

**DISTRIBUTED POWER**

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**Procedure Guide  
Section I**



Operating Practices  
October 2010

### **Distributed Power Set Up Requirements**

1. All locomotives must be set up for conventional operation before DP can be set up on any locomotive consist.
2. A lead locomotive must be set up in each DP consist.
3. All other locomotives in the consist must be set up as trail.
4. The required locomotive inspections and air brake tests must be completed on each consist before setting up DP.

To set up Distributed Power, locomotives must be set up in the following order:

1. Set up all DP Remote consists.
2. Set up the DP Lead consist.

### **MSREP Information**

Contact the MSREP for any condition or defect that may prevent Distributed Power from operating.

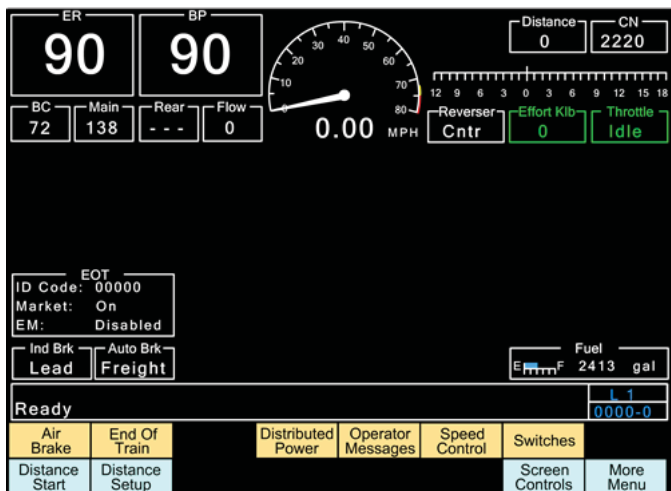
### **Distributed Power Operating Instructions**

More information regarding Distributed Power operation can be found in Section H of the Locomotive Engineer Operating Manual.

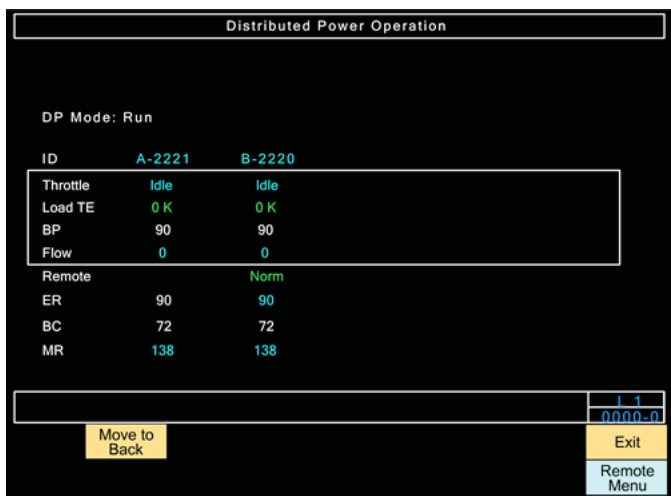
This Distributed Power Procedure Guide and Section H of the Locomotive Engineer Operating Manual complement each other. Therefore, it is imperative that Locomotive Engineers familiarize themselves with the content of both documents.

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GE Gauges Screen (Main Operating)



GE Distributed Power Operation Screen

**NOTE:** The Distributed Power Operation screen is only visible on the DP Lead when linked to a DP Remote unit.

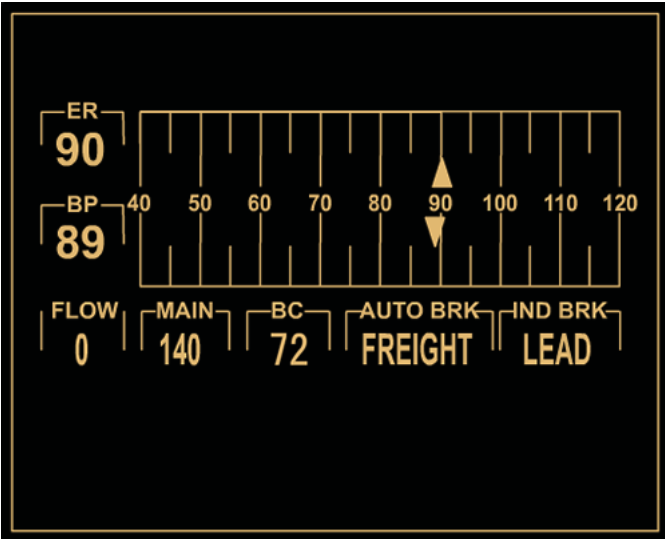


EMD Gauges Screen (Main Operating)



EMD Distributed Power Operation Screen

**NOTE:** The Distributed Power Operation screen is only visible on the DP Lead when linked to a DP Remote unit.



OIM Gauges Screens (Main Operating)

	A-2532	B-2221
<b>RUN</b>		
THROTTLE	IDLE	IDLE
LOAD	0 A	0 K
BP	89	89
FLOW	0	8
REMOTE		NORM
ER	90	90
CYLINDER	72	72
MAIN RES	137	137

BACK REMOTE SAND REMOTE MENU

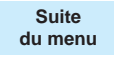
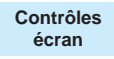
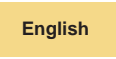
OIM Distributed Power Operation Screen

**NOTE:** The Distributed Power Operation screen is only visible on the DP Lead when linked to a DP Remote unit.

In situations where the language needs to be switched to English use the following procedures.

### GE - Language Setup

To change the operator display screen language from French to English, proceed as follows:

1. Press 
  2. Press 
  3. Press 
- 
- 




### EMD - Language Setup

To change the operator display screen language from French to English, proceed as follows:

1. Press 
  2. Press 
  3. Press 
  4. Press 
  5. Select Canada (English) using  
  6. Press 
- 
- 

### OIM - Language Setup

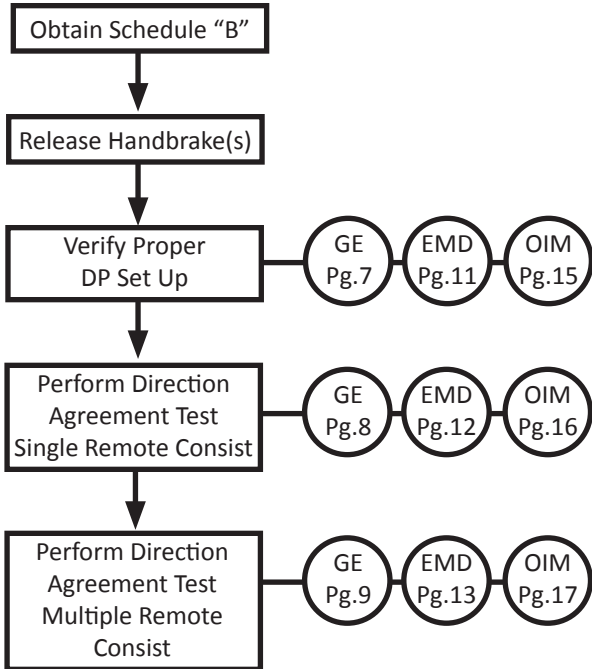
To change the operator display screen language from French to English, proceed as follows:

1. Press 
2. Press 
  - The **LANGUE** box will change to **ANGLAIS**.
3. Press 

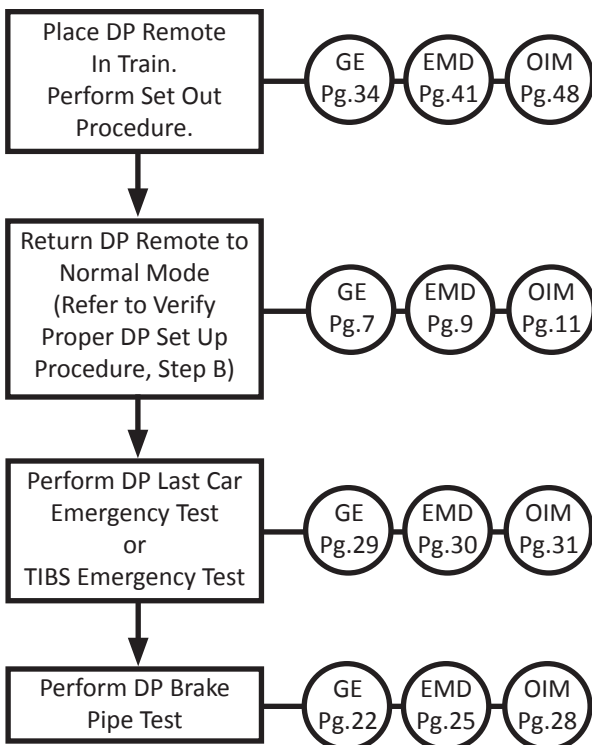
### At Origin - DP Linked and Tested at Safety Inspection Location

The following chart outlines the process and procedures that must be completed when taking charge of DP locomotives that are already linked and tested at a Safety Inspection Location.

#### Locomotive Set Up



#### Train Set Up





## GE - Verify Proper DP Set Up

DP Mode: Run ← Set to Run, see (A) below

ID	A-2221	B-2220
Throttle	Idle	Idle
Load TE	0 K	0 K
Consist TE	1:1 OK	--- ---
BP	89	89
Flow	0	0 ← If OUT, see (C) below
Remote		Norm ← If IDLE, BV OUT, ISOL or S/O, see (B) below
ER	90	90
BC	72	72

A) From the Gauges screen, set DP Mode to RUN:

- i) Press **Distributed Power**
- ii) Press **DP Main Menu**
- iii) Press **MODE**
- iv) Press **RUN**
- v) Press **EXECUTE**
- vi) Press **EXIT** to return to the Gauges screen.

B) Set DP Remote status to Norm (Normal):

- i) Press **REMOTE MENU**
- ii) Press **NORMAL**
- iii) Press **EXECUTE**

C) To change the flow indication from **Out** to a numeric value the DP Remote consist must detect an increase in BP pressure of at least 3 PSI within 3 minutes of receiving an automatic brake release command.



**GE - Direction Agreement Test - Single Remote Consist**

From the DP Operation screen, complete the direction agreement test as per procedure outlined below.

1. Ensure **DP Mode** is set to **RUN**.
2. Place **GEN FIELD** to **ON**.
3. Place **Reverser** to **Forward** or **Reverse**.
4. Press **Move to Back** **NOTE:** The **Move To Back** key is only visible when the DP Mode is RUN, the GEN FIELD is ON and the Reverser is in Forward or Reverse.
5. Press **Traction**
6. Press **EXECUTE**
7. Verify that the DP Remote **Throttle** displays **N1** and the **Load** displays a numeric value.

DP Mode: Run ← Step 1

ID	A-2221	B-2220
Throttle	Idle	N1 ← Step 7
Load TE	0 K	4 K
Consist TE	1:1 OK	--- ---
BP	90	90
Flow	0	0
Remote		Norm
ER	90	90
BC	0	0


8. Modulate the **Independent Brake** handle to allow movement.
9. Press **More Traction** if necessary.
10. After the slack bunches or stretches according to the selected reverser position, press **Move to Front** to return to synchronous operation.
11. Return **Reverser** to **Neutral** position.



**GE - Direction Agreement Test - Multiple Remote Consists**

**NOTE:** When linked to multiple remotes, direction agreement of each remote must be tested individually using these procedures.

From the DP Operation screen, complete the direction agreement test as per procedure outlined below.

1. Ensure **DP Mode** is set to **RUN**.
2. Press **REMOTE MENU** (if visible).
3. Select the "C" DP Remote using  or **Select Remote**
4. Press **IDLE** to change the "C" Remote's mode to idle.
5. Verify that the "C" DP Remote mode changes to Idle.
6. Press **Control Menu**
7. Place **GEN FIELD** to **ON**.
8. Place **Reverser** to **Forward** or **Reverse**.
9. Press **Move to Back** until the divider line (fence) appears between the "A" DP Lead and "B" DP Remote.
10. Press **Traction**
11. Press **EXECUTE**
12. Verify that the Throttle field on the "B" DP Remote displays N1 and the Load field displays a numeric value.

ID	A-2221	B-2220	C-2260
Throttle	Idle	N1	Idle
Load TE	0 K	4 K	0 K
Consist TE	1:1 OK	---	---
BP	90	90	90
Flow	10	20	20
Remote		Norm	Idle
ER	90	90	90





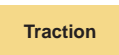

13. Modulate the **Independent Brake** handle to allow movement.
14. Press **More Traction** if necessary.
15. After the slack bunches or stretches according to the selected reverser position, press **IDLE** to return the Remote's traction to idle.
16. Fully apply the Independent Brake and return **Reverser** to **Neutral** position.
17. Press **REMOTE MENU**
18. Ensure the "C" DP Remote is selected.
19. Press **NORMAL** followed by **EXECUTE** to return the "C" DP Remote to Normal mode.

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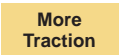

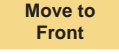
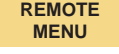
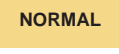



GE - Direction Agreement Test - Multiple Remote Consists

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- 21. Verify that the "C" DP Remote mode changes to Normal.
- 22. Select the "B" DP Remote using  or 
- 23. Press  to change the Remote's mode to idle.
- 24. Verify that the "B" DP Remote mode changes to Idle.
- 25. Press 
- 26. Place Reverser to Forward or Reverse.
- 27. Press 
- 28. Press 
- 29. Verify that the Throttle field on the "C" DP Remote displays N1 and the Load field displays a numeric value.

ID	A-2221	B-2220	C-2260
Throttle	Idle	Idle	N1
Load TE	0 K	0 K	4 K
Consist TE	1:1 OK	---	---
BP	90	90	90
Flow	10	20	20
Remote		Idle	Norm
ER	90	90	90

- 30. Modulate the **Independent Brake** handle to allow movement.
- 31. Press  if necessary.
- 32. After the slack bunches or stretches according to the selected reverser position, press  to return the Remote's traction to idle.
- 33. Fully apply the Independent Brake and return **Reverser** to **Neutral** position.
- 34. Press  until the divider line (fence) disappears. (Return to synchronous operation.)
- 35. Press 
- 36. Ensure the "B" DP Remote is selected.
- 37. Press  followed by  to return the "B" DP Remote to Normal mode.
- 38. Verify that the "B" and "C" DP Remote modes display Normal.

ID	A-2221	B-2220	C-2260
Throttle	Idle	Idle	Idle
Load TE	0 K	0 K	0 K
Consist TE	1:1 OK	---	---
BP	90	90	90
Flow	10	20	20
Remote		Norm	Norm
ER	90	90	90

## EMD - Verify Proper DP Set Up






Set to Run, see (A) below

	FRONT	BACK
	A-8821	B-8814
THROTTLE	IDLE	IDLE
LOAD	0 A	0 A
CONSIST	0:1 0K	N/A
BRAKE PIPE	90	90
FLOW	0	0
REMOTE	--	NORM
EQUALIZING	90	90
CYLINDER	72	72




← If OUT, see (C) below

← If IDLE, BV OUT, ISOL or S/O, see (B) below

A) From the Gauges screen, set DP Mode to RUN:

- i) Press 
- ii) Press 
- iii) Press 
- iv) Press 
- v) Press  to return to the Gauges screen.

B) Set DP Remote status to Norm (Normal):

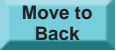
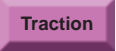
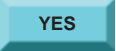
- i) Press 
- ii) Press 
  - Press  when following prompt appears:  
**Normal: Execute Command?**

C) To change the flow indication from **Out** to a numeric value the DP Remote consist must detect an increase in BP pressure of at least 3 PSI within 3 minutes of receiving an automatic brake release command.



EMD - Direction Agreement Test - Single Remote Consist

From the DP Operation screen, complete the direction agreement test as per procedure outlined below.



1. Ensure **DP Mode** is set to **RUN**.
2. Place **GEN FIELD** to **ON**.
3. Place **Reverser** to **Forward** or **Reverse**.
4. Press  **NOTE:** The **Move To Back** key is only visible when the DP Mode is RUN, the GEN FIELD is ON and the Reverser is in Forward or Reverse.
5. Press 
6. Press  when following prompt appears:

**TRACTION: Execute Command?**

7. Verify that the **Remote Throttle** displays **N1** and the **Load** displays a numeric value.

**Step 1**









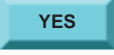
	FRONT A-8821	BACK B-8814
THROTTLE	IDLE	N1 ← Step 7
LOAD	0 A	100 A ← Step 7
CONSIST	1:1 0K	N/A
BRAKE PIPE	90	90
FLOW	10	20
REMOTE	--	NORM
EQUALIZING	90	90
CYLINDER	80	80

8. Modulate the **Independent Brake** handle to allow movement.
9. Press  if necessary.
10. After the slack bunches or stretches according to the selected reverser position, press  to return to synchronous operation.
11. Return **Reverser** to **Neutral** position.

**EMD - Direction Agreement Test - Multiple Remote Consists**

**NOTE:** When linked to multiple remotes, direction agreement of each remote must be tested individually using these procedures.




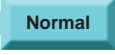

From the DP Operation screen, complete the direction agreement test as per procedure outlined below.

1. Ensure **DP Mode** is set to **RUN**.
2. Press  (if visible).
3. Select the "C" DP Remote using  or .
4. Press  to change the "C" Remote's mode to idle.
5. Verify that the "C" DP Remote mode changes to Idle.
6. Press  followed by .
7. Place **GEN FIELD** to **ON**.
8. Place **Reverser** to **Forward** or **Reverse**.
9. Press  until the divider line (fence) appears between the "A" DP Lead and "B" DP Remote.
10. Press .
11. Press  when following prompt appears:

**TRACTION: Execute Command?**

12. Verify that the Throttle field on the "B" DP Remote displays N1 and the Load field displays a numeric value.

	FRONT		BACK	
RUN	A-8821	B-8814	C-8825	
THROTTLE	IDLE	N1	IDLE	← Step 12
LOAD	0 A	100 A	0 A	
CONSIST	1:1 OK	N/A	N/A	
BRAKE PIPE	90	90	90	
FLOW	10	20	20	
REMOTE	--	NORM	IDLE	← Step 5
EQUALIZING	90	90	90	

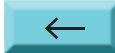






13. Modulate the **Independent Brake** handle to allow movement.
14. Press  if necessary.
15. After the slack bunches or stretches according to the selected reverser position, press  to return the Remote's traction to idle.
16. Fully apply the Independent Brake and return **Reverser** to **Neutral** position.
17. Press .
18. Ensure the "C" DP Remote is selected.
19. Press  followed by  to return the "C" DP Remote to Normal mode.

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EMD - Direction Agreement Test - Multiple Remote Consists







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- 21. Verify that the "C" DP Remote mode changes to Normal.
- 22. Select the "B" DP Remote using  or 
- 23. Press  to change the "B" Remote's mode to idle.
- 24. Verify that the "B" DP Remote mode changes to Idle.
- 25. Press  followed by 
- 26. Place Reverser to Forward or Reverse.
- 27. Press 
- 28. Press  when following prompt appears:

**TRACTION: Execute Command?**

- 29. Verify that the Throttle field on the "C" DP Remote displays N1 and the Load field displays a numeric value.

RUN	FRONT		BACK	
	A-8821	B-8814	C-8825	
THROTTLE	IDLE	IDLE	N1 ← Step 29	
LOAD	0 A	0 A	100 A ← Step 29	
CONSIST	1:1 OK	N/A	N/A	
BRAKE PIPE	90	90	90	
FLOW	10	20	20	
REMOTE	--	IDLE ← NORM	← Step 24	
EQUALIZING	90	90	90	

- 30. Modulate the **Independent Brake** handle to allow movement.
- 31. Press  if necessary.
- 32. After the slack bunches or stretches according to the selected reverser position, press  to return the Remote's traction to idle.
- 33. Fully apply the Independent Brake and return **Reverser** to **Neutral** position.
- 34. Press  until the divider line (fence) disappears. (Return to synchronous operation.)
- 35. Press 
- 36. Ensure the "B" DP Remote is selected.
- 37. Press  followed by  to return the "B" DP Remote to Normal mode.
- 38. Verify that the "B" and "C" DP Remote modes change to Normal.

RUN	FRONT		BACK	
	A-8821	B-8814	C-8825	
THROTTLE	IDLE	IDLE	IDLE	
LOAD	0 A	0 A	0 A	
CONSIST	1:1 OK	N/A	N/A	
BRAKE PIPE	90	90	90	
FLOW	10	20	20	
REMOTE	--	NORM ← NORM	← Step 38	
EQUALIZING	90	90	90	



## OIM - Verify Proper DP Set Up

	A-2538	B-2221
RUN	← Set to Run, see (A) below	
THROTTLE	IDLE	IDLE
LOAD	0 A	0 K
BP	89	89
FLOW	0	0 ← If OUT, see (C) below
REMOTE	NORM ← If IDLE, BV OUT, ISOL or	
ER	90	90 S/O, see (B) below
CYLINDER	72	72

A) From the Gauges screen, set DP Mode to RUN:

- i) Press **MAIN MENU**
- ii) Press **MODE**
- iii) Press **RUN**
- iv) Press **EXEC**
- v) Press **EXIT** to return to the Gauges screen.

B) Set DP Remote status to Norm (Normal):




- i) Press **REMOTE MENU**
- ii) Press **NORMAL**
- iii) Press **EXEC**

C) To change the flow indication from **Out** to a numeric value the DP Remote consist must detect an increase in BP pressure of at least 3 PSI within 3 minutes of receiving an automatic brake release command.





**OIM - Direction Agreement Test - Single Remote Consist**

From the DP Operation screen, complete the direction agreement test as per procedure outlined below.

1. Ensure **DP Mode** is set to **RUN**.
2. Place **GEN FIELD** to **ON**.
3. Place **Reverser** to **Forward** or **Reverse**.
4. Press  **NOTE:** The **Back** key is only visible when the DP Mode is RUN, the GEN FIELD is ON and the Reverser is in Forward or Reverse.
5. Press 
6. Press 
7. Verify that DP Remote **Throttle** displays **N1** and the **Load** displays a numeric value.

	A-2538	B-2221
RUN	← Step 1	
THROTTLE	IDLE	N1 } ← Step 7
LOAD	0 A	4 K }
BP	90	90
FLOW	0	0
REMOTE	--	NORM
ER	90	90
CYLINDER	0	0

8. Modulate the **Independent Brake** handle to allow movement.
9. Press , if necessary.
10. After the slack bunches or stretches according to the selected reverser position, press  to return to synchronous operation.
11. Return **Reverser** to **Neutral** position.



**OIM - Direction Agreement Test - Multiple Remote Consists**

**NOTE:** When linked to multiple remotes, direction agreement of each remote must be tested individually using these procedures.

From the DP Operation screen, complete the direction agreement test as per procedure outlined below.

1. Ensure **DP Mode** is set to **RUN**.
2. Press **REMOTE MENU** (if visible).
3. Select the "C" DP Remote using or **SELECT REMOTE**
4. Press **IDLE** to change the "C" Remote's mode to idle.
5. Verify that the "C" DP Remote mode changes to Idle.
6. Press **CONTROL MENU**
7. Place **GEN FIELD** to **ON**.
8. Place **Reverser** to **Forward** or **Reverse**.
9. Press **BACK** until the divider line (fence) appears between the "A" DP Lead and "B" DP Remote.
10. Press **TRCTN**
11. Press **EXEC**
12. Verify that the Throttle field on the "B" DP Remote displays N1 and the Load field displays a numeric value.

	A-2538	B-2221	C-2260
<b>RUN</b>			
THROTTLE	IDLE	N1	IDLE ← Step 12
LOAD	0 A	4 K	0 K
BP	90	90	90
FLOW	10	20	20
REMOTE		NORM	IDLE ← Step 5
ER	90	90	90


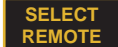




13. Modulate the **Independent Brake** handle to allow movement.
14. Press **TRCTN +** if necessary.
15. After the slack bunches or stretches according to the selected reverser position, press **IDLE** to return the Remote's traction to idle.
16. Fully apply the Independent Brake and return **Reverser** to **Neutral** position.
17. Press **REMOTE MENU**
18. Ensure the "C" DP Remote is selected.
19. Press **NORMAL** followed by **EXEC** to return the "C" DP Remote to Normal mode.

continued on next page...









OIM - Direction Agreement Test - Multiple Remote Consists

...continued from previous page.

- 21. Verify that the "C" DP Remote mode changes to Normal.
- 22. Select the "B" DP Remote using  or 
- 23. Press  to change the "C" Remote's mode to idle.
- 24. Verify that the "B" DP Remote mode changes to Idle.
- 25. Press 
- 26. Place Reverser to Forward or Reverse.
- 27. Press 
- 28. Press 
- 29. Verify that the Throttle field on the "C" DP Remote displays N1 and the Load field displays a numeric value.

	A-2538	B-2221	C-2260
<b>RUN</b>			
THROTTLE	IDLE	IDLE	N1 ← Step 29
LOAD	0 A	0 K	4 K ← Step 29
BP	90	90	90
FLOW	10	20	20
REMOTE		IDLE ← NORM	90 ← Step 24
ER	90	90	90

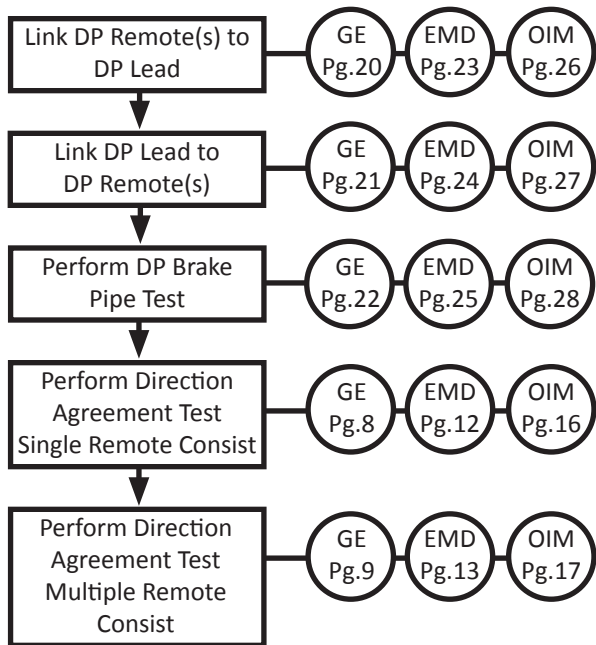
- 30. Modulate the **Independent Brake** handle to allow movement.
- 31. Press  if necessary.
- 32. After the slack bunches or stretches according to the selected reverser position, press  to return the Remote's traction to idle.
- 33. Fully apply the Independent Brake and return **Reverser** to **Neutral** position.
- 34. Press  until the divider line (fence) disappears. (Return to synchronous operation.)
- 35. Press 
- 36. Ensure the "B" DP Remote is selected.
- 37. Press  followed by  to return the "B" DP Remote to Normal mode.
- 38. Verify that the "B" and "C" DP Remote modes change to Normal.

	A-2538	B-2221	C-2260
<b>RUN</b>			
THROTTLE	IDLE	IDLE	IDLE
LOAD	0 A	0 K	0 K
BP	90	90	90
FLOW	10	20	20
REMOTE		NORM ← NORM	90 ← Step 38
ER	90	90	90

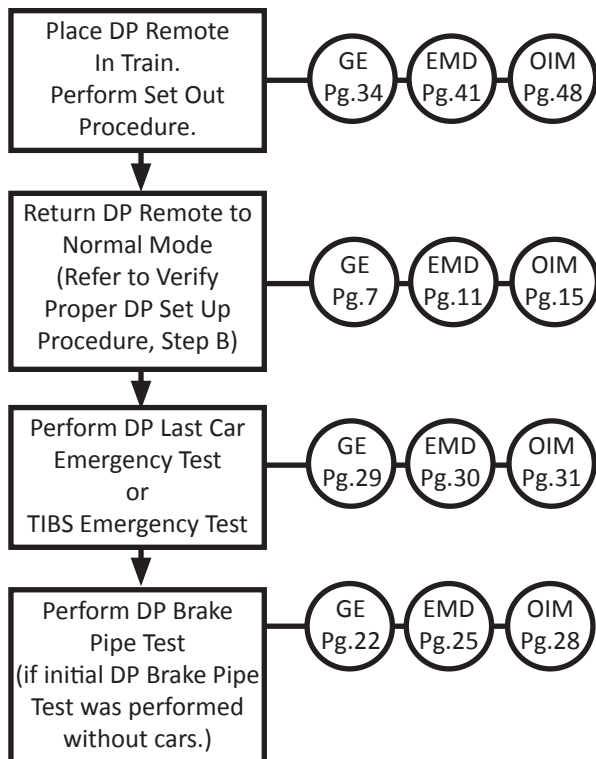
### At Origin - DP Linking and Testing at Other Than Safety Inspection Location

The following chart outlines the process and procedures that must be completed when taking charge of DP locomotives where mechanical shop staff is not readily available.

#### Locomotive Set Up



#### Train Set Up





GE - Remote Unit Set Up

1. Ensure regulating/feed valve is set to 90 psi, EOT ID Code is set to 00000 and if equipped, marker lights ON when DP Remote is on extreme tail end.
2. Ensure DP Remote switches and controls are in correct positions (see table below).

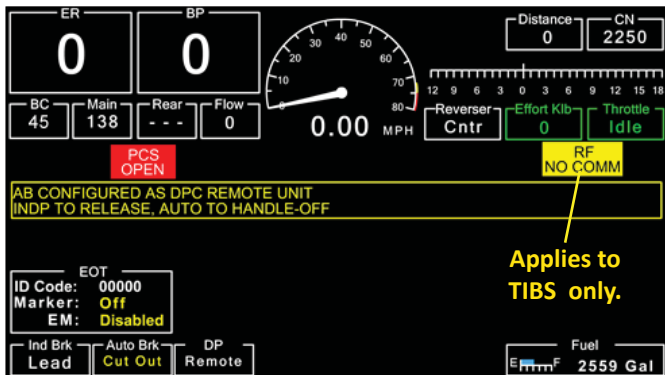
SWITCHES AND CONTROLS	POSITION
ENGINE CONTROL	RUN
DISTRIBUTED POWER BREAKER	ON
ENGINE RUN	OFF
GEN FIELD	OFF
CONTROL	ON
DYNAMIC BRAKE	ON
REVERSER	Removed
AUTOMATIC BRAKE	REL (Release)
INDEPENDENT BRAKE	FULL APPLICATION

3. Press **Distributed Power** on Gauges screen.
4. Press **REMOTE SETUP**
5. Enter the **DP Lead** locomotive number using:  

COUNT UP	COUNT DOWN	DIGIT LEFT	DIGIT RIGHT
----------	------------	------------	-------------
6. Press **OPPOSITE DIR'N** or **SAME DIR'N** to set DP Remote unit direction relative to DP Lead unit.
7. Press **DONE**
8. Simultaneously:
  - A penalty brake is initiated. (PCS will be recovered from the DP Lead unit).
  - DP indicator displays **Remote**.
  - Crew message displays:

**AB CONFIGURED AS DPC REMOTE UNIT  
INDP TO RELEASE, AUTO TO HANDLE-OFF**

9. Place **Independent Brake** handle to **REL** (Release).
10. Place **Automatic Brake** handle to **HO** (Handle-Off).
11. Insert locking pin on the Automatic Brake handle.
12. On the Gauges screen, **Auto Brk** status indicator changes from **Freight** to **Cut Out**.



Applies to TIBS only.

13. Close windows and lock doors.
14. Release hand brake(s).
15. Ensure angle cocks are fully open on coupled ends.



**GE - Lead Unit Set Up**

1. Ensure DP Lead switches and controls are in correct positions (see table below).

SWITCHES AND CONTROLS	POSITION
ENGINE CONTROL	RUN
DISTRIBUTED POWER BREAKER	ON
ENGINE RUN	ON
GEN FIELD	ON
CONTROL	ON
DYNAMIC BRAKE	ON
REVERSER	Neutral
AUTOMATIC BRAKE	REL (Release)
INDEPENDENT BRAKE	FULL APPLICATION

2. Press **Distributed Power** on Gauges screen.

3. Press **LEAD SETUP**

4. Enter the **DP Remote** locomotive number using:



5. Press **LINK**

6. Simultaneously:
  - A penalty brake is initiated.
  - Crew message displays:

**DISTRIBUTED POWER LINK / UNLINK PENALTY TO CLEAR PENALTY, GO TO SUPPRESSION**

7. Place **Automatic Brake** handle to **SUP** (Suppression).
  - Crew message displays:

**DISTRIBUTED POWER LINK / UNLINK PENALTY REMAIN IN SUPPRESSION FOR 8 SECONDS**

- Followed by:

**DISTRIBUTED POWER LINK / UNLINK PENALTY PENALTY SOURCE IS STILL PRESENT**

- The above crew message may remain displayed for up to 2 minutes, no further action is required during this time.

8. Wait for **Linked OK** message to appear.
9. Link to additional DP Remote(s) if required.

10. Press **DONE**

11. Wait for crew message to display:

**DP: CHARGE TRAIN BEFORE RUNNING BRAKE PIPE TEST**

12. Place **Automatic Brake** handle to **REL** (Release) to recover penalty and charge the air brake system.
  - Crew message displays:

**DP: PERFORM BRAKE PIPE TEST WHEN READY**

**NOTE:** If Distributed Power Operation screen doesn't appear, press **Distributed Power**



GE - DP Brake Pipe Test

1. Ensure **Reverser** is **centered** and **Automatic Brake** handle is in **REL** (Release).
2. Ensure individual **Flow** is **not greater than 60 cfm** on the DP Lead or DP Remote(s).
3. Ensure sum of DP Lead and DP Remote(s) **Flow** is **90 cfm or less** and is stable for 1 min ( $\pm 1$  cfm).

ID	A-2221	B-2220
Throttle	Idle	Idle
Load TE	0 K	0 K
Consist TE	0:1 0K	-- --
BP	90	90
Flow	10	20

*Note: A yellow arrow labeled 'Step 3' points to the 'Flow' row, specifically to the '20' value under B-2220.*

**NOTE:** If Brake Pipe Test key is visible go to Step 7.

4. Press **Distributed Power** on Gauges screen.
5. Press **DP MAIN MENU**
6. Press **SYSTEM**
7. Press **BRK PIPE TEST** **NOTE:** The Brake Pipe Test key is only visible when the train is stopped, Independent Brake is in FULL APPLICATION and the Automatic Brake in REL.
8. Press **EXECUTE**

- Crew message displays:

**DP: BP TEST: SET AUTO BRAKE TO MIN SERVICE**

9. Place **Automatic Brake** handle to **exactly MIN** (Minimum Reduction) or test cannot be completed.

- Crew message displays:

**DP: BP TEST: IN PROGRESS**

- BP Test may take up to 3 minutes to complete. During this time DP System Mode will be in Idle.

The following is only applicable during DP Set Up.

- Crew message displays:

**DP: BP TEST OK, SELECT RUN MODE ON MODE SCREEN**

10. Set DP Mode to **RUN**.

- a) Press **Distributed Power** on Gauges screen.
- b) Press **DP Main Menu**
- c) Press **MODE**
- d) Press **RUN**
- e) Press **EXECUTE**
- f) Press **EXIT** to return to the Gauges screen.

DP Mode: Run ← **Step 10**

ID	A-2221	B-2220
Throttle	Idle	Idle

**NOTE:** In the event of a Brake Pipe test failure, recharge the train and restart procedure from step 1.





**EMD - Remote Unit Set Up**

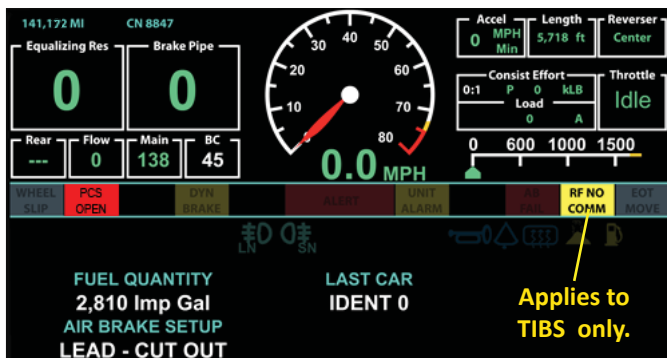
1. Ensure regulating/feed valve is set to 90 psi, EOT ID Code is set to 00000 and if equipped, marker lights ON when DP Remote is on extreme tail end.
2. Ensure DP Remote switches and controls are in correct positions (see table below).

SWITCHES AND CONTROLS	POSITION
ISOLATION SWITCH	RUN
DP RADIO BREAKER	ON
ENGINE RUN	OFF
GEN FIELD	OFF
FUEL PUMP	ON
DYN BRK SWITCH	CUT IN (ON)
REVERSER	Removed
AUTOMATIC BRAKE	REL (Release)
INDEPENDENT BRAKE	FULL APPLICATION

3. Press **More Choices** if **Distributed Power** is not visible.
4. Press **Distributed Power** on Gauges screen.
5. Press **REMOTE SETUP**
6. Enter the **DP Lead** locomotive number using:
  - COUNT UP**
  - COUNT DOWN**
  - DIGIT LEFT**
  - DIGIT RIGHT**
7. Press **OPPOSITE DIR'N** or **SAME DIR'N** to set DP Remote unit direction relative to DP Lead unit.
8. Press **DONE**
9. Simultaneously:
  - A penalty brake is initiated. (PCS will be recovered from the DP Lead unit).
  - **DP Remote Enabled** appears.
  - Crew message displays:

**AIR BRAKE CONFIGURED AS DPC REMOTE UNIT  
PLACE INDP HANDLE INTO RELEASE, AUTO HANDLE TO HANDLE-OFF**

10. Place **Independent Brake** handle to REL (Release).
11. Place **Automatic Brake** handle to **HO** (Handle-Off).
12. Insert locking pin on the Automatic Brake handle.
13. On the Gauges screen, **AIR BRAKE SETUP** displays: **LEAD - CUT OUT.**



14. Close windows and lock doors.
15. Release hand brake(s).
16. Ensure angle cocks are fully open on coupled ends.



EMD - Lead Unit Set Up

1. Ensure DP Lead switches and controls are in correct positions (see table below).

SWITCHES AND CONTROLS	POSITION
ISOLATION SWITCH	RUN
DP RADIO BREAKER	ON
ENGINE RUN	ON
GEN FIELD	ON
FUEL PUMP	ON
DYN BRK SWITCH	CUT IN (ON)
REVERSER	Neutral
AUTOMATIC BRAKE	REL (Release)
INDEPENDENT BRAKE	FULL APPLICATION

2. Press  on Gauges screen.

3. Press 

4. Enter the **DP Remote** locomotive number using:



5. Press 

6. Simultaneously:
  - A penalty brake is initiated.
  - Crew message displays:

**DISTRIBUTED POWER LINK / UNLINK PENALTY  
REMAIN IN SUPPRESSION FOR 8 SECONDS**

7. Place **Automatic Brake** handle to **SUP** (Suppression).
8. Wait for **Linked OK** message to appear.
9. Link to additional DP Remote(s) if required.

10. Press 

- Crew message displays:

**DISTRIBUTED POWER LINK / UNLINK PENALTY  
PENALTY SOURCE IS STILL PRESENT**

- The above crew message may remain displayed for up to 2 minutes, no further action is required during this time. It will then change to the following message:

**CHARGE TRAIN BEFORE RUNNING BRAKE PIPE TEST**

11. When the above crew message appears, place the **Automatic Brake** handle to **REL** (Release) to recover penalty and charge the air brake system.

- Crew message displays:

**PERFORM BRAKE PIPE TEST WHEN READY**




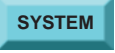


**EMD - DP Brake Pipe Test**

1. Ensure **Reverser** is **centered** and **Automatic Brake** handle is in **REL** (Release).
2. Ensure individual **Flow** is **not greater than 60 cfm** on the DP Lead or DP Remote(s).
3. Ensure sum of DP Lead and DP Remote(s) **Flow** is **90 cfm or less** and is stable for 1 min ( $\pm 1$  cfm).

RUN	FRONT A-8821	BACK B-8814
THROTTLE	IDLE	IDLE
LOAD	0 A	0 A
CONSIST	0:1 0K	N/A
BRAKE PIPE	90	90
FLOW	10	20

Step 3

**NOTE:** If Brake Pipe Test key is visible go to Step 6.

4. Press  on Gauges screen.
5. Press .
6. Press  **NOTE:** The Brake Pipe Test key is only visible when the train is stopped, Independent Brake is in FULL APPLICATION and the Automatic Brake in REL.
7. Press .

- Crew message displays:

**BP TEST: SET AUTO BRAKE TO MIN SERVICE**

8. Place **Automatic Brake** handle to **exactly MIN** (Minimum Reduction) or test cannot be completed.

- Crew message displays:






**BP TEST: IN PROGRESS**

- BP Test may take up to 3 minutes to complete. During this time DP System Mode will be in Idle.

The following is only applicable during DP Set Up.

- Crew message displays:

**BP TEST OK, SELECT RUN MODE ON MODE SCREEN**

9. Set DP Mode to **RUN**.
  - a) Press  on Gauges screen.
  - b) Press .
  - c) Press .
  - d) Press .
  - e) Press  to return to the Gauges screen.

Step 9

RUN	FRONT A-8821	BACK B-8814
THROTTLE	IDLE	IDLE

**NOTE:** In the event of a Brake Pipe test failure, recharge the train and restart procedure from step 1.



OIM - Remote Unit Set Up

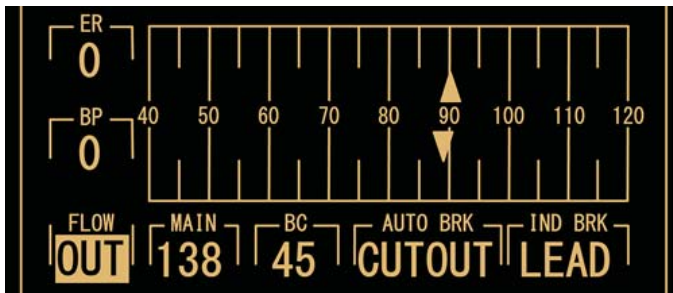
1. Ensure regulating/feed valve is set to 90 psi, EOT ID Code is set to 00000 and if equipped, marker lights ON when DP Remote is on extreme tail end.
2. Ensure DP Remote switches and controls are in correct positions (see table below).

SWITCHES AND CONTROLS	POSITION
ENGINE CONTROL	RUN
DP RADIO MODULE BREAKER	ON
ENGINE RUN	OFF
GEN FIELD CONTROL	OFF
DYNAMIC BRAKE	ON
REVERSER	Removed
AUTOMATIC BRAKE	REL (Release)
INDEPENDENT BRAKE	FULL APPLICATION

3. Press **DIST POWER** on Gauges screen.
4. Press **REMOTE SETUP**
5. Enter the **DP Lead** locomotive number using:  
**COUNT UP** **COUNT DOWN** **DIGIT LEFT** **DIGIT RIGHT**
6. Press **OPP DIR'N** or **SAME DIR'N** to set DP Remote unit direction relative to DP Lead unit.
7. Press **DONE**
8. Simultaneously:
  - A penalty brake is initiated (PCS will be recovered from the DP Lead unit).
  - **DP REMOTE ENABLED** appears.
  - Crew message displays:

**AB CONFIGURED AS DPC REMOTE UNIT  
INDP TO RELEASE; AUTO TO HANDLE-OFF**

9. Place **Independent Brake** handle to **REL** (Release).
10. Place **Automatic Brake** handle to **HO** (Handle-Off).
11. Insert locking pin on the Automatic Brake handle.
12. On the Gauges screen, the **AUTO BRK** status indicator changes from **FREIGHT** to **CUT OUT**.



13. Close windows and lock doors.
14. Release hand brake(s).
15. Ensure angle cocks are fully opened on coupled ends.



**OIM - Lead Unit Set Up**

1. Ensure DP Lead switches and controls are in correct positions (see table below).

SWITCHES AND CONTROLS	POSITION
ENGINE CONTROL	RUN
DP RADIO MODULE BREAKER	ON
ENGINE RUN	ON
GEN FIELD	ON
CONTROL	ON
DYNAMIC BRAKE	ON
REVERSER	Neutral
AUTOMATIC BRAKE	REL (Release)
INDEPENDENT BRAKE	FULL APPLICATION

2. Press **DIST POWER** on Gauges screen.

3. Press **LEAD SETUP**

4. Enter the **DP Remote** locomotive number using:



5. Press **LINK**

6. Simultaneously:
  - A penalty brake is initiated
  - Crew message displays:



7. Place **Automatic Brake** handle to **SUP** (Suppression).
  - Crew message displays:



- The above crew message may remain displayed for up to 2 minutes, no further action is required during this time.
8. Wait for **Linked OK** message to appear.
  9. Link to additional DP Remote(s) if required.

10. Press **DONE**

11. Wait for crew message to display:



12. Place **Automatic Brake** handle to **REL** (Release) to recover penalty and charge the air brake system.
  - Crew message displays:





OIM - DP Brake Pipe Test

1. Ensure **Reverser** is **centered** and **Automatic Brake** handle is in **REL** (Release).
2. Ensure Individual **Flow** is not **greater than 60 cfm** on the DP Lead or DP Remote(s).
3. Ensure sum of DP Lead and DP Remote(s) **Flow** is **90 cfm or less** and is stable for 1 min ( $\pm 1$  cfm).

	A-2538	B-2221
<b>RUN</b>		
THROTTLE	IDLE	IDLE
LOAD	0 A	0 K
BP	90	90
FLOW	10	20

Step 3 arrows point to the 90 and 20 values in the BP and FLOW rows.

**NOTE:** If Brake Pipe Test key is visible go to Step 7.

4. Press **DIST POWER** on Gauges screen.
5. Press **DP MAIN MENU**
6. Press **SYSTEM**
7. Press **BP TEST** **NOTE:** The Brake Pipe Test key is only visible when the train is stopped, Independent Brake is in FULL APPLICATION and the Automatic Brake in REL.
8. Press **EXEC**

- Crew message displays:

**BP TEST: SET AUTO BRAKE TO MIN SERVICE**

9. Place **Automatic Brake** handle to **exactly MIN** (Minimum Reduction) or test cannot be completed.
  - Crew message displays:

**BP TEST: IN PROGRESS**

- BP Test may take up to 3 minutes to complete. During this time DP System Mode will be in Idle.

The following is only applicable during DP Set Up.

- Crew message displays:

**BP TEST: OK, SELECT RUN MODE ON MODE SCREEN**

10. Set DP Mode to **RUN**.
  - a) Press **MAIN MENU** on Gauges screen.
  - b) Press **MODE**
  - c) Press **RUN**
  - d) Press **EXEC**
  - e) Press **EXIT** to return to the Gauges screen.

	A-2538	B-2221
<b>RUN</b>	← Step 10	
THROTTLE	IDLE	IDLE

**NOTE:** In the event of a Brake Pipe test failure, recharge the train and restart procedure from step 1.

**GE - DP Last Car Emergency Test**

1. Close angle cock between DP Lead consist and first car.
2. Close the angle cock ahead of the car coupled to the DP Remote consist.
3. Place **Automatic Brake** handle to **EMER** (Emergency).
  - Crew message displays:

**AUTOMATIC HANDLE EMERGENCY  
REMAIN IN EMERGENCY FOR 60 SECONDS**

4. Verify that DP Remote and last car go into emergency.
5. Ensure DP Remote **BP** is **0 psi** and **Flow** is **Out**.
6. After 60 seconds the crew message displays:

**DISTRIBUTED POWER EMERGENCY  
EMERGENCY STILL PRESENT**

- Remain in EMER (Emergency) position for another 30 seconds or until crew message displays:

**DISTRIBUTED POWER EMERGENCY  
TO RECOVER AIR BRAKE, GO TO RELEASE**

7. Place **Automatic Brake** handle to **REL** (Release).
  - **ER** and **BP** pressures return to **90 psi**.
8. Open the angle cock ahead of the car coupled to the DP Remote consist.
9. Open angle cock between DP Lead consist and first car.
  - Penalty brake will recover.
  - **Flow** will change from **OUT** to a **numeric value** once a rise of at least **3 psi** in **Brake Pipe** pressure is detected within 3 minutes.



**EMD - DP Last Car Emergency Test**

1. Close angle cock between DP Lead consist and first car.
2. Close the angle cock ahead of the car coupled to the DP Remote consist.
3. Place **Automatic Brake** handle to **EMER** (Emergency).
  - Crew message displays:

**AUTOMATIC HANDLE EMERGENCY  
REMAIN IN EMERGENCY FOR 60 SECONDS**

4. Verify that DP Remote and last car go into emergency.
5. Ensure DP Remote **BP** is **0 psi** and **Flow** is **Out**.
6. After 60 seconds the crew message displays:

**DISTRIBUTED POWER EMERGENCY  
EMERGENCY STILL PRESENT**

- Remain in EMER (Emergency) position for another 30 seconds or until crew message displays:

**DISTRIBUTED POWER EMERGENCY  
TO RECOVER AIR BRAKE, GO TO RELEASE**

7. Place **Automatic Brake** handle to **REL** (Release).
  - **ER** and **BP** pressures return to **90 psi**.
8. Open the angle cock ahead of the car coupled to the DP Remote consist.
9. Open angle cock between DP Lead consist and first car.
  - Penalty brake will recover.
  - **Flow** will change from **OUT** to a **numeric value** once a rise of at least **3 psi** in **Brake Pipe** pressure is detected within 3 minutes.





**OIM - DP Last Car Emergency Test**

1. Close angle cock between DP Lead consist and first car.
2. Close the angle cock ahead of the car coupled to the DP Remote consist.
3. Place **Automatic Brake** handle to **EMER** (Emergency).
  - Crew message displays:

**AUTOMATIC HANDLE EMERGENCY  
REMAIN IN EMERGENCY FOR 60 SECONDS**

4. Verify that DP Remote and last car go into emergency.
5. Ensure DP Remote **BP** is **0 psi** and **Flow** is **Out**.
6. After 60 seconds the crew message displays:

**DISTRIBUTED POWER EMERGENCY  
EMERGENCY STILL PRESENT**

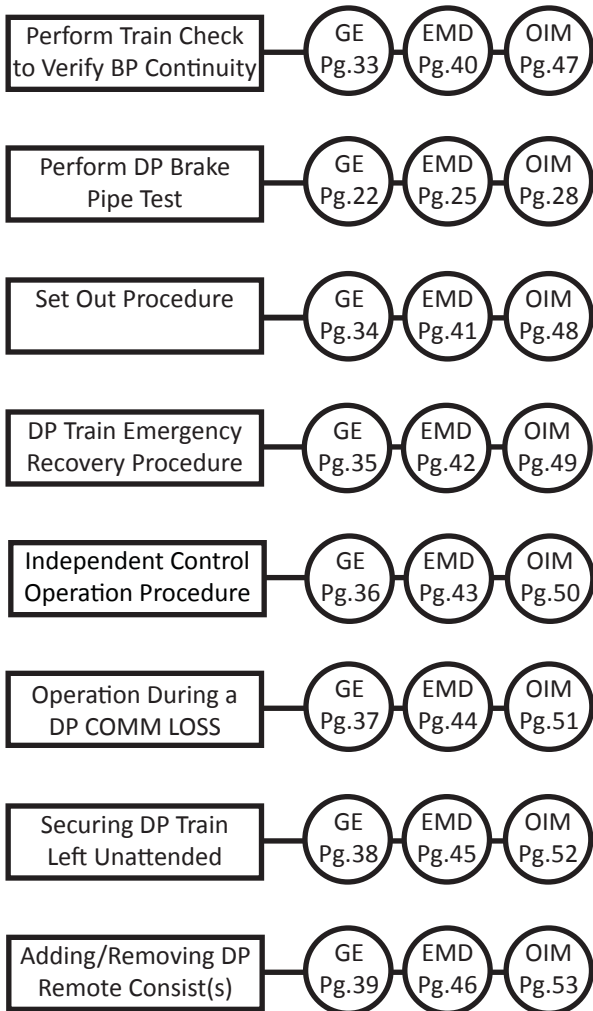
- Remain in EMER (Emergency) position for another 30 seconds or until crew message displays:

**DISTRIBUTED POWER EMERGENCY  
TO RECOVER AIR BRAKE, GO TO RELEASE**

7. Place **Automatic Brake** handle to **REL** (Release).
  - **ER** and **BP** pressures return to **90 psi**.
8. Open the angle cock ahead of the car coupled to the DP Remote consist.
9. Open angle cock between DP Lead consist and first car.
  - Penalty brake will recover.
  - **Flow** will change from **OUT** to a **numeric value** once a rise of at least **3 psi** in **Brake Pipe** pressure is detected within 3 minutes.

### DP En Route Requirements

The following chart outlines the process and procedures that must be completed or used during DP operations en route.

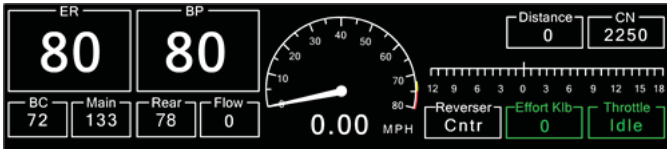




**GE - Train Check Procedure**

Train may proceed while the test is being performed.

1. Make a **10 psi or greater** brake pipe reduction with **Automatic Brake**. Train Check key will appear following the reduction.



2. Press **Distributed Power** on Gauges screen.
3. Press **DP Main Menu**
4. Press **SYSTEM**
5. Press **TRAIN CHECK**
6. Press **EXECUTE**

- Crew message displays:

**DP: TRAIN CHECK: CUTTING OUT BRAKE VALVES / WAIT**

- Followed by:

**DP: TRAIN CHECK: RELEASE AUTOMATIC BRAKE WHEN READY**

7. Place **Automatic Brake** handle to REL (Release).

- Crew message displays:

**DP: TRAIN CHECK: IN PROGRESS**

- If Train Check is successful crew message displays:

**DP: TRAIN CHECK: OK**

8. Press **EXIT** twice to return to the Gauges screen.

**NOTE:** If Train Check fails after 2 successive attempts, immediately inspect trainline for continuity.





GE - Set Out Procedure (Switching En Route)

Uncoupling

NOTE: The Set Out key will only appear if the locomotive is stopped and the Independent Brake is fully applied.

1. Place Independent Brake handle to FULL APPLICATION.
2. Place Automatic Brake handle to FULL (if needed).
3. On the Distributed Power Operation screen, press Remote Menu to access the Set Out key.

4. When linked to multiple Remotes:
  - Select the Remote(s) to be placed in S/O (Set-Out) mode using  

5. Press 



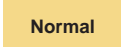

6. Press 

7. Verify DP Remote mode indicates S/O and Flow indicates OUT.

ID	A-2221	B-2220
Throttle	Idle	Idle
Load TE	0 K	0 K
Consist TE	1:1 0K	---
BP	64	64
Flow	0	Out
Remote		S/O

*← Step 7*

Recoupling

1. Place Independent Brake handle to FULL APPLICATION (if needed).
2. On the Distributed Power Operation screen, press Remote Menu to access the Normal key.
3. When linked to multiple Remotes:
  - Select the Remote(s) to be placed in Norm (Normal) mode using  
4. Press 
5. Press 
6. Verify DP Remote mode indicates Norm (Normal).
7. Slowly open angle cocks and allow brake pipe to recharge.
8. Verify Flow indicates a numeric value.

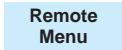


**GE - Emergency Recovery Procedure**

If an emergency brake application occurs on a DP train, the DP Remote(s) must immediately be placed in **S/O** (Set Out) mode after the train is stopped.

1. Place **Independent Brake** handle to **FULL APPLICATION**.

2. On the Distributed Power Operation screen, press

 to access the Set Out key.

3. When linked to multiple Remotes:

- Select the Remote(s) to be placed in **S/O** (Set Out)

mode using  

4. Press 

5. Press 

6. Verify DP Remote mode indicates **S/O** (Set Out) and **Flow** indicates **OUT**.

ID	A-2221	B-2220
Throttle	Idle	Idle
Load TE	0 K	0 K
Consist TE	1:1 0K	--- ---
BP	0	0
Flow	0	Out ← Step 6
Remote		S/O

7. Recover the emergency brake.


An increase in Brake Pipe (BP) pressure on the DP Remote (as seen on the DP Operation screen) confirms continuity between the DP Lead and the DP Remote. An increase in BP pressure on the HOT/IDU confirms continuity between the DP Remote and the tail end of the train.

**NOTE:** During this time, the DP Remote(s) will continue to display the PCS icon.

If BP pressure fails to increase on the DP Remote, it must remain in **S/O** (Set Out) mode until continuity is re-established.

When continuity has been re-established and the BP pressure begins to increase on the DP Remote, immediately place the Remote to Normal mode.

1. On the Distributed Power Operation screen,

press  to access the Normal key.

2. When linked to multiple Remotes:

- Select the Remote(s) to be placed in **Norm** (Normal)

mode using  

3. Press 

4. Press 

5. Verify DP Remote mode indicates **Norm** (Normal).

6. Verify **Flow** indicates a **numeric value**.

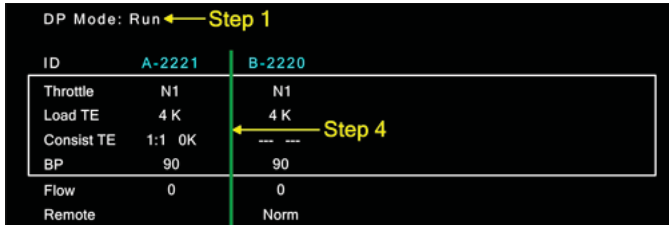


GE - Independent Control Procedure

1. Ensure DP system mode is set to Run.
2. Press **Control Menu** (if visible).
3. Press **Move to Back**

**NOTE:** When linked to multiple remotes and the DP Remote consist is placed in the Back group, all DP Remote consist(s) to the rear are automatically placed in the Back group.

4. Verify that the divider line appears between the "A" Lead and the "B" DP Remote.



5. Press **Traction** or **Brake**
6. Press **EXECUTE**

**NOTE:** The DP system will not allow the DP Remote to brake if the DP Lead is in traction.

7. Press **More Traction** or **More Brake** as required.

The Locomotive Engineer must pay particular attention to the train profile page(s) of the train journal to familiarize themselves with the marshalling of their train, in particular the number and location of any cars equipped with EOC (end of car cushioning).

The Locomotive Engineer must know the location of the DP Remote consist in the train for effective use of the DMD (distance measuring device) while operating in independent control. The location of the DP Remote consist is found on the train journal.

The throttle and dynamic brake settings must be constantly monitored on the DP Lead consist and the DP Remote consist. The following guidelines must be adhered to:

- a) To keep the train slack bunched, the DP Remote consist should remain in a higher throttle position than the DP Lead consist except when bunching slack only from the DP Lead consist while in Dynamic Brake.
  - b) The DP Lead throttle setting must not be more than 5 positions higher than the DP Remote's throttle setting. For example: If DP Lead throttle set at 8, the DP Remote throttle must be set at 3 or higher.
8. Press **Move to Front** to return to synchronous operation.



**GE - Operation During a DP COMM LOSS**

During a COMM LOSS, **COMM** appears above the Remote ID on Distributed Power Operation screen. If sustained, **COMM** is replaced by **COMM** and 2 audible beeps sound.



The DP Remote operating status displayed on the DP Operation screen will remain 'frozen' until DP communication is restored.

**COMM LOSS IDLE DOWN**

If it becomes necessary to initiate a COMM LOSS IDLE DOWN of a DP Remote consist, stop the train with a straight-away FULL SERVICE brake application. The train may then be moved for a maximum of 2 miles (in a state of comm loss) in an attempt to restore DP communications.

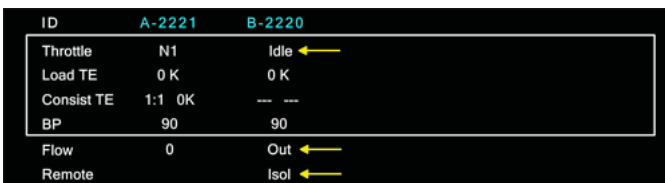
Performing a Comm Loss Idle Down does not nullify the dynamic brake on the DP Remote.

To nullify the dynamic brake on the DP Remote:

1. Stop the train and then initiate an emergency brake application.
2. Recover the air brakes at the DP Lead, as follows:
  - a) Allow the emergency / penalty timer to expire;
  - b) Place the automatic brake handle in the Release position.

When COMM is restored, the following information will be displayed on the DP Operations screen:

- Throttle on DP Remote indicates **Idle**.
- DP Remote Flow indicates **Out**.
- DP Remote mode indicates **Isol** (Isolate).



Once COMM is restored, return the DP Remote to Normal mode:

1. From the Distributed Power Operation screen:
  - Press **REMOTE MENU**
  - Press **NORMAL**
  - Press **EXECUTE**
  - The DP Remote mode changes from **Isol** (Isolate) to **Norm** (Normal).
2. Make a sufficient brake pipe reduction so that when released, a positive release will occur.
  - A **3 psi rise** in DP Remote BP pressure within 3 minutes will result in the cut in of the DP Remote brake valve and its **Flow** changing from **OUT** to a **numeric value**.



**GE - Securing DP Train Left Unattended**





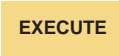
1. Place **Independent Brake** handle to **FULL APPLICATION**.
2. Make a **FULL SERVICE** brake application as per GOI requirements.
  - Allow brake pipe reduction to complete (equalize).
3. Set DP Mode to **IDLE**:
  - a) Press **Distributed Power** on the Gauges screen.
  - b) Press **DP Main Menu**
  - c) Press **MODE**
  - d) Press **IDLE**
  - e) Press **EXIT** to return to Gauges screen.
4. On the Distributed Power Operation screen verify the **DP Mode** status indicates **Idle** and the DP Remote **BC** pressure is **72 psi or greater**.
5. Secure train as per GOI and other applicable instructions.



## GE - Removing or Adding DP Remote Consist

### Removing DP Remote Consist

**NOTE:** The Set Out key will only appear if the locomotive is stopped and the **Independent Brake** is fully applied.

1. Place **Independent Brake** handle to **FULL APPLICATION**.
2. Place **Automatic Brake** handle to **FULL** (if needed).
3. On the Distributed Power Operation screen, press  to access the Set Out key.
4. When linked to multiple Remotes:
  - Select the Remote(s) to be placed in **S/O** (Set-Out) mode using  
5. Press .
6. Press .
7. Verify DP Remote mode indicates **S/O** and **Flow** indicates **OUT**.
8. Remove (Set Out) DP Remote consist.
9. End DP operation on the DP Lead by following procedure on page 55, *End DP Lead Unit*.
10. Re-link the DP Lead to all DP Remote consists remaining in the train by following procedure on page 21, *DP Lead Unit Set Up*.
11. Perform a DP Brake Pipe Test by following procedure on page 22, *DP Brake Pipe Test*.
12. End DP operation on each DP Remote consist removed from the train by following procedure on page 56, *End DP Remote Unit*.

**NOTE:** The Locomotive Engineer is responsible for ending DP operation on all DP Remote consists removed from the train unless relieved of this responsibility.

### Adding DP Remote Consist

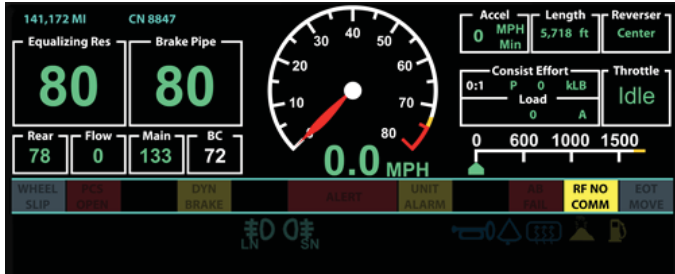
1. End DP operation on the DP Lead by following procedure on page 55, *End DP Lead Unit*.
2. Set up and link each DP Remote consist(s) to be added to the train by following procedure on page 20, *DP Remote Unit Set Up*.
3. Link the DP Lead to each DP Remote consist to be included in the train by following procedure on page 21, *DP Lead Unit Set Up*.
4. Perform a Direction Agreement Test on each DP Remote consist added by following procedure on page 9, *Direction Agreement Test-Multiple Remote Consists*.
5. Perform a DP Brake Pipe Test by following procedure on page 22, *DP Brake Pipe Test*.



EMD - Train Check Procedure

Train may proceed while the test is being performed.

1. Make a **10 psi or greater** brake pipe reduction with **Automatic Brake**. Train Check key will appear following the reduction.



2. Press **Distributed Power** on Gauges screen.
3. Press **SYSTEM**
4. Press **TRAIN CHECK**
5. Press **EXECUTE**

- Crew message displays:



- Followed by:



6. Place **Automatic Brake** handle to **REL** (Release).

- Crew message displays:



- If Train Check is successful crew message displays:




7. Press **Exit** to return to the Gauges screen.



**NOTE:** If Train Check fails after 2 successive attempts, immediately inspect trainline for continuity.

## EMD - Set Out Procedure (Switching En Route)

**Uncoupling**

**NOTE:** The Set Out key will only appear if the locomotive is stopped and the **Independent Brake** is fully applied.

1. Place **Independent Brake** handle to **FULL APPLICATION**.
2. Place **Automatic Brake** handle to **FULL** (if needed).
3. On the Distributed Power Operation screen, press  to access the Set Out key.

4. When linked to multiple Remotes:
  - Select the Remote(s) to be placed in **SET OUT** Mode using  

5. Press 

6. Press  when following prompt appears:





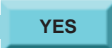
**Set Out: Execute Command?**

7. Verify DP Remote mode indicates **SET OUT** and **Flow** indicates **OUT**.

	FRONT	BACK
<b>RUN</b>	A-8821	B-8814
THROTTLE	IDLE	IDLE
LOAD	0 A	0 A
CONSIST	0:1 0K	N/A
BRAKE PIPE	64	64
FLOW	0	OUT
REMOTE	--	<b>SET OUT</b>

*Step 7* points to the SET OUT button in the REMOTE row.

**Recoupling**

1. Place **Independent Brake** handle to **FULL APPLICATION** (if needed).
2. On the Distributed Power Operation screen, press  to access the Normal key.
3. When linked to multiple Remotes:
  - Select the Remote to be placed in **NORM** (Normal) mode using  
  - Each remote must be placed in **NORM** (Normal) mode.
4. Press 
5. Press  when following prompt appears:
 

**Normal: Execute Command?**
6. Verify DP Remote mode indicates **NORM** (Normal).
7. Slowly open angle cocks and allow brake pipe to recharge.
8. Verify **Flow** indicates a **numeric value**.




**EMD - Emergency Recovery Procedure**



If an emergency brake application occurs on a DP train, the DP Remote(s) must immediately be placed in Set Out mode after the train is stopped.

1. Place **Independent Brake** handle to **FULL APPLICATION**.

2. On the Distributed Power Operation screen, press

 to access the Set Out key.

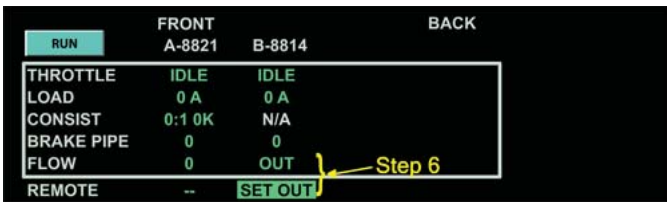
3. When linked to multiple Remotes:

- Select the Remote(s) to be placed in Set Out mode using  

4. Press 

5. Press 

6. Verify DP Remote mode indicates **SET OUT** and **Flow** indicates **OUT**.



7. Recover the emergency brake.


An increase in Brake Pipe (BP) pressure on the DP Remote (as seen on the DP Operation screen) confirms continuity between the DP Lead and the DP Remote. An increase in BP pressure on the HOT/IDU confirms continuity between the DP Remote and the tail end of the train.

**NOTE:** During this time, the DP Remote(s) will continue to display the PCS icon.



If BP pressure fails to increase on the DP Remote, it must remain in Set Out mode until continuity is re-established.

When continuity has been re-established and the BP pressure begins to increase on the DP Remote, immediately place the Remote to Normal mode.

1. On the Distributed Power Operation screen,

press  to access the Normal key.

2. When linked to multiple Remotes:

- Select the Remote(s) to be placed in **NORMAL** mode using  


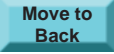
3. Press 

4. Press 

5. Verify DP Remote mode indicates **NORMAL**.

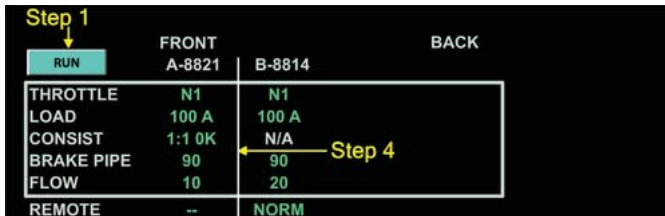
6. Verify **Flow** indicates a **numeric value**.

**EMD - Independent Control Procedure**


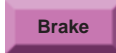
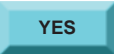
1. Ensure DP system mode is set to Run.
2. Press  (if visible).
3. Press .

**NOTE:** When linked to multiple remotes and the DP Remote consist is placed in the Back group, all DP Remote consist(s) to the rear are automatically placed in the Back group.

4. Verify that the divider line appears between the "A" Lead and the "B" DP Remote.



	FRONT A-8821	BACK B-8814
THROTTLE	N1	N1
LOAD	100 A	100 A
CONSIST	1:1 OK	N/A
BRAKE PIPE	90	90
FLOW	10	20
REMOTE	--	NORM

5. Press  or .
6. Press  when following prompt appears:

**TRACTION: Execute Command?**


**NOTE:** The DP system will not allow the DP Remote to brake if the DP Lead is in traction.

7. Press  or  as required.

The Locomotive Engineer must pay particular attention to the train profile page(s) of the train journal to familiarize themselves with the marshalling of their train, in particular the number and location of any cars equipped with EOC (end of car cushioning).

The Locomotive Engineer must know the location of the DP Remote consist in the train for effective use of the DMD (distance measuring device) while operating in independent control. The location of the DP Remote consist is found on the train journal.

The throttle and dynamic brake settings must be constantly monitored on the DP Lead consist and the DP Remote consist. The following guidelines must be adhered to:

- a) To keep the train slack bunched, the DP Remote consist should remain in a higher throttle position than the DP Lead consist except when bunching slack only from the DP Lead consist while in Dynamic Brake.
  - b) The DP Lead throttle setting must not be more than 5 positions higher than the DP Remote's throttle setting. For example: If DP Lead throttle set at 8, the DP Remote throttle must be set at 3 or higher.
8. Press  to return to synchronous operation.



**EMD - Operation During a DP COMM LOSS**

During a COMM LOSS, **COMM** appears above the Remote ID on Distributed Power Operation screen. If sustained, **COMM** is replaced by **COMM** and 2 audible beeps sound.



The DP Remote operating status displayed on the DP Operation screen will remain 'frozen' until DP communication is restored.

**COMM LOSS IDLE DOWN**

If it becomes necessary to initiate a COMM LOSS IDLE DOWN of a DP Remote consist, stop the train with a straight-away FULL SERVICE brake application. The train may then be moved for a maximum of 2 miles (in a state of comm loss) in an attempt to restore DP communications.

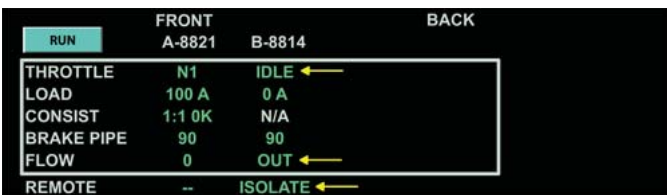
Performing a Comm Loss Idle Down does not nullify the dynamic brake on the DP Remote.

To nullify the dynamic brake on the DP Remote:

1. Stop the train and then initiate an emergency brake application.
2. Recover the air brakes at the DP Lead, as follows:
  - a) Allow the emergency / penalty timer to expire;
  - b) Place the automatic brake handle in the Release position.

When COMM is restored, the following information will be displayed on the DP Operations screen:





- Throttle on DP Remote indicates **IDLE**.
- DP Remote Flow indicates **OUT**.
- DP Remote mode indicates **ISOLATE**.



Once COMM is restored, return the DP Remote to Normal mode:

3. From the Distributed Power Operation screen:
  - Press **REMOTE MENU**
  - Press **NORMAL**
  - Press **YES**
  - The DP Remote mode changes from **ISOLATE** to **NORMAL**.
4. Make a sufficient brake pipe reduction so that when released, a positive release will occur.
  - A **3 psi rise** in DP Remote BP pressure within 3 minutes will result in the cut in of the DP Remote brake valve and its **Flow** changing from **OUT** to a **numeric value**.

**EMD - Securing DP Train Left Unattended**





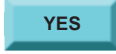
1. Place **Independent Brake** handle to **FULL APPLICATION**.
2. Make a **FULL SERVICE** brake application as per GOI requirements.
  - Allow brake pipe reduction to complete (equalize).
3. Set DP Mode to **IDLE**:
  - a) Press  on Gauges screen.
  - b) Press .
  - c) Press .
  - d) Press  to return to the Gauges screen.
4. On the Distributed Power Operation screen verify the **DP Mode** status indicates **IDLE** and the DP Remote **BC** pressure is **72 psi or greater**.
5. Secure train as per GOI and other applicable instructions.



## EMD - Removing or Adding DP Remote Consist

**Removing DP Remote Consist**

**NOTE:** The Set Out key will only appear if the locomotive is stopped and the **Independent Brake** is fully applied.

1. Place **Independent Brake** handle to **FULL APPLICATION**.
2. Place **Automatic Brake** handle to **FULL** (if needed).
3. On the Distributed Power Operation screen, press  to access the Set Out key.
4. When linked to multiple Remotes:
  - Select the Remote(s) to be placed in **SET OUT** Mode using  
5. Press 
6. Press  when following prompt appears:  
**Set Out: Execute Command?**
7. Verify DP Remote mode indicates **SET OUT** and **Flow** indicates **OUT**.
8. Remove (Set Out) DP Remote consist.
9. End DP operation on the DP Lead by following procedure on page 57, *End DP Lead Unit*.
10. Re-link the DP Lead to all DP Remote consists remaining in the train by following procedure on page 24, *DP Lead Unit Set Up*.
11. Perform a DP Brake Pipe Test by following procedure on page 25, *DP Brake Pipe Test*.
12. End DP operation on each DP Remote consist removed from the train by following procedure on page 58, *End DP Remote Unit*.

**NOTE:** The Locomotive Engineer is responsible for ending DP operation on all DP Remote consists removed from the train unless relieved of this responsibility.

**Adding DP Remote Consist**

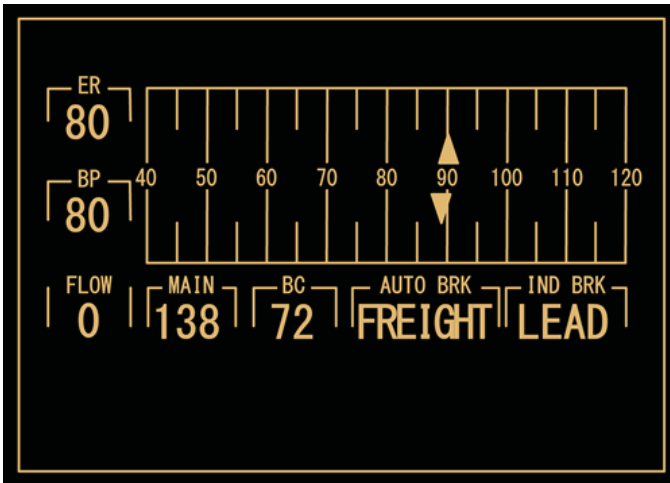
1. End DP operation on the DP Lead by following procedure on page 57, *End DP Lead Unit*.
2. Set up and link each DP Remote consist(s) to be added to the train by following procedure on page 23, *DP Remote Unit Set Up*.
3. Link the DP Lead to all DP Remote consists to be included in the train by following procedure on page 24, *DP Lead Unit Set Up*.
4. Perform a Direction Agreement Test on each DP Remote consist added by following procedure on page 13, *Direction Agreement Test-Multiple Remote Consists*.
5. Perform a DP Brake Pipe Test by following procedure on page 25, *DP Brake Pipe Test*.



## OIM - Train Check Procedure

Train may proceed while the test is being performed.

1. Make a **10 psi or greater** brake pipe reduction with **Automatic Brake**. Train Check key will appear following the reduction.



2. Press **MAIN MENU** on Gauges screen.

3. Press **SYSTEM**

4. Press **TRAIN CHECK**

5. Press **EXEC**

- Crew message displays:

TRAIN CHECK: CUTTING OUT BRAKE VALVES / WAIT

- Followed by:

TRAIN CHECK: RELEASE AUTOMATIC BRAKE WHEN READY

6. Place **Automatic Brake** handle to **REL** (Release).

- Crew message displays:

TRAIN CHECK: IN PROGRESS

- If Train Check is successful crew message displays:

TRAIN CHECK: OK

7. Press **EXIT** twice to return to the Gauges screen.

**NOTE:** If Train Check fails after 2 successive attempts, immediately inspect trainline for continuity.



OIM - Set Out Procedure (Switching En Route)

Uncoupling

NOTE: The Set Out key will only appear if the locomotive is stopped and the Independent Brake handle is fully applied.

1. Place Independent Brake handle to FULL APPLICATION.
2. Place Automatic Brake handle to FULL (if needed).
3. On the Distributed Power Operation screen, press

REMOTE MENU to access the Set Out key.

4. When linked to multiple Remotes:
  - Select the Remote(s) to be placed in S/O (Set-Out)

mode using ← →

5. Press SET OUT

6. Press EXEC

7. Verify DP Remote mode indicates S/O and Flow indicates OUT.

	A-2538	B-2221
RUN		
THROTTLE	IDLE	IDLE
LOAD	0 A	0 K
BP	64	64
FLOW	0	OUT
REMOTE		S/O

Step 7 points to the 'OUT' value in the FLOW row.






Recoupling

1. Place Independent Brake handle to FULL APPLICATION (if needed).
2. On the Distribution Power Operation screen, press REMOTE MENU to access the Normal key.
3. When linked to multiple Remotes:
  - Select the Remote(s) to be placed in NORM (Normal)
 mode using ← →
4. Press NORMAL
5. Press EXEC
6. Verify DP Remote mode indicates NORM (Normal).
7. Slowly open angle cocks and allow brake pipe to recharge.
8. Verify Flow indicates a numeric value.



**OIM - Emergency Recovery Procedure**

If an emergency brake application occurs on a DP train, the DP Remote(s) must immediately be placed in **S/O** (Set Out) mode after the train is stopped.

1. Place **Independent Brake** handle to **FULL APPLICATION**.
2. On the Distributed Power Operation screen, press  to access the Set Out key.
3. When linked to multiple Remotes:
  - Select the Remote(s) to be placed in **S/O** (Set Out) mode using  
4. Press 
5. Press 
6. Verify DP Remote mode indicates **S/O** (Set Out) and **Flow** indicates **OUT**.

	A-2538	B-2221
<b>RUN</b>		
THROTTLE	IDLE	IDLE
LOAD	0 A	0 K
BP	0	0
FLOW	0	OUT
REMOTE		S/O

*Note: A yellow arrow points from the text "Step 6" to the "OUT" value in the FLOW row and the "S/O" value in the REMOTE row.*






7. Recover the emergency brake.

An increase in Brake Pipe (BP) pressure on the DP Remote (as seen on the DP Operation screen) confirms continuity between the DP Lead and the DP Remote. An increase in BP pressure on the HOT/IDU confirms continuity between the DP Remote and the tail end of the train.

**NOTE:** During this time, the DP Remote(s) will continue to display the PCS icon.

If BP pressure fails to increase on the DP Remote, it must remain in **S/O** (Set Out) mode until continuity is re-established.

When continuity has been re-established and the BP pressure begins to increase on the DP Remote, immediately place the Remote to Normal mode.

1. On the Distributed Power Operation screen, press  to access the Normal key.
2. When linked to multiple Remotes:
  - Select the Remote(s) to be placed in **Norm** (Normal) mode using  
3. Press 
4. Press 
5. Verify DP Remote mode indicates **Norm** (Normal).
6. Verify **Flow** indicates a **numeric value**.



OIM - Independent Control Procedure

1. Ensure DP system mode is set to Run.

2. Press **MAIN MENU** (if visible).

3. Press **BACK**

**NOTE:** When linked to multiple remotes and the DP Remote consist is placed in the Back group, all DP Remote consist(s) to the rear are automatically placed in the Back group.

4. Verify that the divider line appears between the "A" Lead and the "B" DP Remote.

	A-2538	B-2221
<b>RUN</b>	← Step 1	
THROTTLE	N1	N1
LOAD	100 A	← 4 K Step 4
BP	90	90
FLOW	0	0
REMOTE	--	NORM

5. Press **TRCTN** or **BRAKE**

6. Press **EXEC**

**NOTE:** The DP system will not allow the DP Remote to brake if the DP Lead is in traction.

7. Press **TRCTN +** or **BRAKE +** as required.

The Locomotive Engineer must pay particular attention to the train profile page(s) of the train journal to familiarize themselves with the marshalling of their train, in particular the number and location of any cars equipped with EOC (end of car cushioning).

The Locomotive Engineer must know the location of the DP Remote consist in the train for effective use of the DMD (distance measuring device) while operating in independent control. The location of the DP Remote consist is found on the train journal.

The throttle and dynamic brake settings must be constantly monitored on the DP Lead consist and the DP Remote consist. The following guidelines must be adhered to:

- a) To keep the train slack bunched, the DP Remote consist should remain in a higher throttle position than the DP Lead consist except when bunching slack only from the DP Lead consist while in Dynamic Brake.
- b) The DP Lead throttle setting must not be more than 5 positions higher than the DP Remote's throttle setting. For example: If DP Lead throttle set at 8, the DP Remote throttle must be set at 3 or higher.

8. Press **FRONT** to return to synchronous operation.



**OIM - Operation During a DP COMM LOSS**

During a COMM LOSS, **COMM** appears above the Remote ID on Distributed Power Operation screen. If sustained, **COMM** is replaced by **COMM** and 2 audible beeps sound.

	A-2538	B-2280
		<b>COMM</b>
THROTTLE	N1	N1

The DP Remote operating status displayed on the DP Operation screen will remain 'frozen' until DP communication is restored.

**COMM LOSS IDLE DOWN**

If it becomes necessary to initiate a COMM LOSS IDLE DOWN of a DP Remote consist, stop the train with a straight-away FULL SERVICE brake application. The train may then be moved for a maximum of 2 miles (in a state of comm loss) in an attempt to restore DP communications.

Performing a Comm Loss Idle Down does not nullify the dynamic brake on the DP Remote.

To nullify the dynamic brake on the DP Remote:

1. Stop the train and then initiate an emergency brake application.
2. Recover the air brakes at the DP Lead, as follows:
  - a) Allow the emergency / penalty timer to expire;
  - b) Place the automatic brake handle in the Release position.

When COMM is restored, the following information will be displayed on the DP Operations screen:

- Throttle on DP Remote indicates **IDLE**.
- DP Remote Flow indicates **OUT**.
- DP Remote mode indicates **ISO** (Isolate).





	A-2538	B-2221
<b>RUN</b>		
THROTTLE	N1	IDLE ←
LOAD	100 A	0 K
BP	90	90
FLOW	0	OUT ←
REMOTE		ISOL ←

Once COMM is restored, return the DP Remote to Normal mode:

3. From the Distributed Power Operation screen:
  - Press **REMOTE MENU**
  - Press **NORMAL**
  - Press **EXEC**
  - The DP Remote mode changes from **ISO** (Isolate) to **NORM** (Normal).
4. Make a sufficient brake pipe reduction so that when released, a positive release will occur.
  - A **3 psi rise** in DP Remote BP pressure within 3 minutes will result in the cut in of the DP Remote brake valve and its **Flow** changing from **OUT** to a **numeric value**.








**OIM - Securing DP Train Left Unattended**

1. Place **Independent Brake** handle to **FULL APPLICATION**.
2. Make a **FULL SERVICE** brake application as per GOI requirements.
  - Allow brake pipe reduction to complete (equalize).
3. Set DP Mode to **IDLE**:
  - a) Press  on Gauges screen.
  - b) Press .
  - c) Press .
  - d) Press  to return to the Gauges screen.
4. On the Distributed Power Operation screen verify the **DP Mode** status indicates **Idle** and the DP Remote **BC** pressure is **72 psi or greater**.
5. Secure train as per GOI and other applicable instructions.

## OIM - Removing or Adding DP Remote Consist

**Removing DP Remote Consist**

**NOTE:** The Set Out key will only appear if the locomotive is stopped and the **Independent Brake** is fully applied.

1. Place **Independent Brake** handle to **FULL APPLICATION**.
2. Place **Automatic Brake** handle to **FULL** (if needed).
3. On the Distributed Power Operation screen, press  to access the Set Out key.
4. When linked to multiple Remotes:
  - Select the Remote(s) to be placed in **S/O** (Set-Out) mode using  
5. Press .
6. Press .
7. Verify DP Remote mode indicates **S/O** and **Flow** indicates **OUT**.
8. Remove (Set Out) DP Remote consist.
9. End DP operation on the DP Lead by following procedure on page 59, *End DP Lead Unit*.
10. Re-link the DP Lead to all DP Remote consists remaining in the train by following procedure on page 27, *DP Lead Unit Set Up*.
11. Perform a DP Brake Pipe Test by following procedure on page 28, *DP Brake Pipe Test*.
12. End DP operation on each DP Remote consist removed from the train by following procedure on page 60, *End DP Remote Unit*.

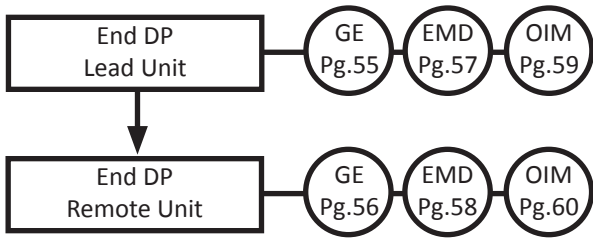
**NOTE:** The Locomotive Engineer is responsible for ending DP operation on all DP Remote consists removed from the train unless relieved of this responsibility.

**Adding DP Remote Consist**

1. End DP operation on the DP Lead by following procedure on page 59, *End DP Lead Unit*.
2. Set up and link each DP Remote consist(s) to be added to the train by following procedure on page 26, *DP Remote Unit Set Up*.
3. Link the DP Lead to all DP Remote consists to be included in the train by following procedure on page 27, *DP Lead Unit Set Up*.
4. Perform a Direction Agreement Test on each DP Remote consist added by following procedure on page 17, *Direction Agreement Test-Multiple Remote Consists*.
5. Perform a DP Brake Pipe Test by following procedure on page 28, *DP Brake Pipe Test*.

### Terminating Distributed Power Operations

The following chart outlines the procedures that must be completed when terminating DP operations.







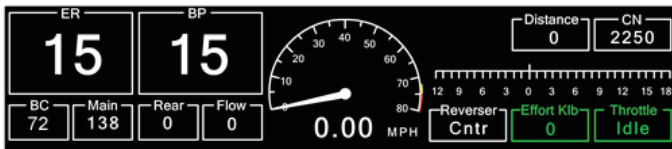
**GE - End DP Lead Unit**

1. Place **Independent Brake** handle to **FULL APPLICATION**.
2. From the Gauges screen, press **Distributed Power**
3. Press **DP Main Menu**
4. Press **END DIST PWR**
5. Press **EXECUTE**

- Crew message displays:

**DP UNLINKING – WAIT.**

- The **ER** (Equalizing Reservoir) and **BP** (Brake Pipe) pressure will reduce to **15 psi**.



- Crew message displays:

**DISTRIBUTED POWER LINK / UNLINK PENALTY TO CLEAR PENALTY GO TO SUPPRESSION**

6. Place **Automatic Brake** handle to **SUP** (Suppression).

- Crew message displays:



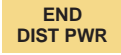

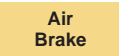

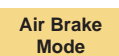


**DISTRIBUTED POWER LINK / UNLINK PENALTY REMAIN IN SUPPRESSION FOR 8 SECONDS**

7. When crew message disappears, place **Automatic Brake** handle to **REL** (Release).

**NOTE:** Should an emergency brake application occur at this point, follow the crew message prompts to recover the emergency brake.



GE - End DP Remote Unit

1. Place **Independent Brake** handle to **FULL**.
2. From the Gauges screen, press 
3. Press 
4. Press 
5. Press 
6. Set air brake for conventional Lead operation:
  - a) Press 
  - b) Press 
  - c) Press 
    - Verify **Auto Brk** status indicator changes from **Cut Out** to **Freight**.
  - d) Press 
  - e) Confirm new set up by pressing  again.

## EMD - End DP Lead Unit

1. Place **Independent Brake** handle to **FULL APPLICATION**.

2. From the Gauges screen, press **Distributed Power**

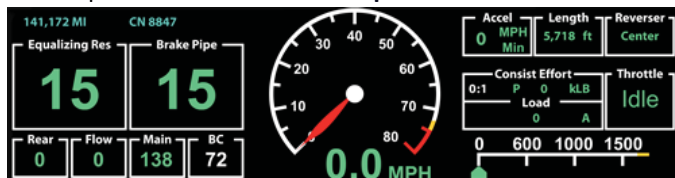
3. Press **END DIST PWR**

4. Press **EXECUTE**

- The crew message displays:

**UNLINKING – WAIT.**

- The **ER** (Equalizing Reservoir) and **BP** (Brake Pipe) pressure will reduce to **15 psi**.



- Crew message displays:

**DISTRIBUTED POWER LINK / UNLINK PENALTY TO CLEAR PENALTY GO TO SUPPRESSION**

5. Place **Automatic Brake** handle to **SUP** (Suppression).

- Crew message displays:

**DISTRIBUTED POWER LINK / UNLINK PENALTY REMAIN IN SUPPRESSION FOR 8 SECONDS**


6. When crew message disappears, place **Automatic Brake** handle to **REL** (Release).

**NOTE:** Should an emergency brake application occur at this point, follow the crew message prompts to recover the emergency brake.



EMD - End DP Remote Unit

1. Place **Independent Brake** handle to **FULL APPLICATION**.

2. From the Gauges screen, press 

3. Press 

4. Press 

5. Set air brake for conventional Lead operation:

a) Press 

b) Press 





c) Press 

d) Press  twice to accept changes.

- Verify **AIR BRAKE SETUP** changes from **LEAD - CUT OUT** to **LEAD - CUT IN**.

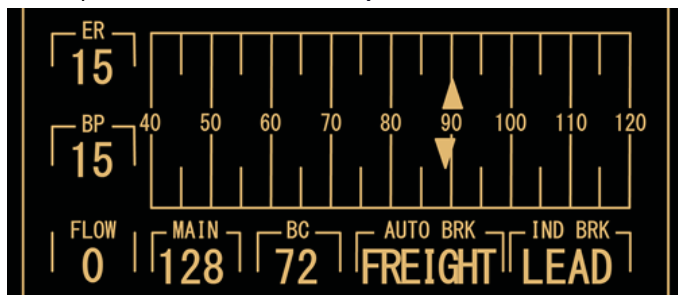


OIM - End DP Lead Unit

1. Place **Independent Brake** handle to **FULL APPLICATION**.
2. From the Gauges screen, press 
3. Press 
4. Press 
5. Press 
  - Crew message displays:

**DP UNLINKING - WAIT.**

- The **ER** (Equalizing Reservoir) and **BP** (Brake Pipe) pressure will reduce to **15 psi**.



- Crew message displays:

**DISTRIBUTED POWER LINK / UNLINK PENALTY  
TO CLEAR PENALTY GO TO SUPPRESSION**

6. Place **Automatic Brake** handle to **SUP** (Suppression).
  - Crew message displays:








**DISTRIBUTED POWER LINK / UNLINK PENALTY  
REMAIN IN SUPPRESSION FOR 8 SECONDS**

7. When crew message disappears, place **Automatic Brake** handle to **REL** (Release).

**NOTE:** Should an emergency brake application occur at this point, follow the crew message prompts to recover the emergency brake.



OIM - End DP Remote Unit

1. Place **Independent Brake** handle to **FULL APPLICATION**.
2. From the Gauges screen, press 
3. Press 
4. Press 
5. Press 
6. Set air brake for conventional Lead operation:
  - a) Press 
  - b) Press 
  - c) Press 
    - Verify **AUTO BRK** status indicator changes from **CUT OUT** to **FREIGHT**.





October 2010