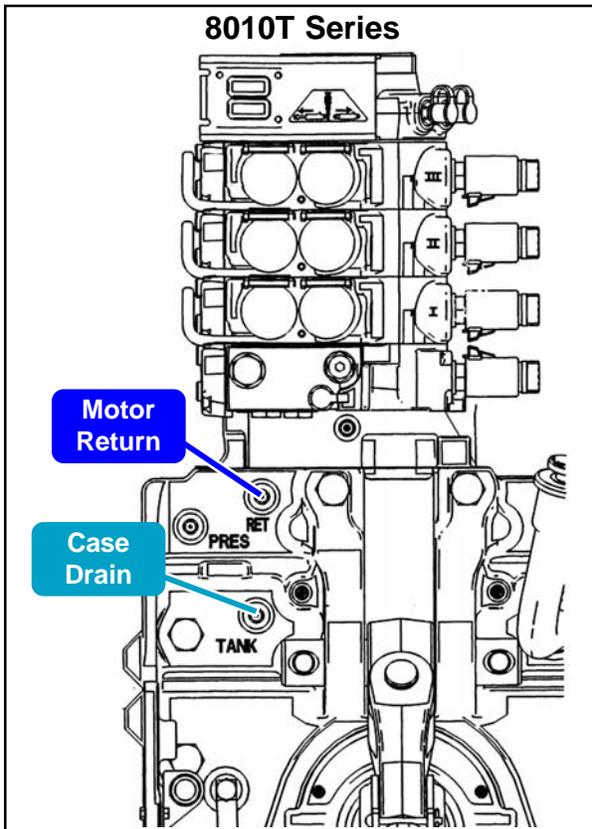
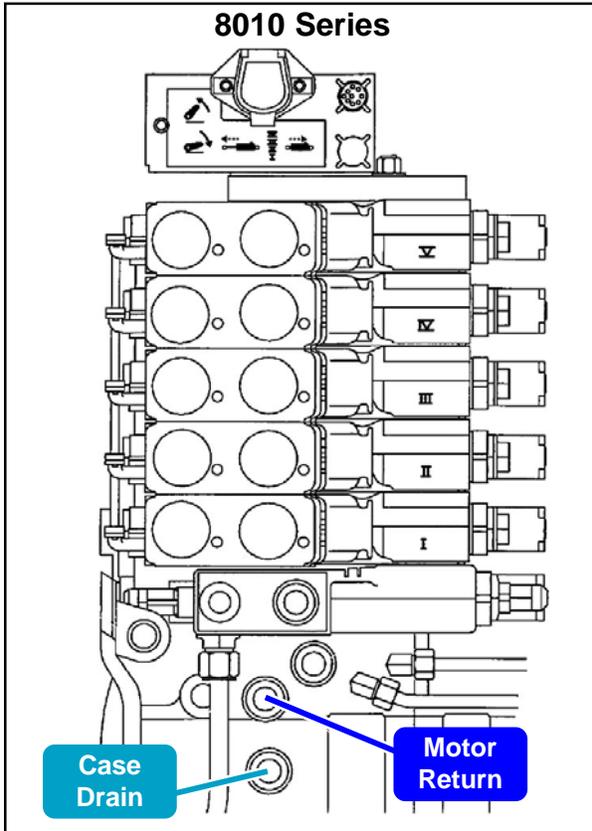
900 Vario Series (Com 3)
922
924
927
930
933
936

Information for Tractor Models included on this page is listed on pages 19 through 28.

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8010 & 8010T Series



Case Drain

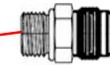
If the tractor is not equipped with a 3/8" body size ISO 16028 zero pressure female flat face case drain coupler, then order and install John Deere case drain kit part number RE222721.

Motor Return

If the tractor is not equipped with a 3/4" body size ISO 7241-1 Series A female motor return coupler, then order and install the following parts:

Eaton Aeroquip P/N GG108-NP12-22
Parker P/N 12M22F8OMXS

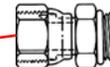
M22 x 1.5
MORB



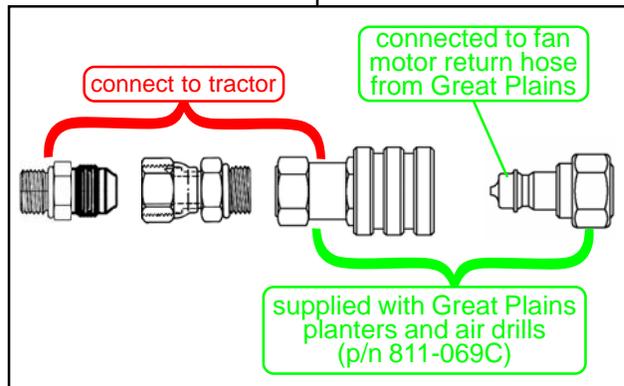
1-1/16-12
MJIC

Eaton Aeroquip P/N 2266-12-12
Parker P/N 12F65OMXS

1-1/16-12
FJIC



1-1/16-12
MORB



IMPORTANT: ALWAYS connect case drain first, motor return second, then pressure line to prevent motor damage. ALWAYS disconnect pressure line first, motor return second, then case drain last to prevent motor damage.

NOTE: Can use John Deere P/N RE248312 to extend case drain coupler and motor return coupler out from rear of tractor if needed.

John Deere P/N RE248312

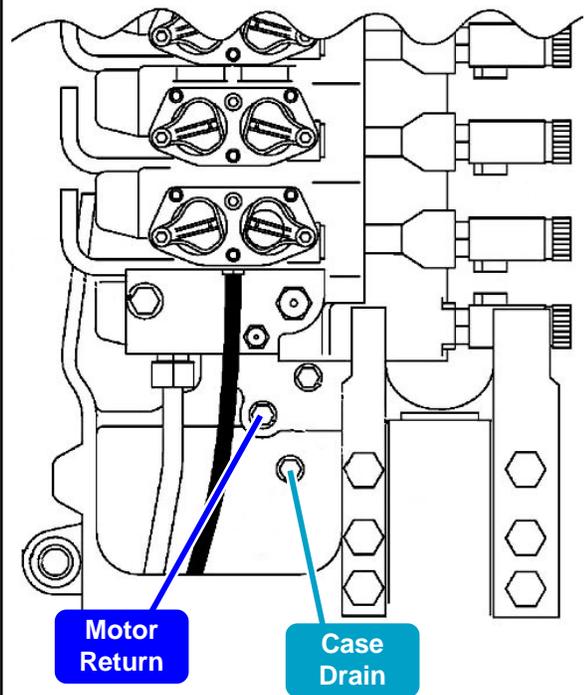
M22 x 1.5
MORB



M22 x 1.5
FORB

8020 & 8020T Series

8020 Series



Case Drain

If the tractor is not equipped with a 3/8" body size ISO 16028 zero pressure female flat face case drain coupler, then order and install John Deere case drain kit part number RE222721.

Motor Return

If the tractor is not equipped with a 3/4" body size ISO 7241-1 Series A female motor return coupler, then order and install the following parts:

Eaton Aeroquip P/N GG108-NP12-22
Parker P/N 12M22F8OMXS

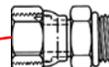
M22 x 1.5
MORB



1-1/16-12
MJIC

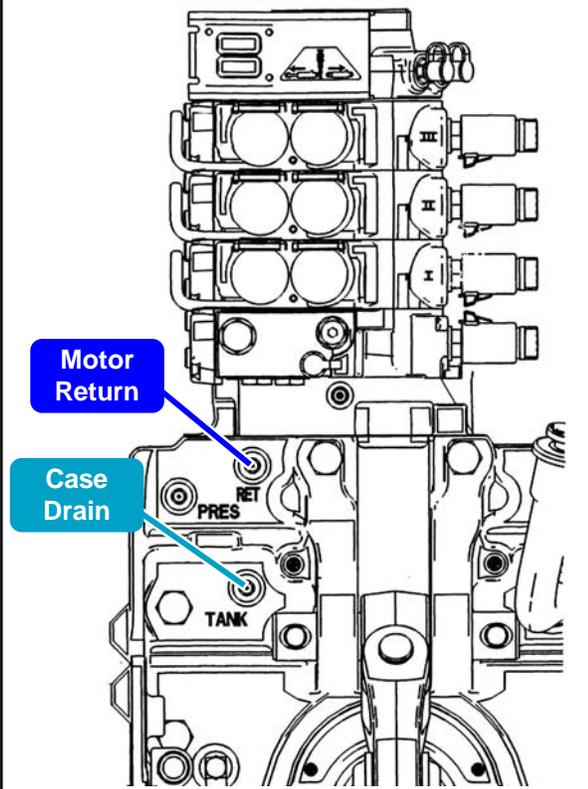
Eaton Aeroquip P/N 2266-12-12
Parker P/N 12F65OMXS

1-1/16-12
FJIC



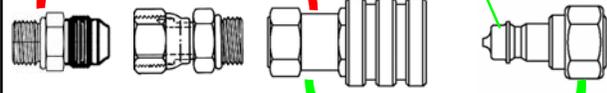
1-1/16-12
MORB

8020T Series



connect to tractor

connected to fan
motor return hose
from Great Plains



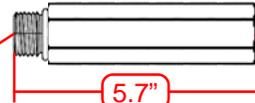
supplied with Great Plains
planters and air drills
(p/n 811-069C)

IMPORTANT: ALWAYS connect case drain first, motor return second, then pressure line to prevent motor damage. ALWAYS disconnect pressure line first, motor return second, then case drain last to prevent motor damage.

NOTE: Can use John Deere P/N RE248312 to extend case drain coupler and motor return coupler out from rear of tractor if needed.

John Deere P/N RE248312

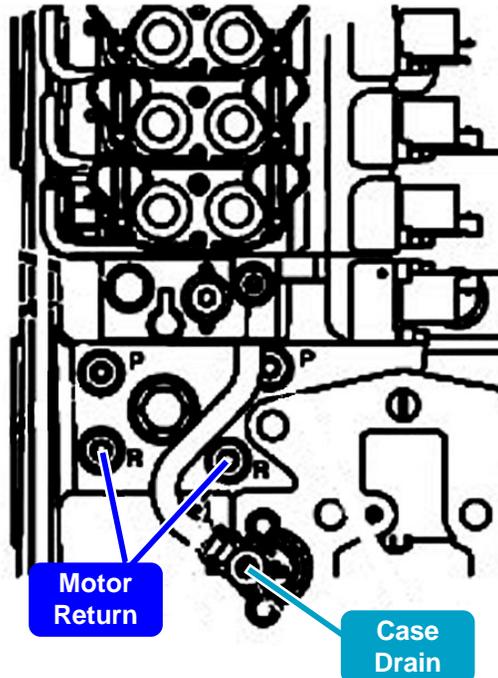
M22 x 1.5
MORB



M22 x 1.5
FORB

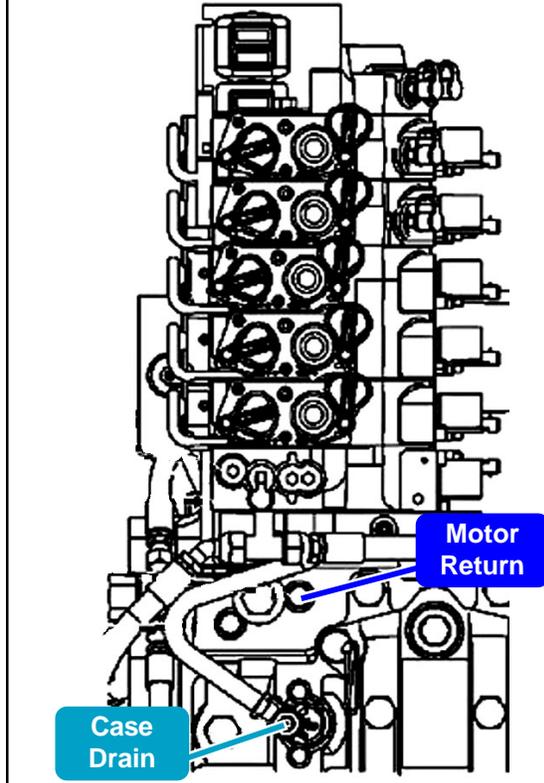
8030 & 8030T Series

8030 Series



NOTE: Two possible motor return port locations are shown.

8030T Series



Case Drain

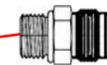
If the tractor is not equipped with a 3/8" body size ISO 16028 zero pressure female flat face case drain coupler, then order and install John Deere case drain kit part number RE222721.

Motor Return

If the tractor is not equipped with a 3/4" body size ISO 7241-1 Series A female motor return coupler, then order and install the following parts:

Eaton Aeroquip P/N GG108-NP12-22
Parker P/N 12M22F8OMXS

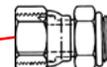
M22 x 1.5
MORB



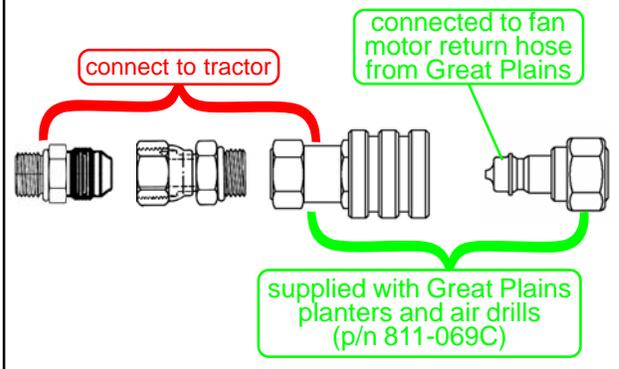
1-1/16-12
MJIC

Eaton Aeroquip P/N 2266-12-12
Parker P/N 12F65OMXS

1-1/16-12
FJIC



1-1/16-12
MORB



IMPORTANT: ALWAYS connect case drain first, motor return second, then pressure line to prevent motor damage. ALWAYS disconnect pressure line first, motor return second, then case drain last to prevent motor damage.

NOTE: Can use John Deere P/N RE248312 to extend case drain coupler and motor return coupler out from rear of tractor if needed.

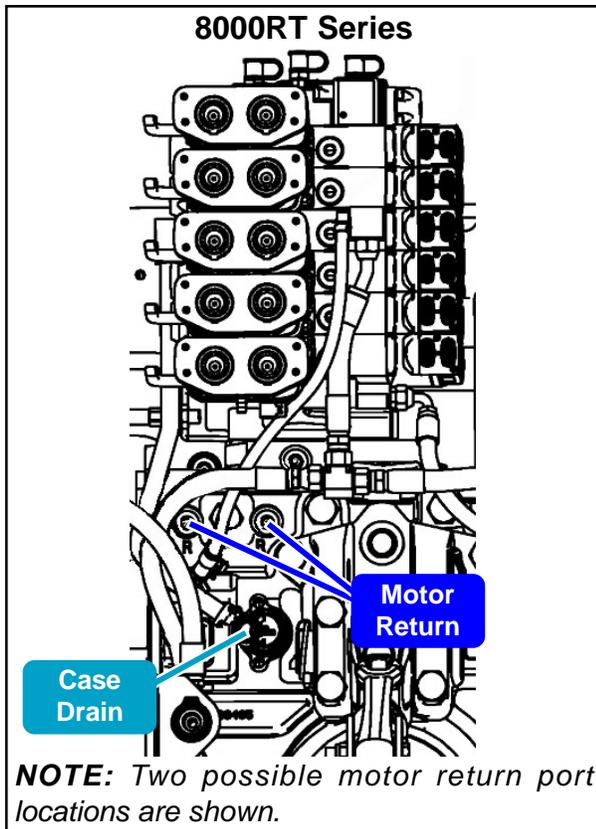
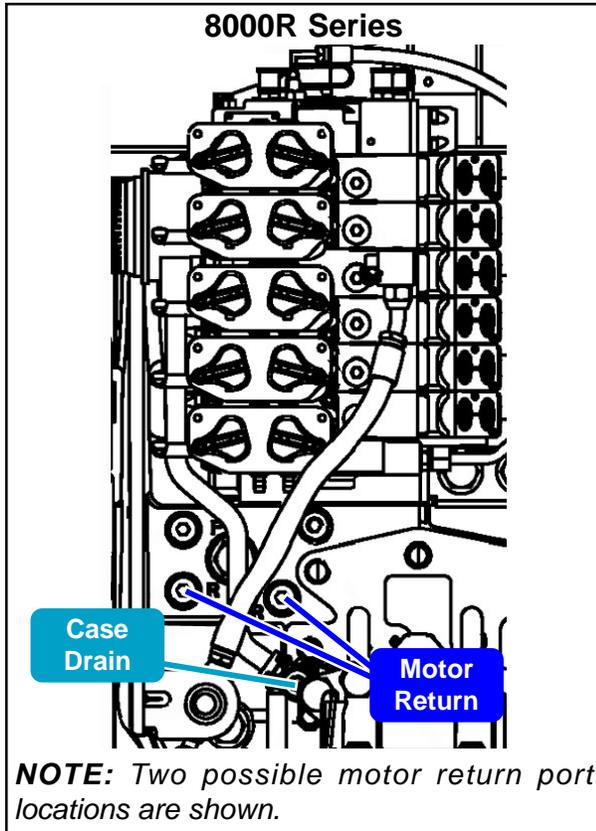
John Deere P/N RE248312

M22 x 1.5
MORB



M22 x 1.5
FORB

8000R & 8000RT Series



Case Drain

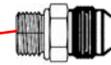
If the tractor is not equipped with a 3/8" body size ISO 16028 zero pressure female flat face case drain coupler, then order and install John Deere case drain kit part number RE222721.

Motor Return

If the tractor is not equipped with a 3/4" body size ISO 7241-1 Series A female motor return coupler, then order and install the following parts:

Eaton Aeroquip P/N GG108-NP12-22
Parker P/N 12M22F8OMXS

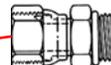
M22 x 1.5
MORB



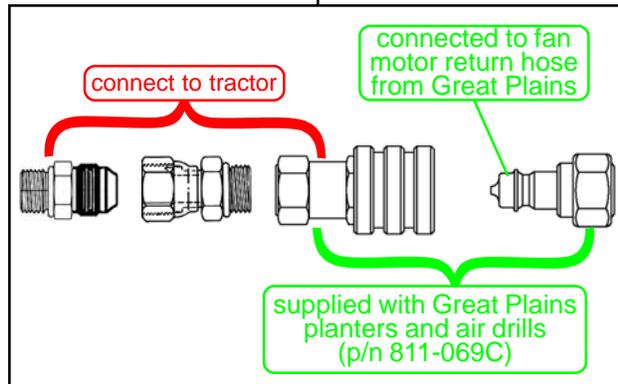
1-1/16-12
MJIC

Eaton Aeroquip P/N 2266-12-12
Parker P/N 12F65OMXS

1-1/16-12
FJIC



1-1/16-12
MORB



IMPORTANT: ALWAYS connect case drain first, motor return second, then pressure line to prevent motor damage. ALWAYS disconnect pressure line first, motor return second, then case drain last to prevent motor damage.

NOTE: Can use John Deere P/N RE248312 to extend case drain coupler and motor return coupler out from rear of tractor if needed.

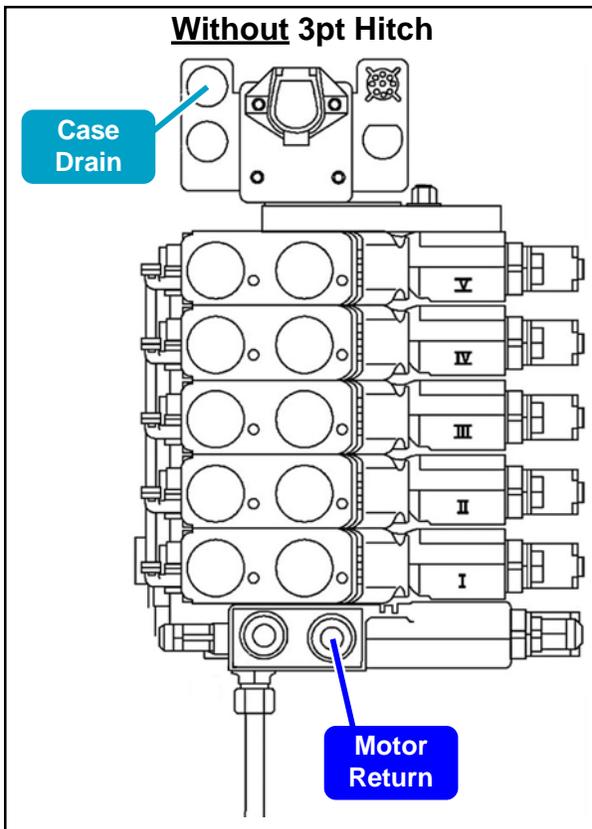
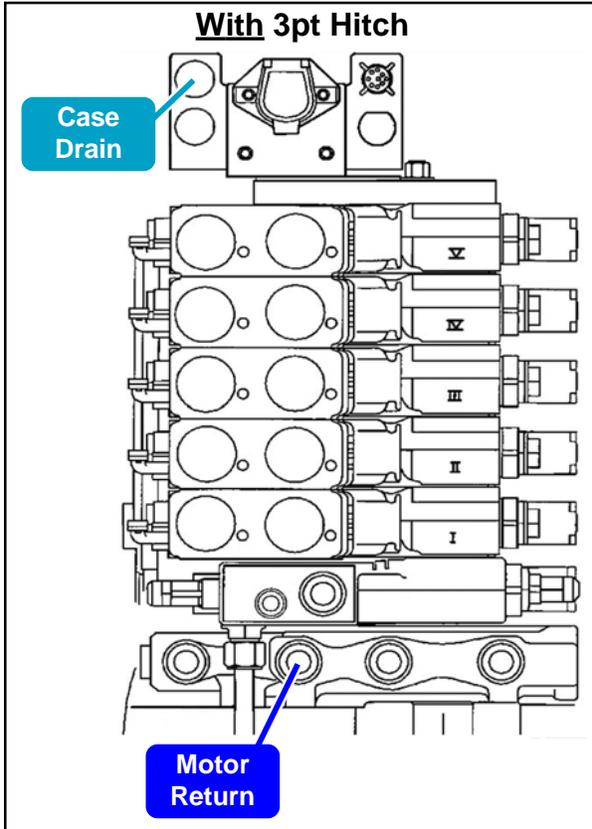
John Deere P/N RE248312

M22 x 1.5
MORB



M22 x 1.5
FORB

9000 & 9000T Series



Case Drain

If the tractor is not equipped with a 3/8" body size ISO 16028 zero pressure female flat face case drain coupler, then order and install John Deere case drain kit part number RE218665.

Motor Return

If the tractor is not equipped with a 3/4" body size ISO 7241-1 Series A female motor return coupler, then order and install the following parts:

Eaton Aeroquip P/N GG108-NP12-22
Parker P/N 12M22F8OMXS

M22 x 1.5
MORB



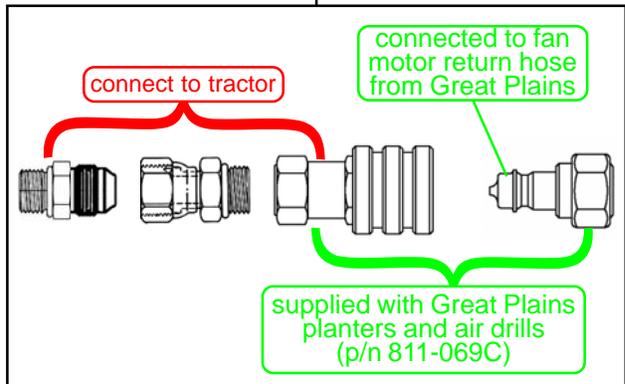
1-1/16-12
MJIC

Eaton Aeroquip P/N 2266-12-12
Parker P/N 12F65OMXS

1-1/16-12
FJIC

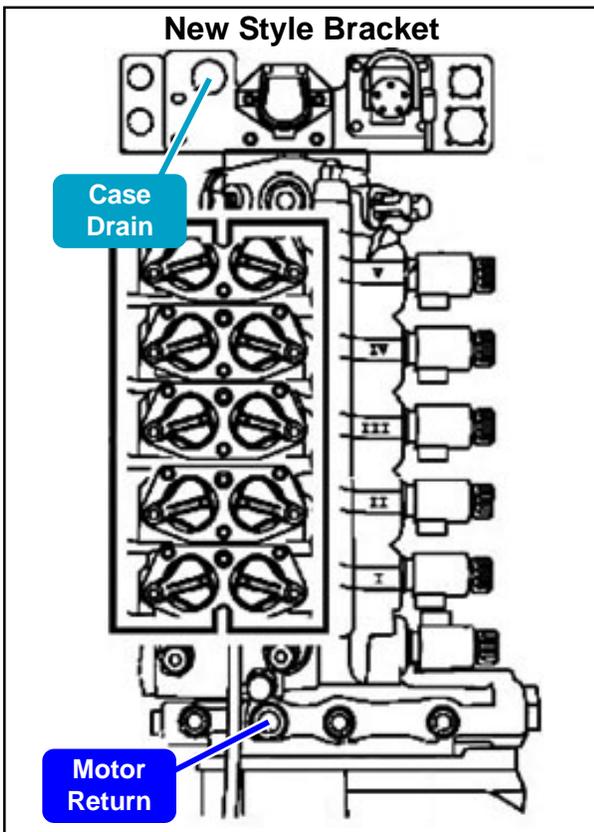
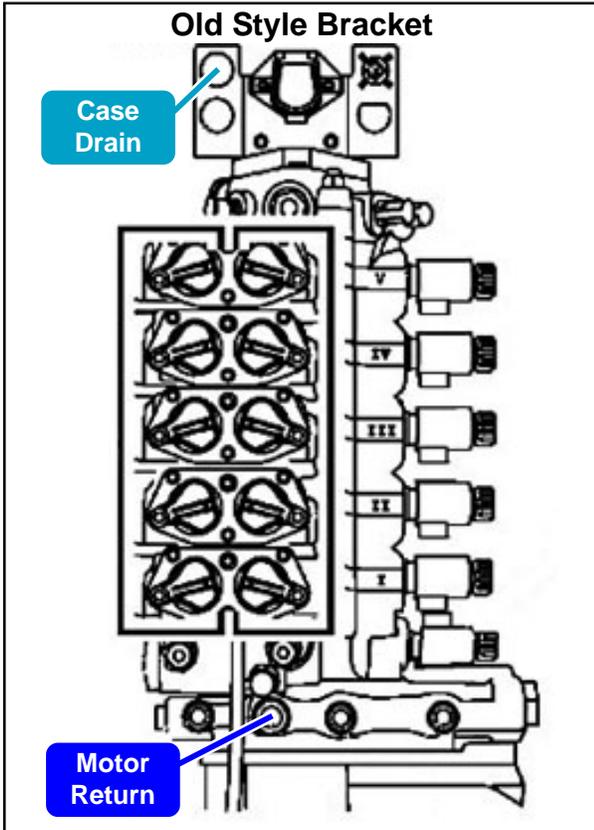


1-1/16-12
MORB



IMPORTANT: ALWAYS connect case drain first, motor return second, then pressure line to prevent motor damage. **ALWAYS disconnect** pressure line first, motor return second, then case drain last to prevent motor damage.

9020 & 9020T Series (With 3pt Hitch)



Case Drain

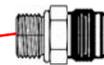
If the tractor is not equipped with a 3/8" body size ISO 16028 zero pressure female flat face case drain coupler, then order and install John Deere case drain kit part number RE218665.

Motor Return

If the tractor is not equipped with a 3/4" body size ISO 7241-1 Series A female motor return coupler, then order and install the following parts:

Eaton Aeroquip P/N GG108-NP12-22
Parker P/N 12M22F8OMXS

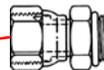
M22 x 1.5
MORB



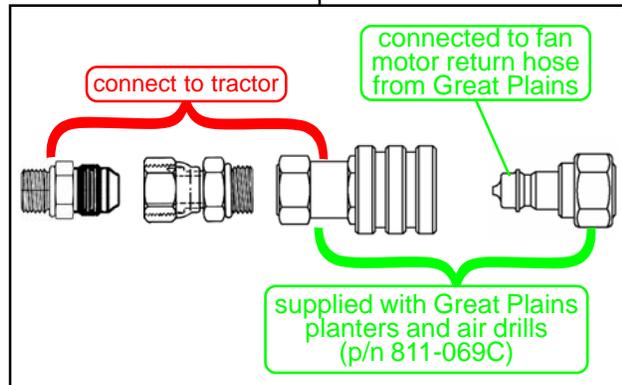
1-1/16-12
MJIC

Eaton Aeroquip P/N 2266-12-12
Parker P/N 12F65OMXS

1-1/16-12
FJIC

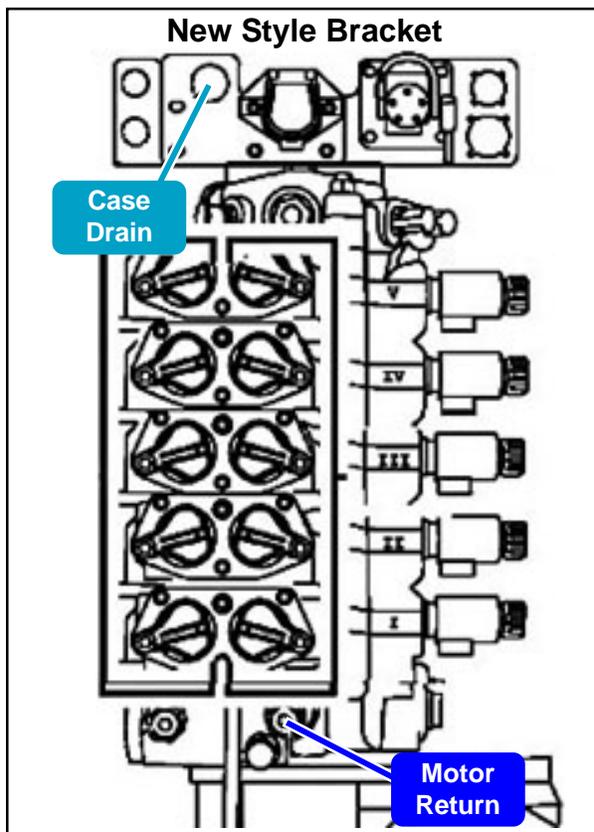
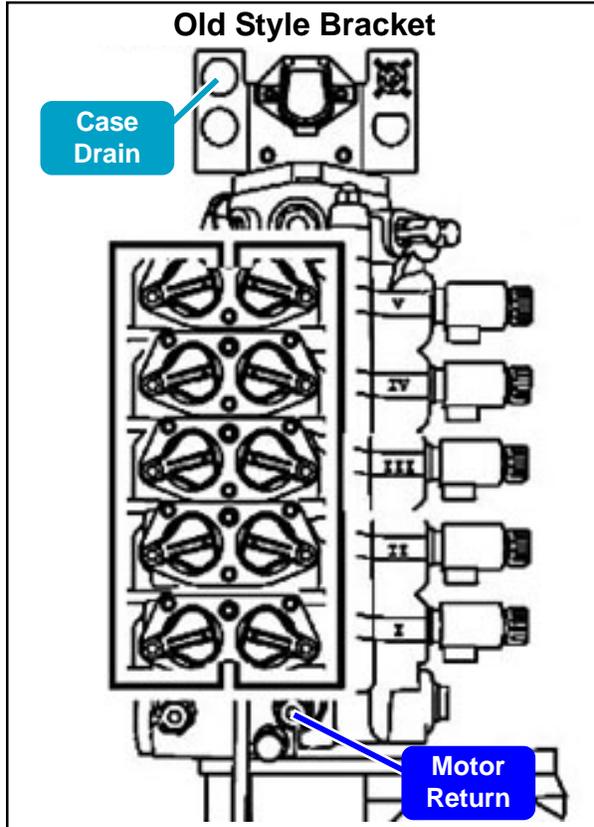


1-1/16-12
MORB



IMPORTANT: ALWAYS connect case drain first, motor return second, then pressure line to prevent motor damage. ALWAYS disconnect pressure line first, motor return second, then case drain last to prevent motor damage.

9020 & 9020T Series (Without 3pt Hitch)



Case Drain

If the tractor is not equipped with a 3/8" body size ISO 16028 zero pressure female flat face case drain coupler, then order and install John Deere case drain kit part number RE218665.

Motor Return

If the tractor is not equipped with a 3/4" body size ISO 7241-1 Series A female motor return coupler, then order and install the following parts:

Eaton Aeroquip P/N GG108-NP12-22
Parker P/N 12M22F8OMXS

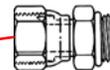
M22 x 1.5
MORB



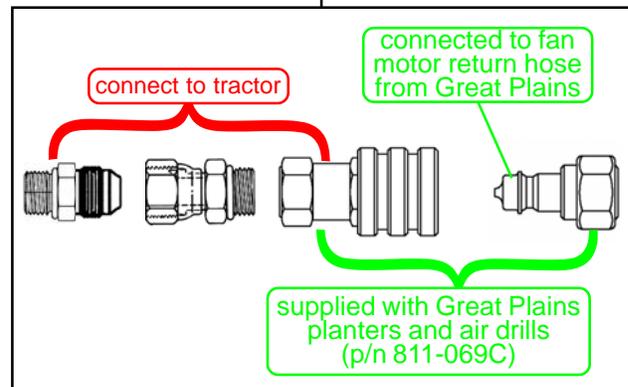
1-1/16-12
MJIC

Eaton Aeroquip P/N 2266-12-12
Parker P/N 12F65OMXS

1-1/16-12
FJIC



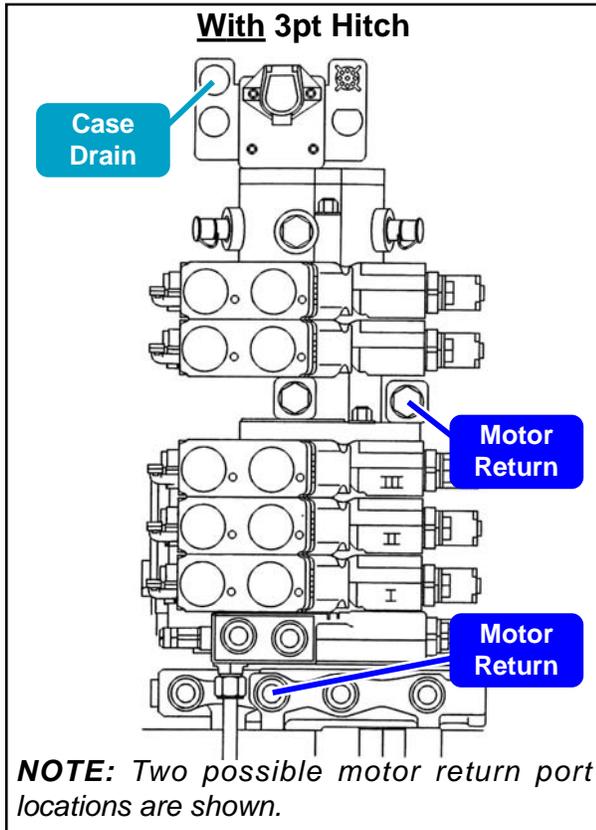
1-1/16-12
MORB



IMPORTANT: ALWAYS connect case drain first, motor return second, then pressure line to prevent motor damage. **ALWAYS disconnect** pressure line first, motor return second, then case drain last to prevent motor damage.

9020 Series *High Flow* (With & Without 3pt Hitch)

With 3pt Hitch



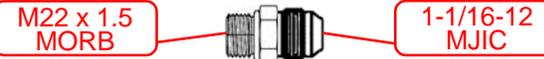
Case Drain

If the tractor is not equipped with a 3/8" body size ISO 16028 zero pressure female flat face case drain coupler, then order and install John Deere case drain kit part number RE218665.

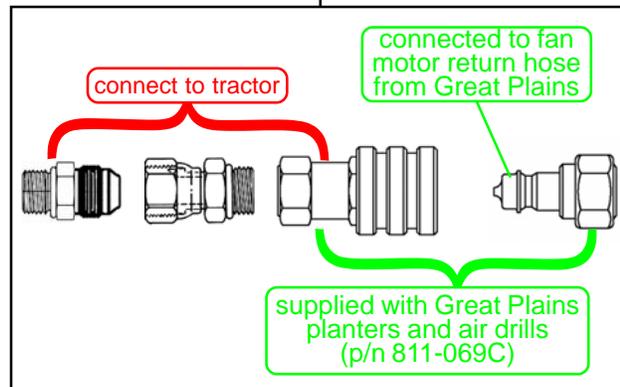
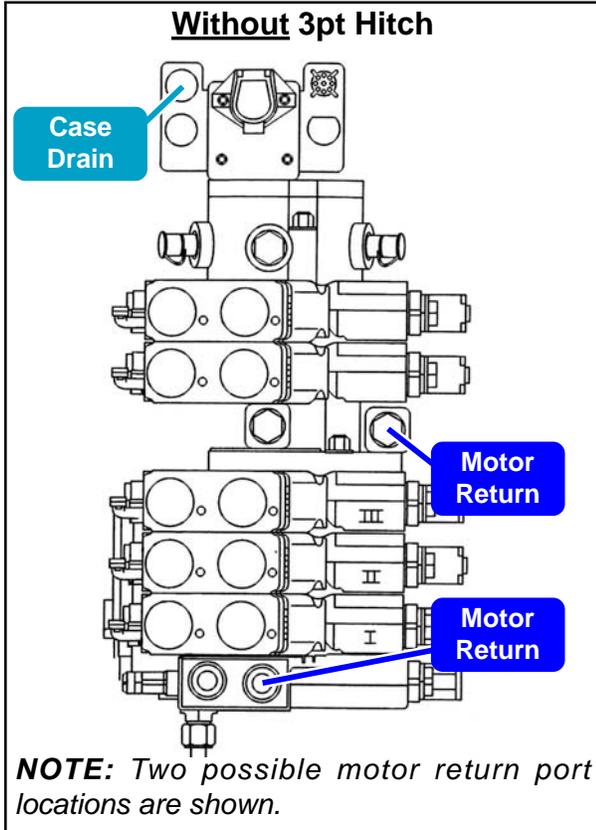
Motor Return

If the tractor is not equipped with a 3/4" body size ISO 7241-1 Series A female motor return coupler, then order and install the following parts:

Eaton Aeroquip P/N GG108-NP12-22
Parker P/N 12M22F8OMXS



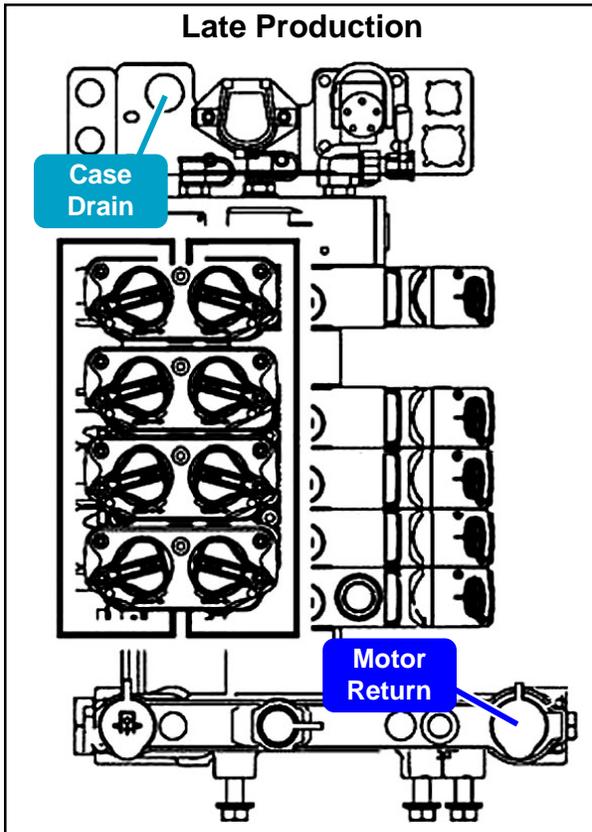
Eaton Aeroquip P/N 2266-12-12
Parker P/N 12F65OMXS



IMPORTANT: *ALWAYS connect* case drain first, motor return second, then pressure line to prevent motor damage. *ALWAYS disconnect* pressure line first, motor return second, then case drain last to prevent motor damage.

9030 & 9030T Series (With 3pt Hitch)

Late Production



Case Drain

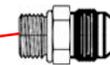
If the tractor is not equipped with a 3/8" body size ISO 16028 zero pressure female flat face case drain coupler, then order and install John Deere case drain kit part number RE218665.

Motor Return

If the tractor is not equipped with a 3/4" body size ISO 7241-1 Series A female motor return coupler, then order and install the following parts:

Eaton Aeroquip P/N GG108-NP12-22
Parker P/N 12M22F8OMXS

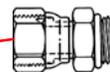
M22 x 1.5
MORB



1-1/16-12
MJIC

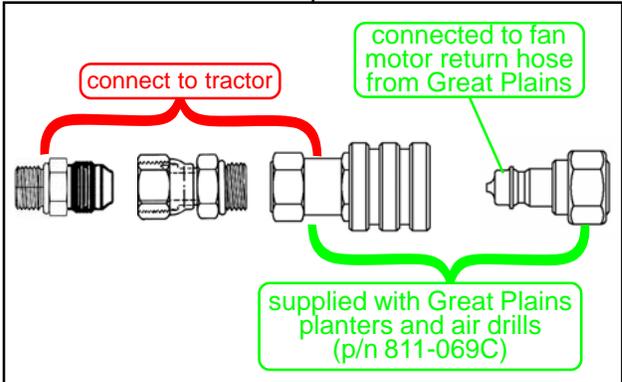
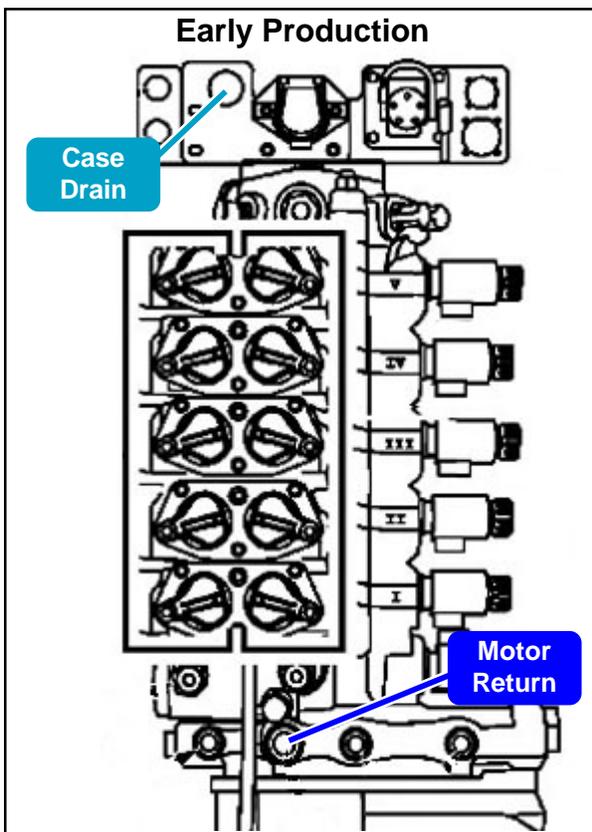
Eaton Aeroquip P/N 2266-12-12
Parker P/N 12F65OMXS

1-1/16-12
FJIC



1-1/16-12
MORB

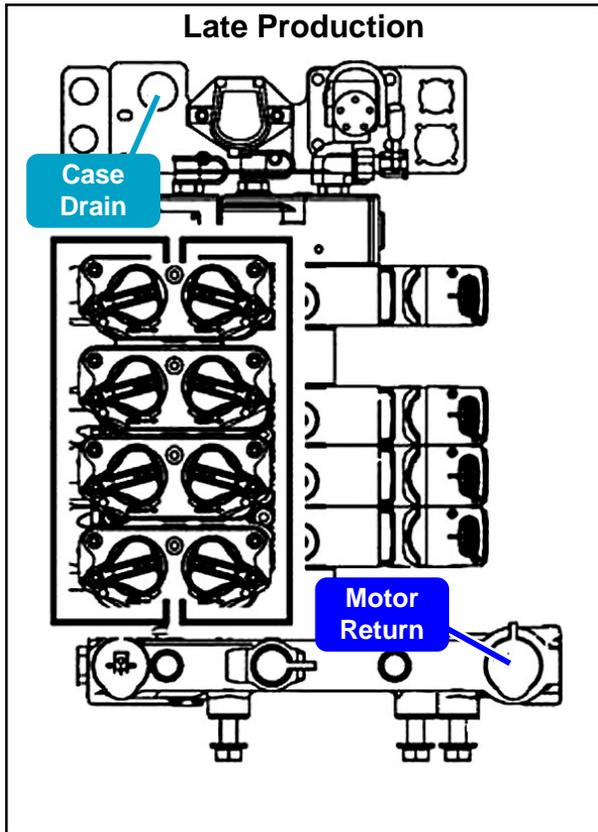
Early Production



IMPORTANT: ALWAYS connect case drain first, motor return second, then pressure line to prevent motor damage. ALWAYS disconnect pressure line first, motor return second, then case drain last to prevent motor damage.

9030 & 9030T Series (Without 3pt Hitch)

Late Production



Case Drain

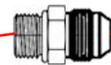
If the tractor is not equipped with a 3/8" body size ISO 16028 zero pressure female flat face case drain coupler, then order and install John Deere case drain kit part number RE218665.

Motor Return

If the tractor is not equipped with a 3/4" body size ISO 7241-1 Series A female motor return coupler, then order and install the following parts:

Eaton Aeroquip P/N GG108-NP12-22
Parker P/N 12M22F8OMXS

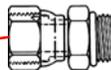
M22 x 1.5
MORB



1-1/16-12
MJBIC

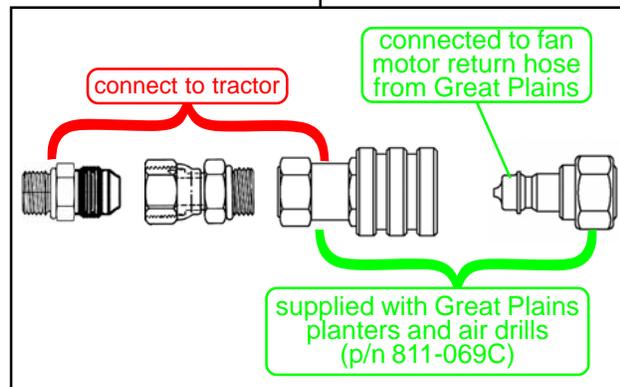
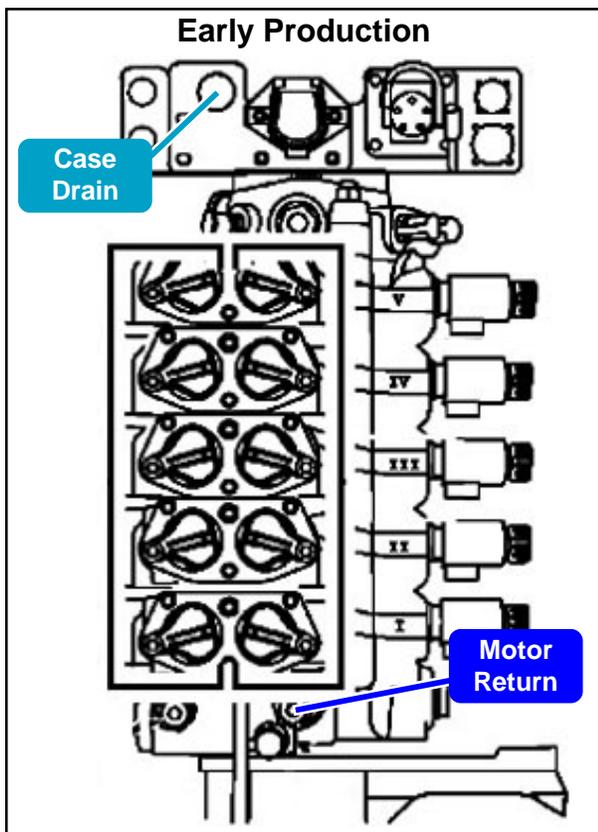
Eaton Aeroquip P/N 2266-12-12
Parker P/N 12F65OMXS

1-1/16-12
FJIC



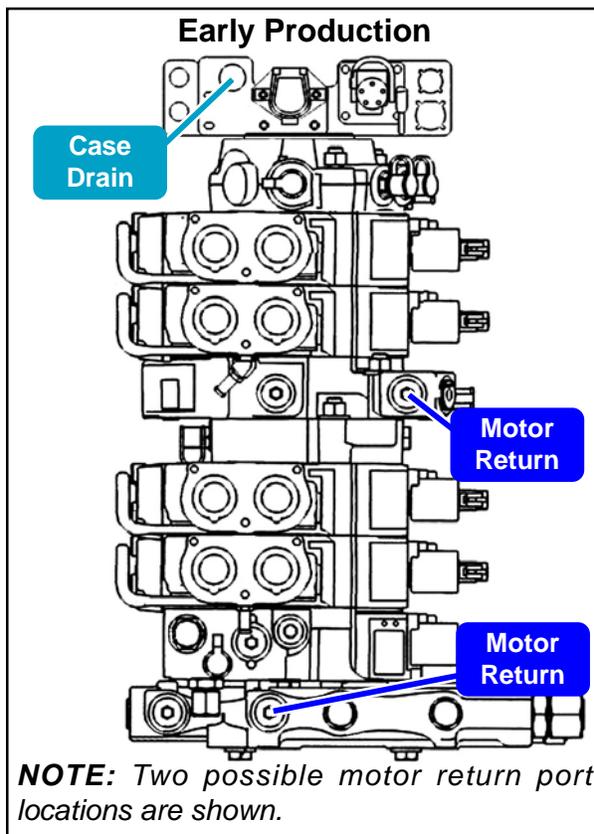
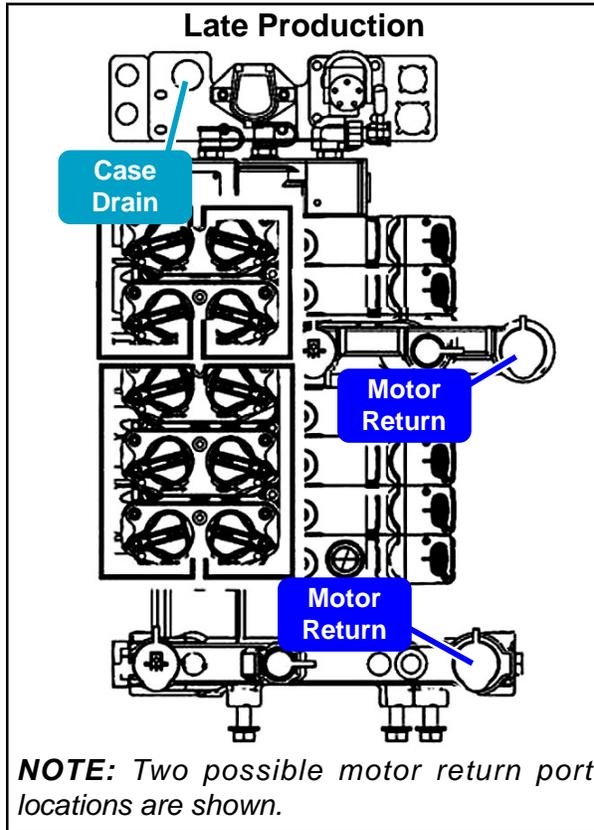
1-1/16-12
MORB

Early Production



IMPORTANT: ALWAYS connect case drain first, motor return second, then pressure line to prevent motor damage. **ALWAYS disconnect** pressure line first, motor return second, then case drain last to prevent motor damage.

9030 Series *High Flow* (With 3pt Hitch)



Case Drain

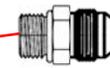
If the tractor is not equipped with a 3/8" body size ISO 16028 zero pressure female flat face case drain coupler, then order and install John Deere case drain kit part number RE218665.

Motor Return

If the tractor is not equipped with a 3/4" body size ISO 7241-1 Series A female motor return coupler, then order and install the following parts:

Eaton Aeroquip P/N GG108-NP12-22
Parker P/N 12M22F8OMXS

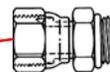
M22 x 1.5
MORB



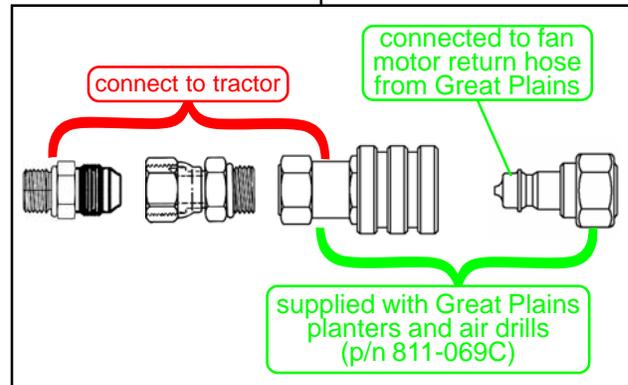
1-1/16-12
MJIC

Eaton Aeroquip P/N 2266-12-12
Parker P/N 12F65OMXS

1-1/16-12
FJIC

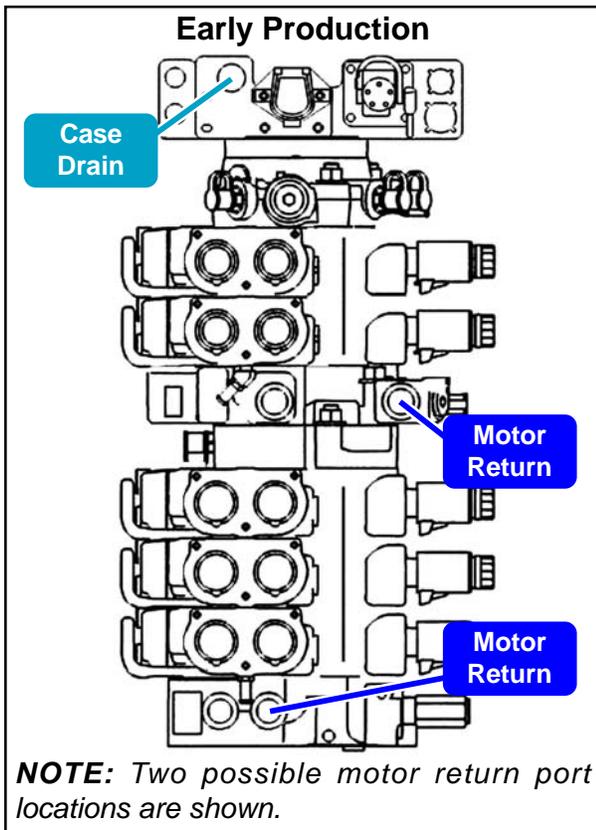
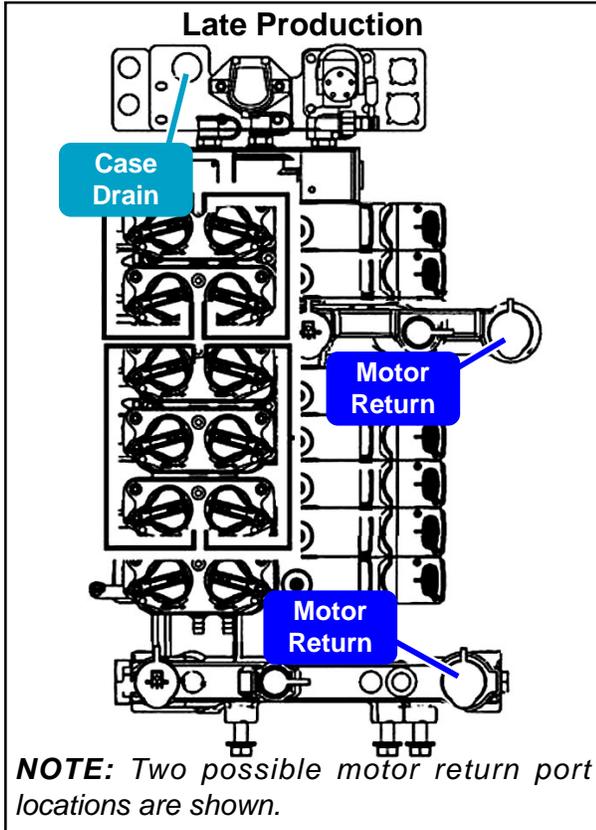


1-1/16-12
MORB



IMPORTANT: ALWAYS connect case drain first, motor return second, then pressure line to prevent motor damage. ALWAYS disconnect pressure line first, motor return second, then case drain last to prevent motor damage.

9030 Series *High Flow* (Without 3pt Hitch)

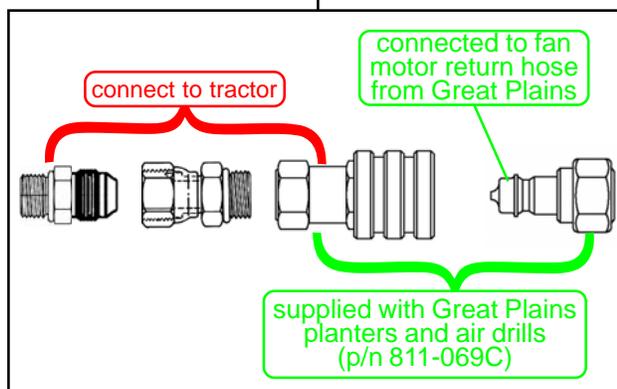
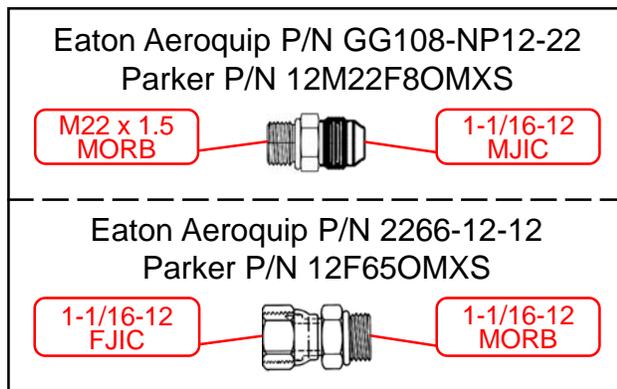


Case Drain

If the tractor is not equipped with a 3/8" body size ISO 16028 zero pressure female flat face case drain coupler, then order and install John Deere case drain kit part number RE218665.

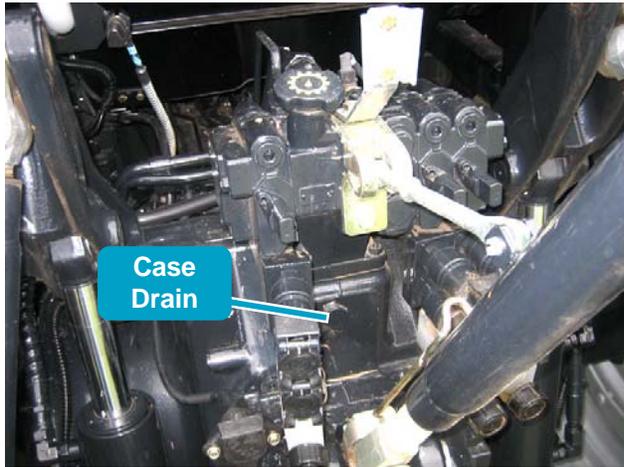
Motor Return

If the tractor is not equipped with a 3/4" body size ISO 7241-1 Series A female motor return coupler, then order and install the following parts:



IMPORTANT: ALWAYS connect case drain first, motor return second, then pressure line to prevent motor damage. ALWAYS disconnect pressure line first, motor return second, then case drain last to prevent motor damage.

**Puma 165, 180, 195, 210, & 225
T7000 Series**



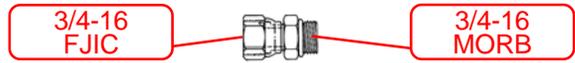
Case Drain

If the tractor is not equipped with a 3/8" body size ISO 16028 zero pressure female flat face case drain coupler, then order and install the following:

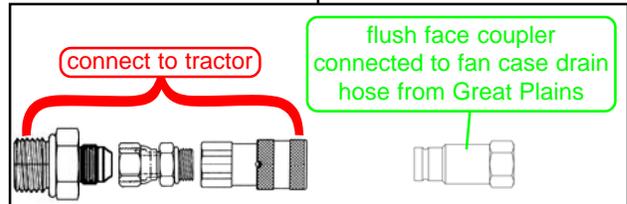
Eaton Aeroquip P/N GG106-NP08-12
Parker P/N 8-12F42EDMXS



Eaton Aeroquip P/N 2266-8-8S
Parker P/N 8F65OXS



CNH P/N 85999238
Eaton Aeroquip P/N FF-371-8FO

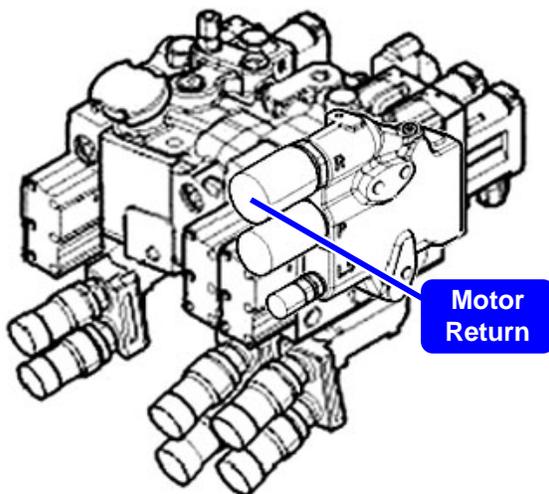


IMPORTANT: ALWAYS connect case drain first, motor return second, then pressure line to prevent motor damage. **ALWAYS disconnect** pressure line first, motor return second, then case drain last to prevent motor damage.

Motor Return

(with power beyond)

If tractor is equipped with power beyond, then connect motor return to coupler shown.

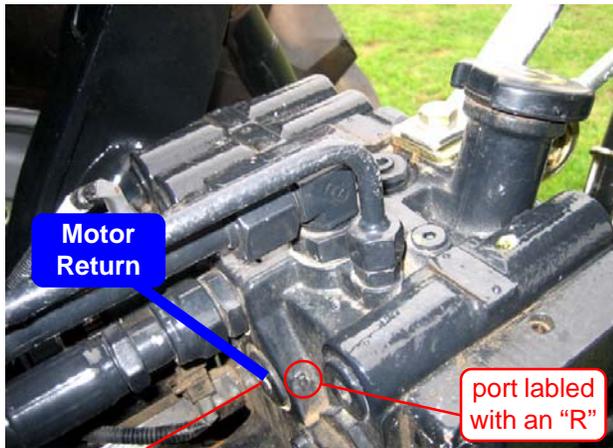


NOTE: See next page for information for motor return without power beyond.

**Puma 165, 180, 195, 210, & 225
T7000 Series
Continued**



rear of valve stack



Motor Return

port labeled with an "R"

front of valve stack

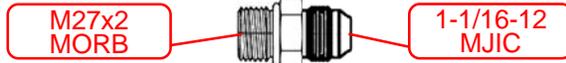
Motor Return

(without power beyond)

If tractor is not equipped with power beyond, then a plug will need to be removed from the front of the valve stack. The port is labeled with an "R" on the casting. Then install two adaptors, a hose, an adaptor, and coupler as shown.

Order and install the following:

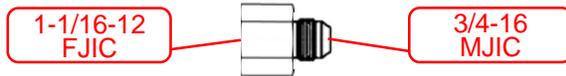
Eaton Aeroquip P/N GG108-NP12-27
Parker P/N 12M27F87OMXS



M27x2
MORB

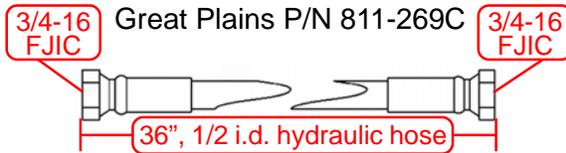
1-1/16-12
MJIC

Eaton Aeroquip P/N 221501-12-8S
Parker P/N 12-8TRTXS & 12BTX-S



1-1/16-12
FJIC

3/4-16
MJIC



3/4-16
FJIC

Great Plains P/N 811-269C

3/4-16
FJIC

36", 1/2 i.d. hydraulic hose

Eaton Aeroquip P/N 202702-12-8S
Parker P/N 8-12F5OMXS



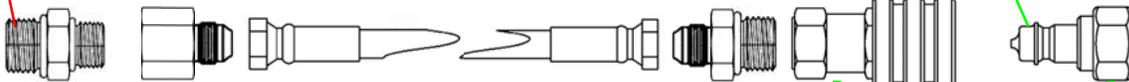
3/4-16
MJIC

1-1/16-12
MORB

connect to tractor

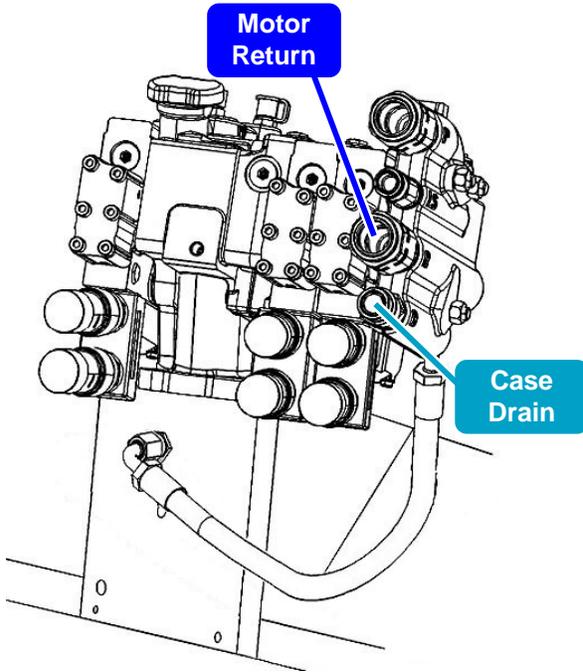
connected to fan motor return hose from Great Plains

supplied with Great Plains planters and air drills (p/n 811-069C)



NOTE: See previous page for information for motor return with power beyond.

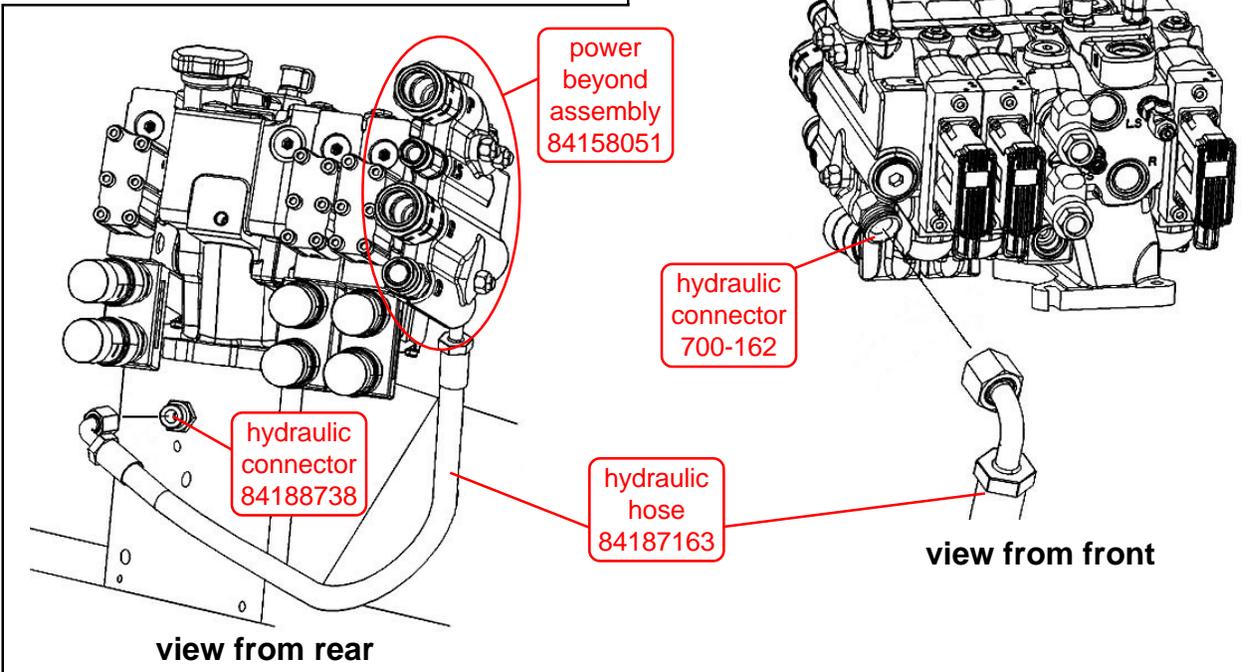
Magnum 180, 190, & 210



These tractor models must be equipped with optional power beyond to have case drain and motor return connections.

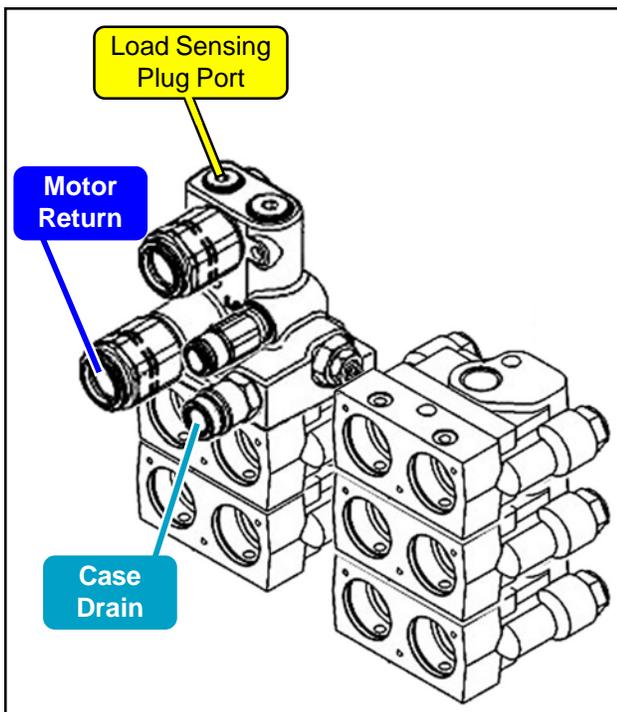
If the tractor is not equipped with power beyond, then order and install the following part numbers through a Case-IH and/or New Holland dealership to equip the tractor with the power beyond assembly:

Qty	P/N	Description
1	84158051	Power Beyond Assembly
1	84188738	Hydraulic Connector
1	84187163	Hydraulic Hose
1	700-162	Hydraulic Connector



IMPORTANT: ALWAYS connect case drain first, motor return second, then pressure line to prevent motor damage. ALWAYS disconnect pressure line first, motor return second, then case drain last to prevent motor damage.

**MX Series
Magnum 215, 245, 275, 305, & 335
TG & T800 Series**

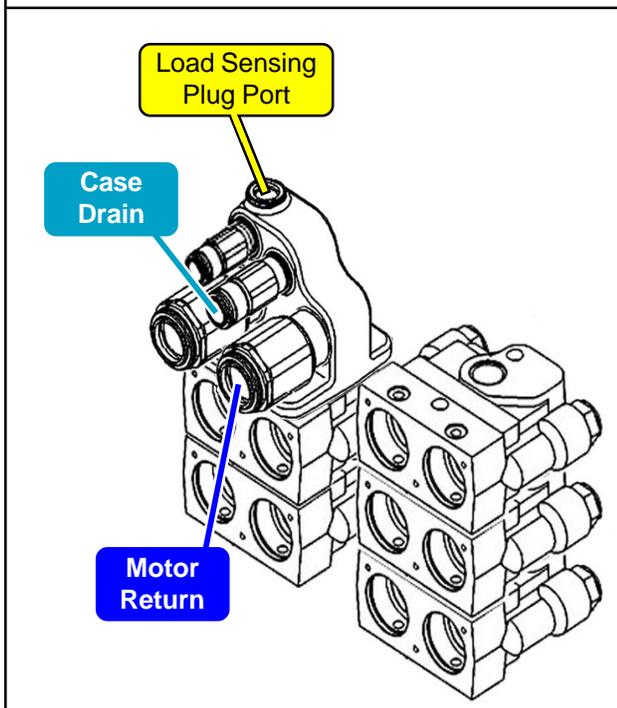


If tractor is equipped with power beyond, then use the couplers as shown for case drain and motor return.

If tractor is not equipped with power beyond, then plugs need to be removed and couplers need to be installed on the valve assembly as shown. Order and install the following couplers from a Case-IH and/or New Holland dealership to add case drain and motor return:

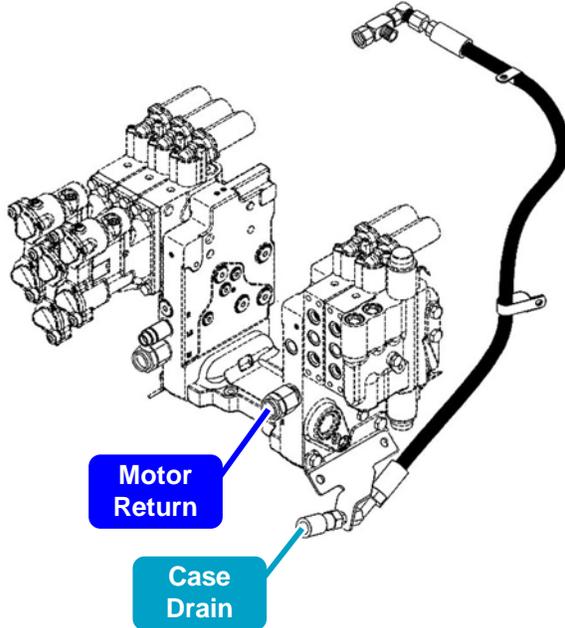
Case Drain Coupler (flush face)	380739A1
Motor Return Coupler	298291A1

The load sensing plug must be installed or tractor oil will overheat and damage to the pump can occur. The top plug must be removed to gain access to the load sensing plug. The load sensing plug is an internal plug in the passage between the power beyond pressure port and the load sense port.



IMPORTANT: ALWAYS connect case drain first, motor return second, then pressure line to prevent motor damage. **ALWAYS disconnect** pressure line first, motor return second, then case drain last to prevent motor damage.

STX
Steiger Series
TJ & T9000 Series
(shown with power beyond installed)



If the tractor is equipped with power beyond, then the case drain and motor return couplers are already installed. Connect as shown.

If the tractor is not equipped with power beyond, then order the following parts from a Case-IH and/or a New Holland dealership:

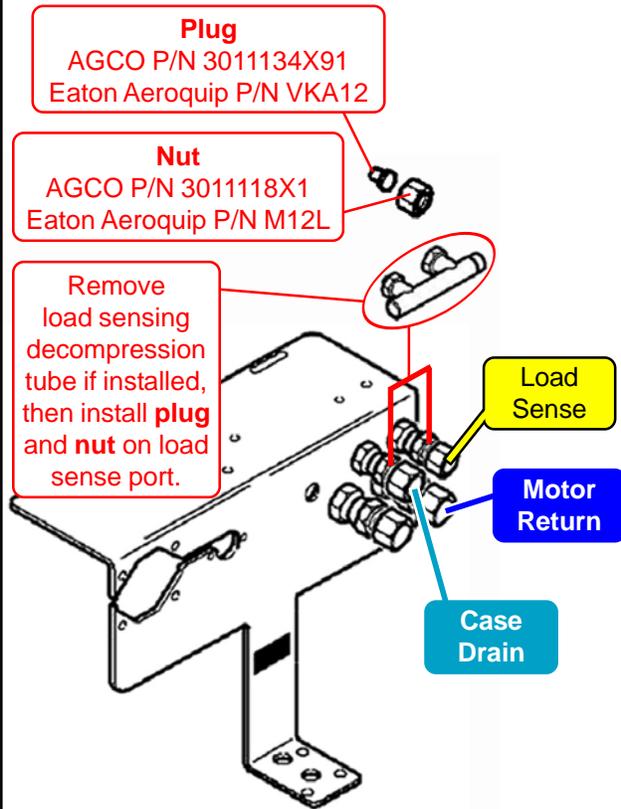
Case Drain &
Motor Return Kit 719517003

IMPORTANT: ALWAYS connect case drain first, motor return second, then pressure line to prevent motor damage. ALWAYS disconnect pressure line first, motor return second, then case drain last to prevent motor damage.

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8400 Series DTA Series MT600B Series

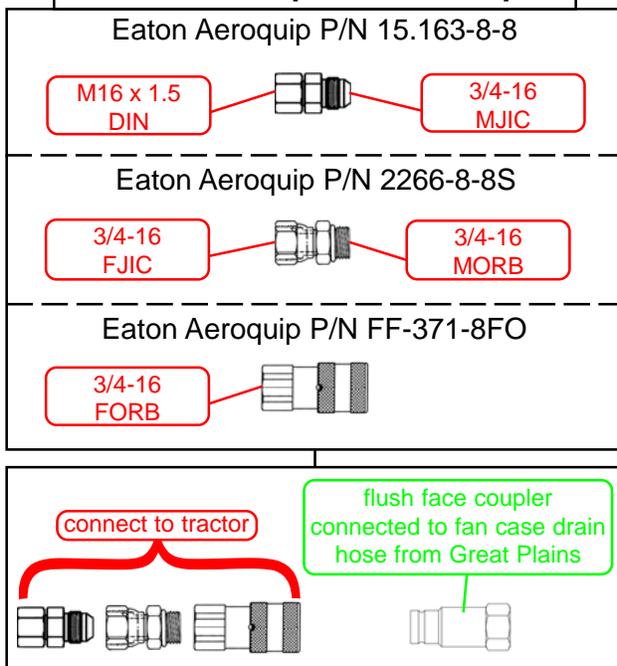


The motor return and case drain ports are capped with DIN (Deutsch Institute Normung) sized fittings from the factory. It is necessary to convert the motor return fitting to 1-1/16 MORB to use the female o-ring motor return coupler supplied with Great Plains planters and air drills. The case drain must be converted to 3/4-16 MORB.

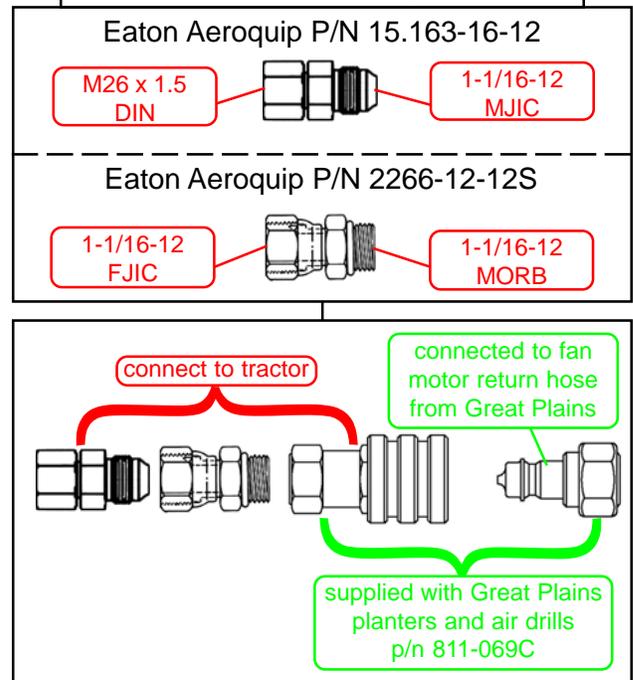
Tractors manufactured later than s/n P146047 will have a loadsensing decompression tube installed between the load sense and case drain ports. The decompression tube can be removed if port access is needed. Removal of the decompression tube leaves a small risk that the hydraulic circuit could hold residual loadsensing oil pressure.

IMPORTANT: ALWAYS connect case drain first, motor return second, then pressure line to prevent motor damage. ALWAYS disconnect pressure line first, motor return second, then case drain last to prevent motor damage.

Order the following part numbers for case drain adaptors and coupler



Order the following part numbers for motor return adaptors



Great Plains Manufacturing reserves the right to make changes or to add improvements to this guide at any time without notice or obligation.

ba082770 13

Determining Type of Fittings Needed for 8600 Series / DTB Series / MT600C Series

These tractor models may or may not be equipped with case drain and motor return lines from the factory. The part numbers given for these models is assuming the lines are installed. Contact an AGCO dealer if the lines are not installed.

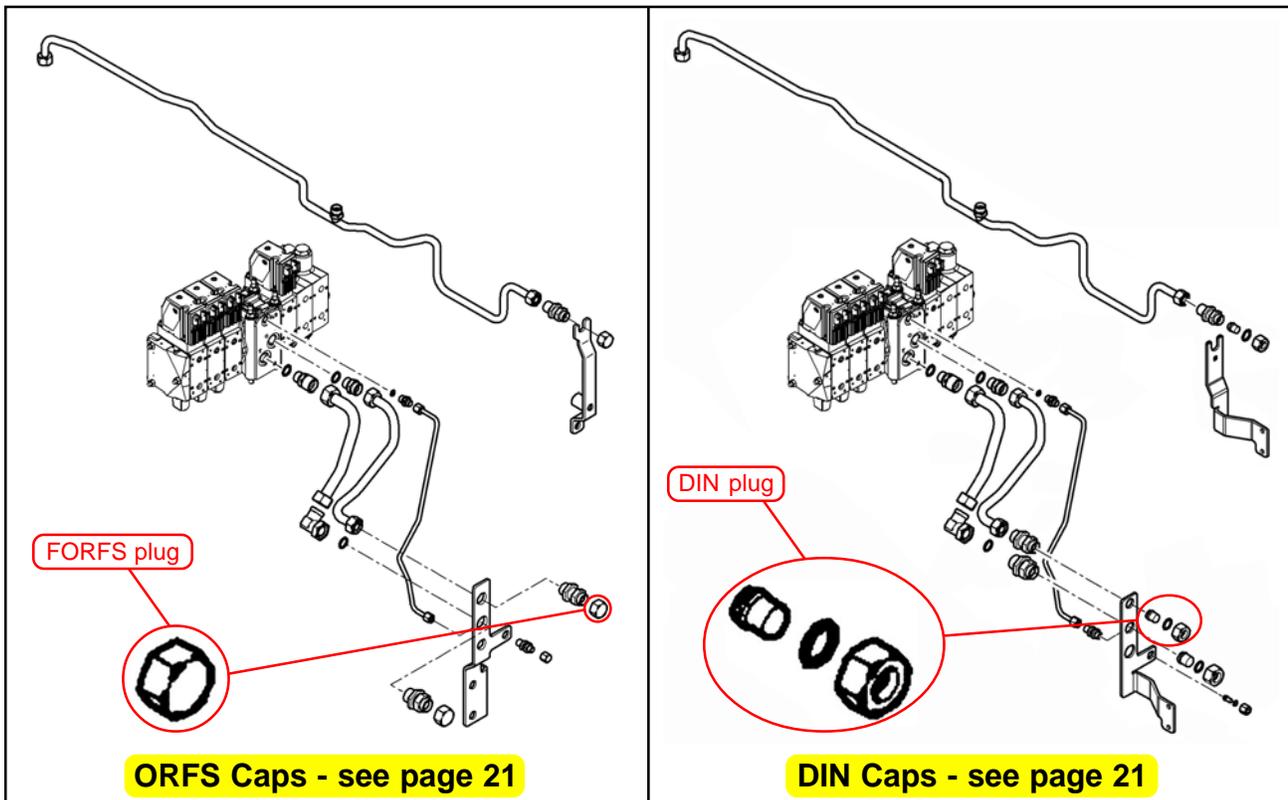
IMPORTANT: The coupler called out in the AGCO parts books for the case drain connection is **NOT** compatible and must be changed.

AGCO calls for using a standard 1/2" male coupler for the case drain which is not compatible. Case drain requires a 3/8" body size ISO 16028 zero pressure female flat face coupler.

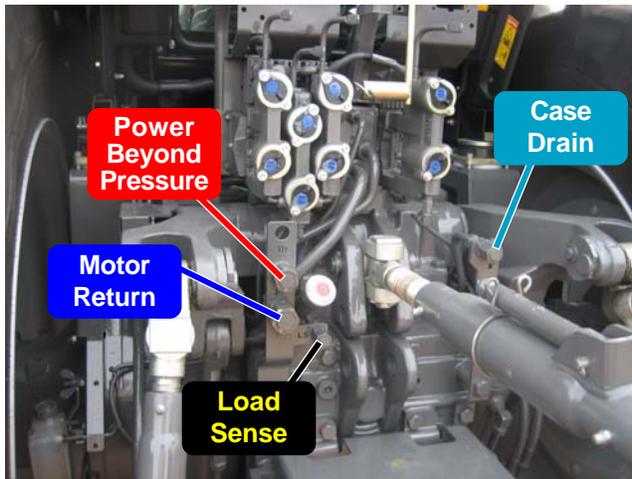
The coupler supplied through AGCO for motor return is compatible and can be used. However, the coupler is male, therefore the male coupler on the motor return line on the planter or drill must be removed and install a female coupler in its place.

There are two different types of fittings used on these models of tractors. The difference is in the type of caps on the bulkhead fittings. One type is ORFS (one piece), the other type is DIN.

Determine which type of caps are on the tractor and use the correct diagram and parts listing on the following page to install adaptor fittings for the case drain coupler.



8600 Series / DTB Series / MT600C Series



IMPORTANT: ALWAYS connect case drain first, motor return second, then pressure line to prevent motor damage. **ALWAYS disconnect** pressure line first, motor return second, then case drain last to prevent motor damage.

IMPORTANT: Tractor must be turned off before connecting power beyond pressure and load sense lines.

Motor Return

If the tractor is not equipped with 3/4" body size ISO 7241-1 Series A female motor return coupler, then order and install part number 4293732M2 from an AGCO dealer.

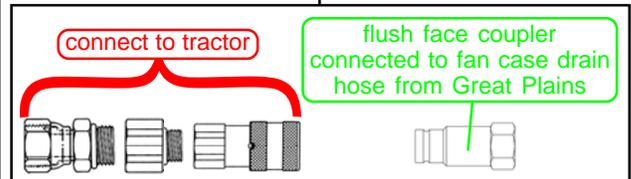
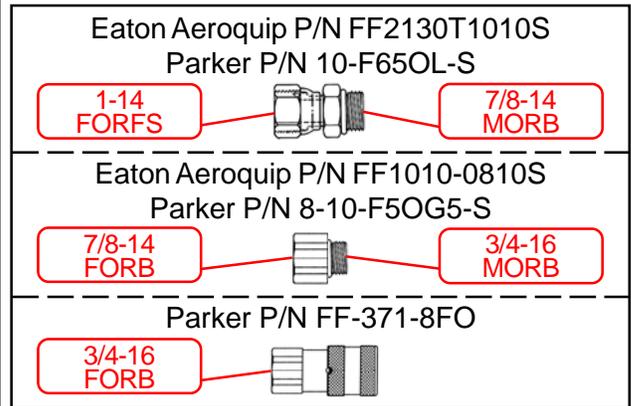
This motor return coupler is male and has a bulkhead. Remove the bulkhead fitting from the tractor motor return line (labeled "T") and install this bulkhead coupler. Also, remove the male coupler from the motor return hose on the planter, then install one of the 3/4" body size ISO 7241-1 Series A female coupler supplied with the planter.

IMPORTANT: The coupler called out in the AGCO parts books for the case drain is **NOT** compatible and must be changed.

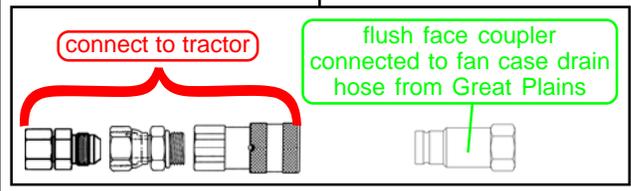
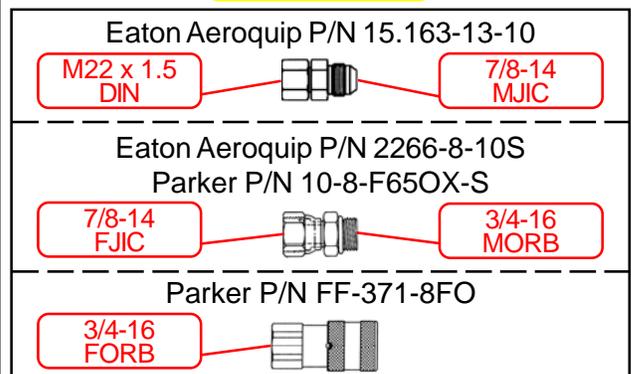
Case Drain

If the tractor is not equipped with a 3/8" body size female flat face case drain coupler, then order and install the following parts according to the type of fittings on the tractor:

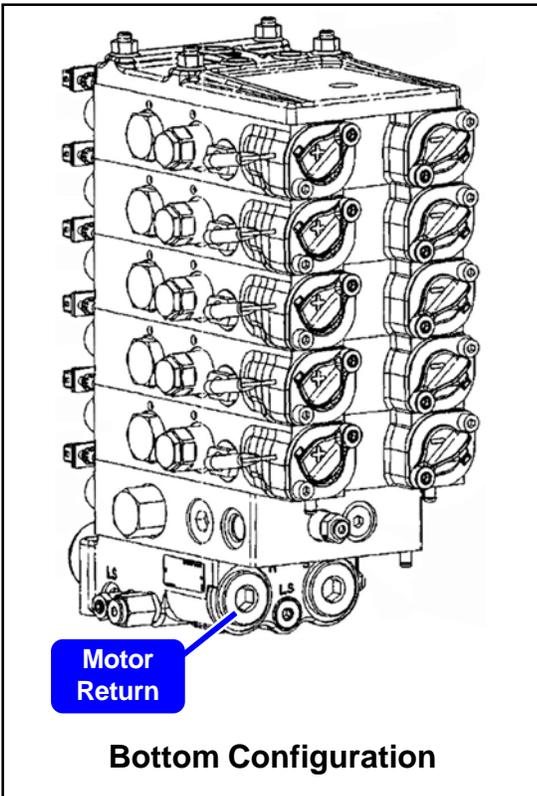
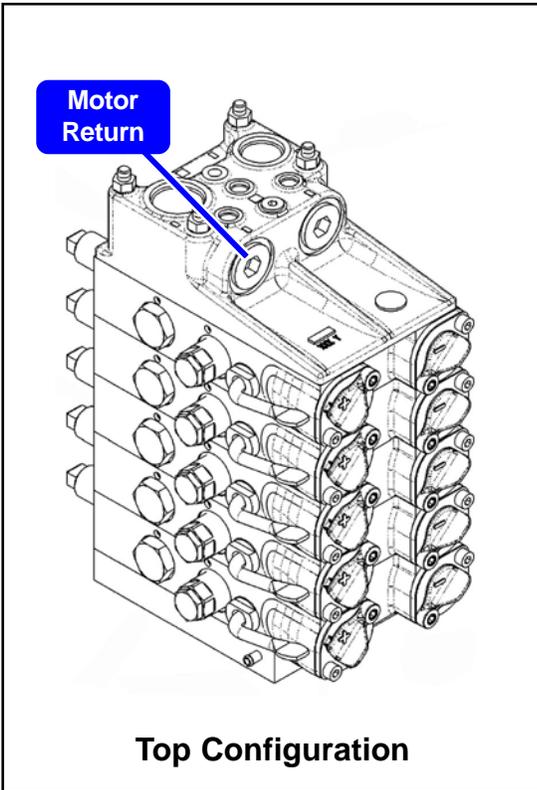
with ORFS caps



with DIN caps



MT700 & MT700B Series



Case Drain

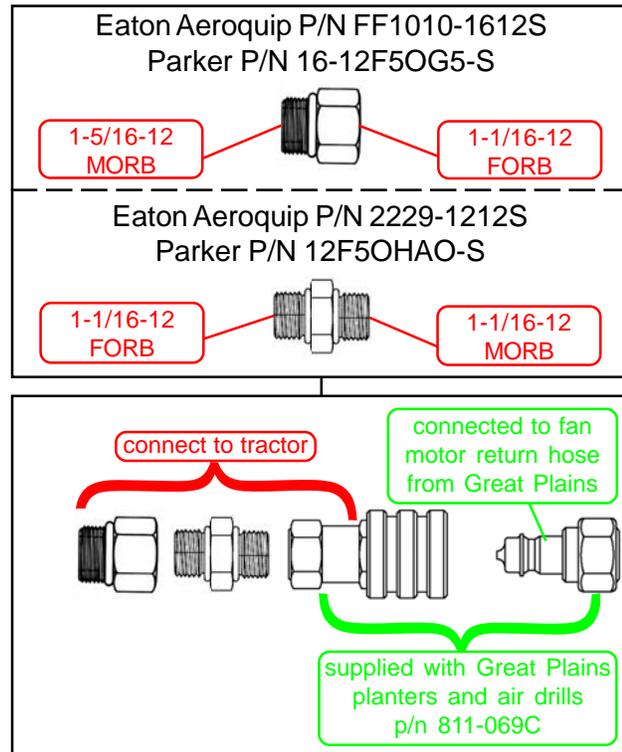
If the tractor is not equipped with a 3/8" body size ISO 16028 zero pressure female flat face case drain coupler, then order and install the appropriate kit through a Challenger dealer:

Kit	P/N
With Wide Swing Drawbar	502675D1
Without Wide Swing Drawbar	502681D1

Location of the case drain varies depending on model, year manufactured, and tractor options. Installation instructions are included with each kit. Consult a Challenger dealer for more information.

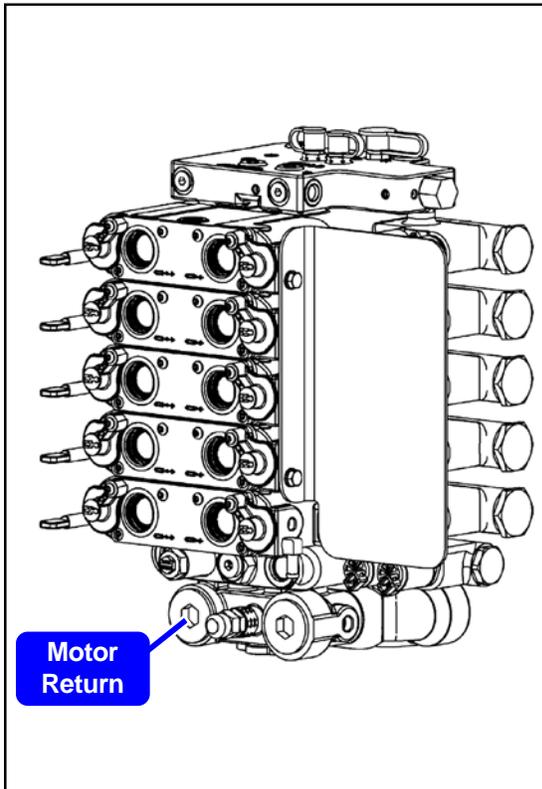
Motor Return

If the tractor is not equipped with a 3/4" body size, ISO 7241-1 Series A, female motor return coupler, then order and install the following parts:



IMPORTANT: ALWAYS connect case drain first, motor return second, then pressure line to prevent motor damage. ALWAYS disconnect pressure line first, motor return second, then case drain last to prevent motor damage.

MT700C Series



Case Drain

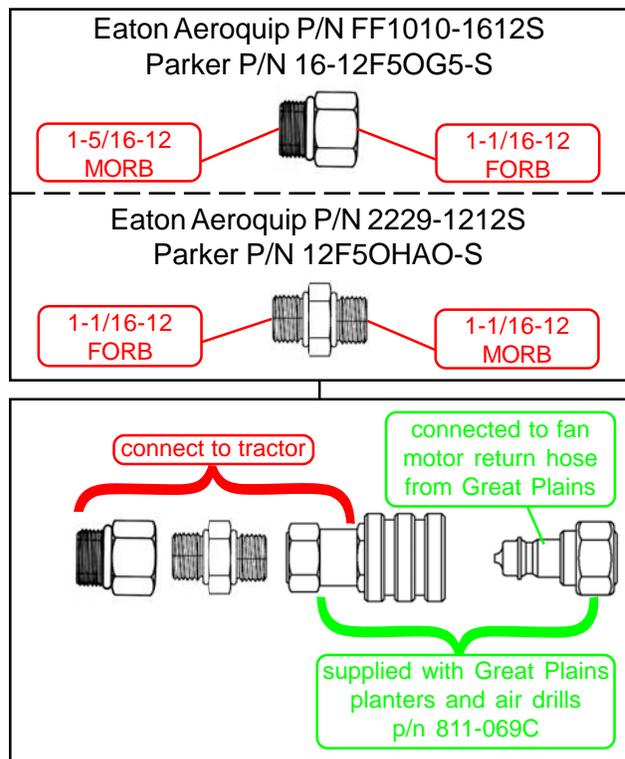
If the tractor is not equipped with a 3/8" body size ISO 16028 zero pressure female flat face case drain coupler, then order and install the appropriate kit through a Challenger dealer:

Kit	P/N
With Wide Swing Drawbar	502675D1
Without Wide Swing Drawbar	502681D1

Location of the case drain varies depending on model, year manufactured, and tractor options. Installation instructions are included with each kit. Consult a Challenger dealer for more information.

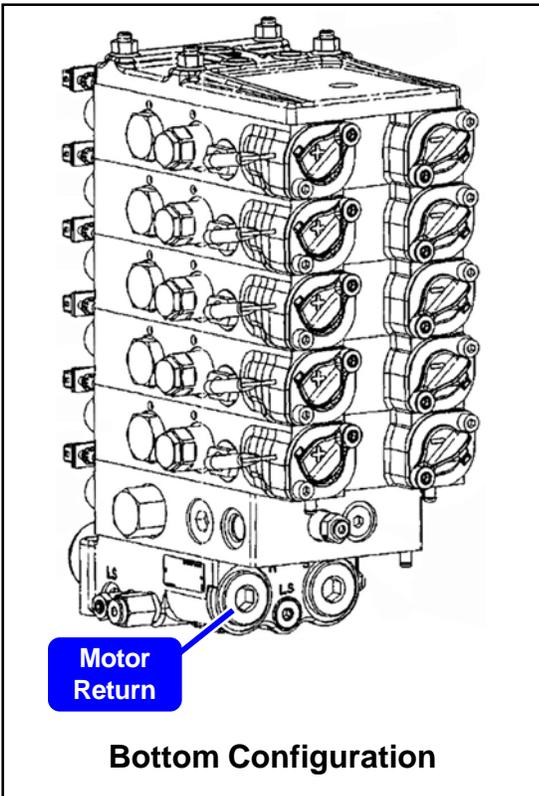
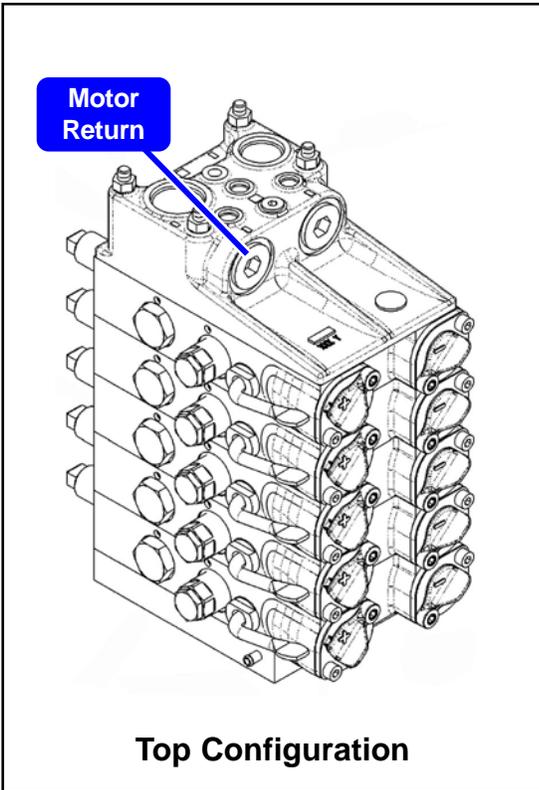
Motor Return

If the tractor is not equipped with a 3/4" body size, ISO 7241-1 Series A, female motor return coupler, then order and install the following parts:



IMPORTANT: ALWAYS connect case drain first, motor return second, then pressure line to prevent motor damage. ALWAYS disconnect pressure line first, motor return second, then case drain last to prevent motor damage.

MT800 & MT800B Series



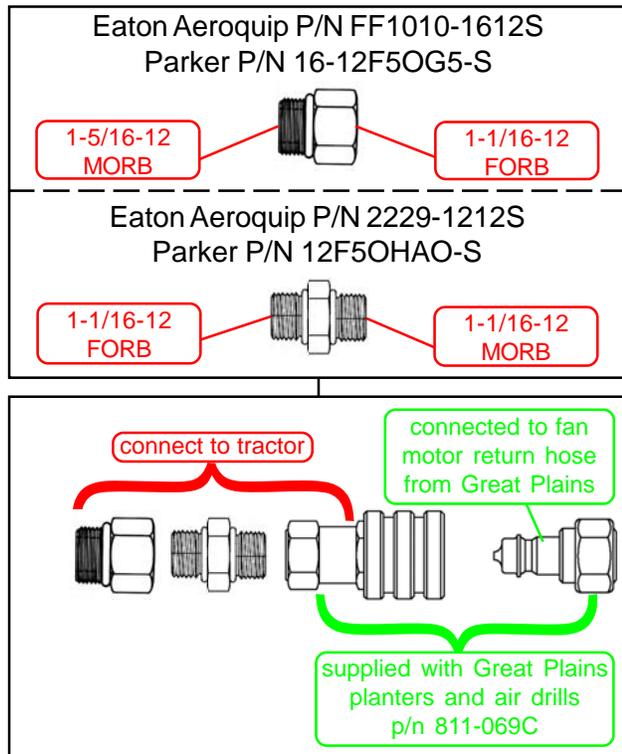
Case Drain

If case drain is not already installed on the tractor, then order and install case drain kit with flush face coupler part number 502682D1 through a Challenger dealer.

Location of the case drain varies depending on model, year manufactured, and tractor options. Installation instructions are included with the kit. Consult a Challenger dealer for more information.

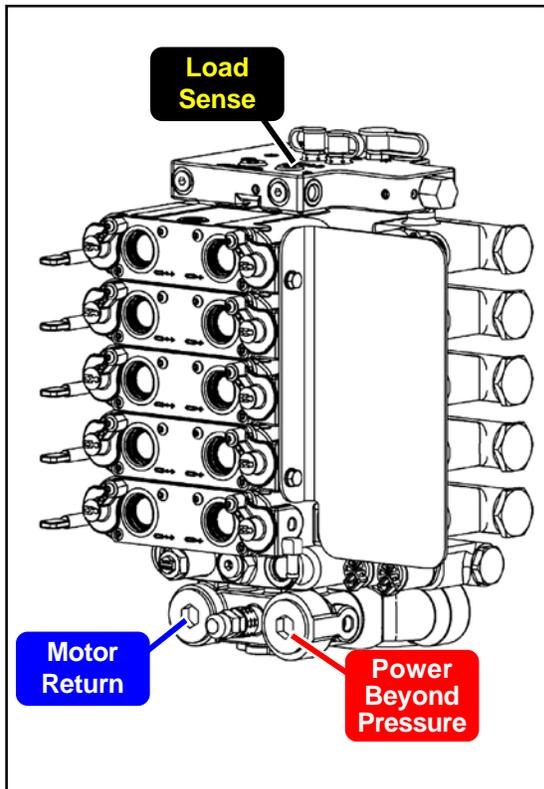
Motor Return

If the tractor is not equipped with a 3/4" body size, ISO 7241-1 Series A, female motor return coupler, then order and install the following parts:



IMPORTANT: ALWAYS connect case drain first, motor return second, then pressure line to prevent motor damage. ALWAYS disconnect pressure line first, motor return second, then case drain last to prevent motor damage.

MT800C Series



Case Drain

If the tractor is not equipped with a 3/8" body size ISO 16028 zero pressure female flat face case drain coupler, then order and install the following case drain kit with flush face coupler through a Challenger dealer.

Kit	P/N
Case Drain	502682D1

Location of the case drain varies depending on model, year manufactured, and tractor options. Installation instructions are included with the kit. Consult a Challenger dealer for more information.

Motor Return

If the tractor is not equipped with a 3/4" body size, ISO 7241-1 Series A, female motor return coupler, then order and install the following parts:

Eaton Aeroquip P/N FF1010-1612S
Parker P/N 16-12F5OG5-S

1-5/16-12
MORB



1-1/16-12
FORB

Eaton Aeroquip P/N 2229-1212S
Parker P/N 12F5OHAO-S

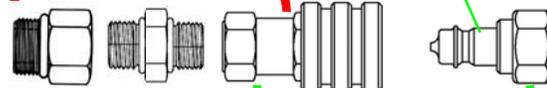
1-1/16-12
FORB



1-1/16-12
MORB

connect to tractor

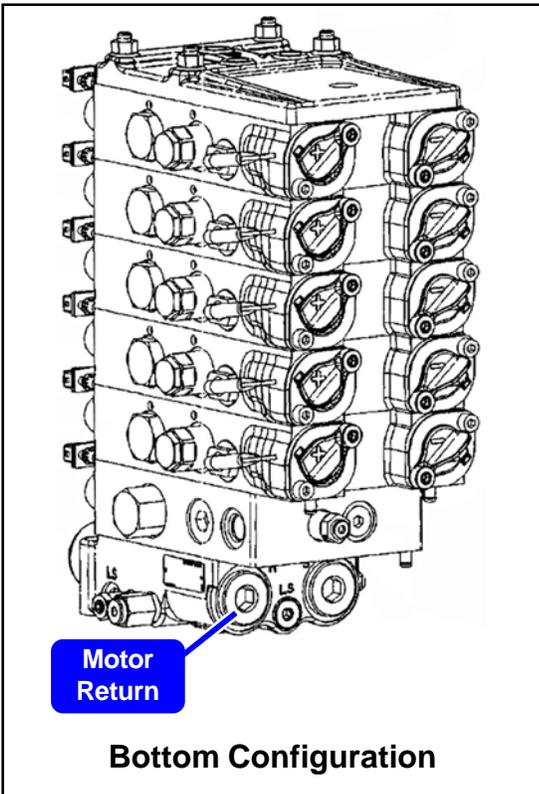
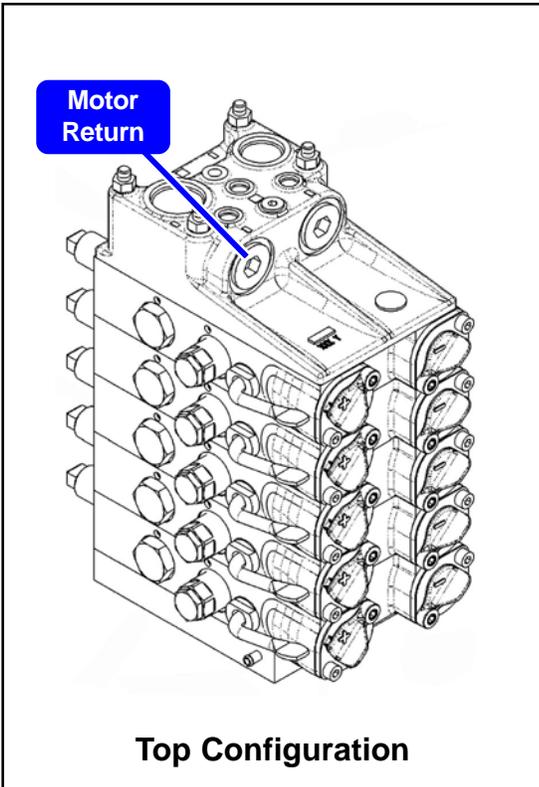
connected to fan
motor return hose
from Great Plains



supplied with Great Plains
planters and air drills
p/n 811-069C

IMPORTANT: ALWAYS connect case drain first, motor return second, then pressure line to prevent motor damage. ALWAYS disconnect pressure line first, motor return second, then case drain last to prevent motor damage.

MT900B Series



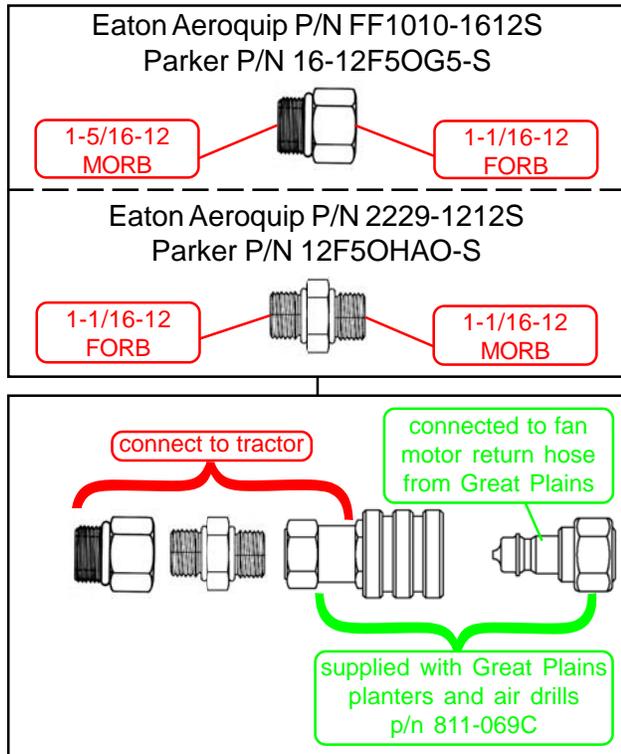
Case Drain

If the tractor is not equipped with a 3/8" body size female flat face case drain coupler, then order and install kit part number 512468D1 through a Challenger dealer.

Location of the case drain varies depending on model, year manufactured, and tractor options. Installation instructions are included with the kit. Consult a Challenger dealer for more information.

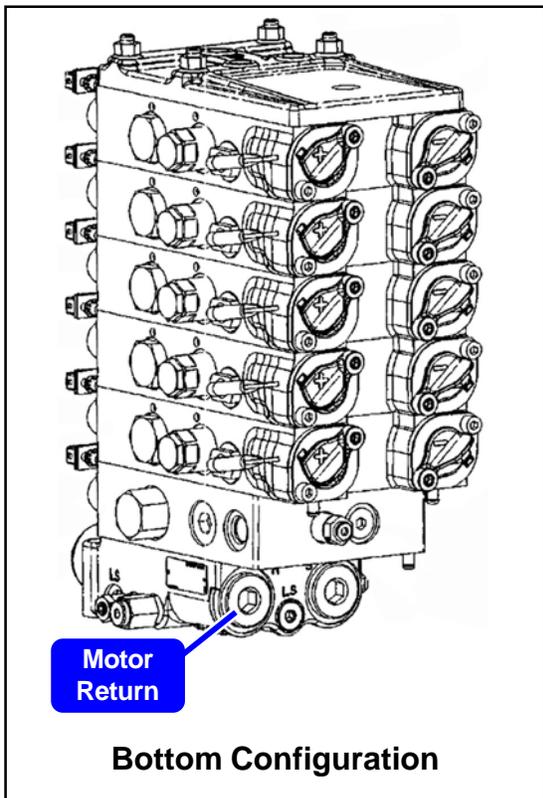
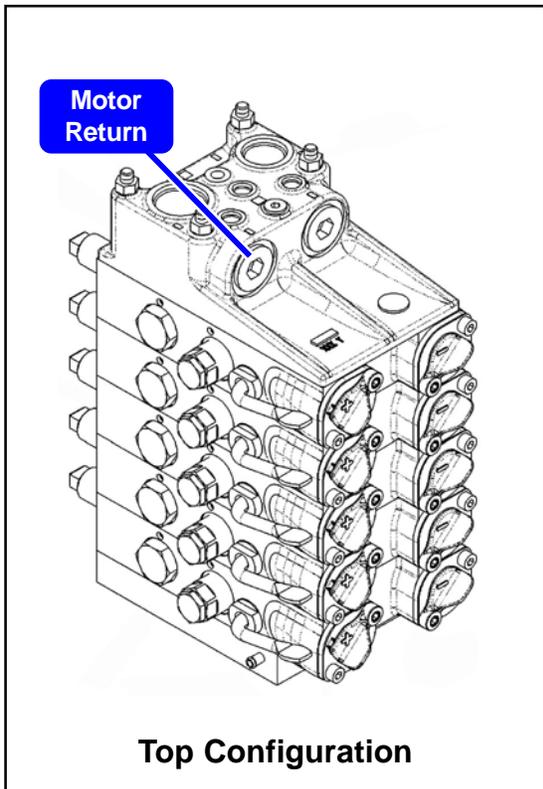
Motor Return

If the tractor is not equipped with a 3/4" body size, ISO 7241-1 Series A, female motor return coupler, then order and install the following parts:



IMPORTANT: ALWAYS connect case drain first, motor return second, then pressure line to prevent motor damage. **ALWAYS disconnect** pressure line first, motor return second, then case drain last to prevent motor damage.

MT900C Series



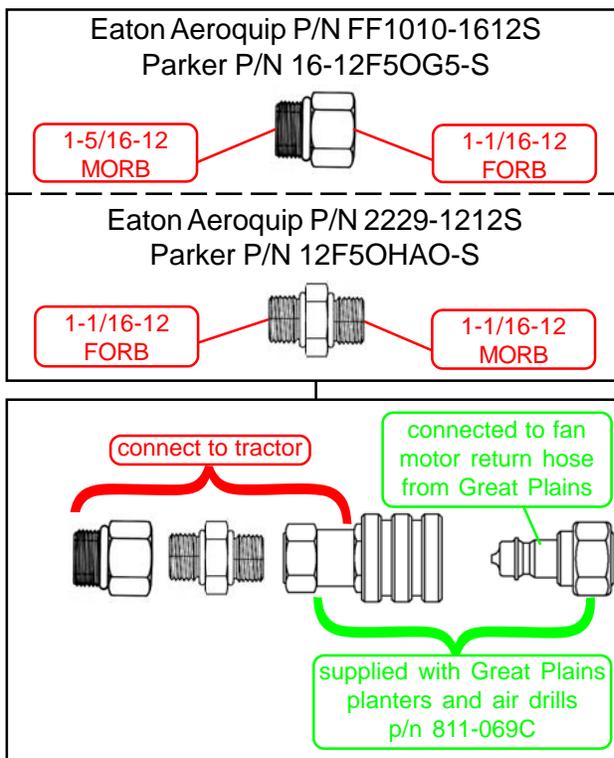
Case Drain

If the tractor is not equipped with a 3/8" body size female flat face case drain coupler, then order and install kit part number 503450D1 through a Challenger dealer.

Location of the case drain varies depending on model, year manufactured, and tractor options. Installation instructions are included with the kit. Consult a Challenger dealer for more information.

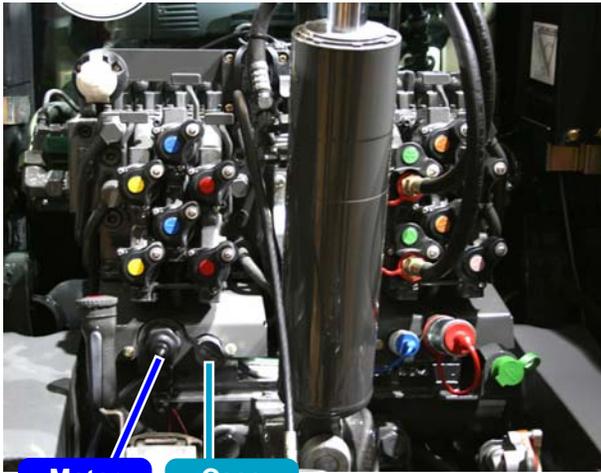
Motor Return

If the tractor is not equipped with a 3/4" body size, ISO 7241-1 Series A, female motor return coupler, then order and install the following parts:



IMPORTANT: ALWAYS connect case drain first, motor return second, then pressure line to prevent motor damage. ALWAYS disconnect pressure line first, motor return second, then case drain last to prevent motor damage.

900 Vario Series Com 3



Motor
Return

Case
Drain

All North American Com 3 tractors have case drain and motor return couplers installed from the factory. These couplers are compatible with the couplers supplied from Great Plains.

However, the motor return coupler installed on the tractor from the factory is male. Remove the male coupler from the motor return hose on the planter. Then install a 3/4" body size ISO 7241-1 Series A female coupler supplied with the planter or drill.

IMPORTANT: ALWAYS connect case drain first, motor return second, then pressure line to prevent motor damage. ALWAYS disconnect pressure line first, motor return second, then case drain last to prevent motor damage.