

# JGW-D1503901 - In-Vacuum Cable Detail - Sheet 01

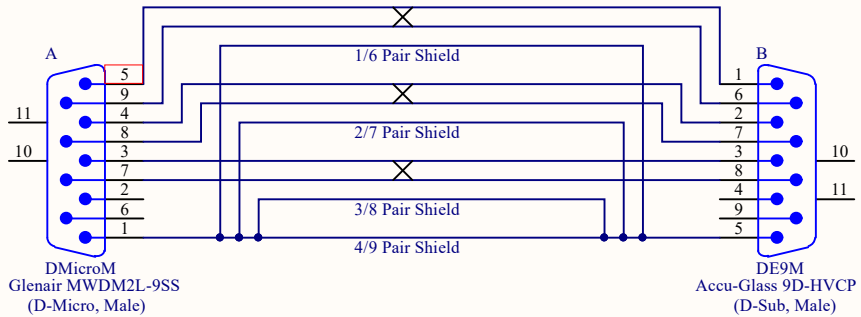
## Test Mass OSEM to Bottom Filter Cable

Incorporates flip to correct flexicircuit issue!!!

Gore GSC-06-27305-00  
 Four AWG32 twisted pairs with individual shields, PTFE coated  
 Three of four twisted pairs used, plus shield of fourth.

Notes:

1. Used in BS, PR2, PR3, PRM, EXA, EYA suspensions.
2. Connects OSEMs at intermediate mass level to breakpoint at bottom filter level.
3. The 4/9 pair is unused and can be left unconnected or made the same as the others - whatever is easiest.
4. Note grounding.



Title		
In-Vacuum Cable Detail - TM OSEM to BF		
Size	Number	Revision
A4	JGW-D1503901	v2
Date:	2016/04/12	Sheet01 of 24
File:	\\.\01 TM OSEM to BF.SchDoc	Drawn By: Mark Barton

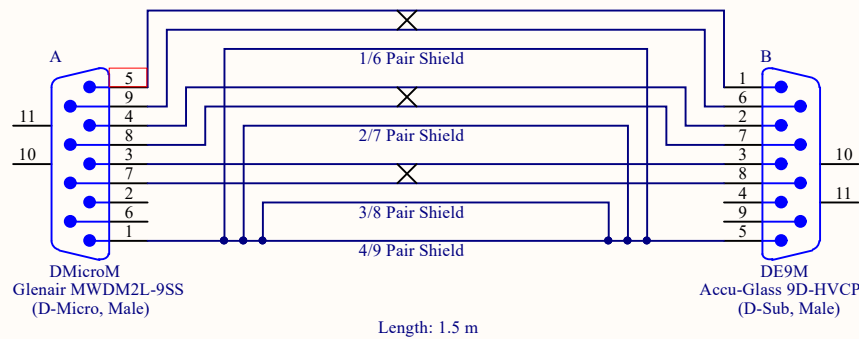
## JGW-D1503901 In-Vacuum Cable Detail - Sheet 02

### Intermediate Mass OSEM to Bottom Filter Cable

Gore GSC-06-27305-00  
Four AWG32 twisted pairs with individual shields, PTFE coated

Three of four twisted pairs used, plus shield of fourth.

Incorporates flip to correct flexicircuit issue!!!



**Notes:**

1. Used in BS, PR2, PR3, PRM, EXA, EYA suspensions.
2. Connects OSEMs at test mass level to breakpoint at bottom filter level.
3. The 4/9 pair is unused and can be left unconnected or made the same as the others - whatever is easiest.
4. Note grounding.

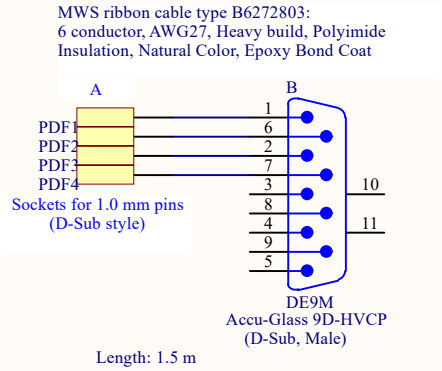
Title		
In-Vacuum Cable Detail - IM OSEM to BF		
Size	Number	Revision
A4	JGW-D1503901	v2
Date:	2016/04/12	Sheet02 of 24
File:	\\.\02 IM OSEM to BF.SchDoc	Drawn By: Mark Barton

# JGW-D1503901 - In-Vacuum Cable Detail - Sheet 03

## Intermediate Mass Picomotor to Bottom Filter Cable

**Notes:**

1. Used in BS, PR2, PR3, PRM, EXA, EYA suspensions.
2. Connects picomotors at intermediate mass level to breakpoint at bottom filter level.



Title In-Vacuum Cable Detail - IM Pico to BF		
Size A4	Number JGW-D1503901	Revision v2
Date: 2016/04/12	Sheet03 of 24	
File: \\.\03 IM Pico Adapter.SchDoc	Drawn By: Mark Barton	

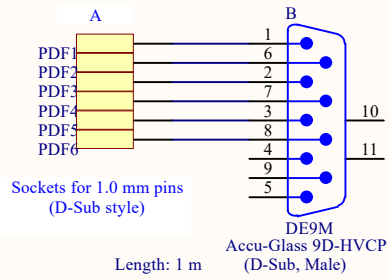
# JGW-D1503901 - In-Vacuum Cable Detail - Sheet 04

## Bottom Filter Picomotor Adapter

**Notes:**

1. Used in BS, PR2, PR3, PRM, EXA, EYA suspensions.
2. Connects picomotors in bottom filter level to breakpoint outside.

MWS ribbon cable type B6272803:  
 6 conductor, AWG27, Heavy build, Polyimide  
 Insulation, Natural Color, Epoxy Bond Coat

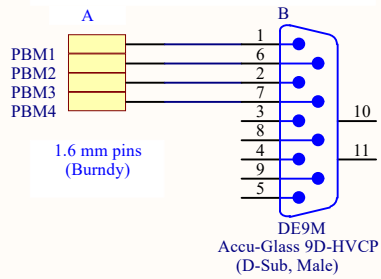


Title In-Vacuum Cable Detail - BF Pico Adpater		
Size A4	Number JGW-D1503901	Revision v2
Date:	2016/04/12	Sheet04 of 24
File:	\\.\04 BF Pico Adapter.SchDoc	Drawn By: Mark Barton

# JGW-D1503901 - In-Vacuum Cable Detail - Sheet 05

## Bottom/Standard Filter Stepper Adapter

MWS ribbon cable type B6272803:  
 6 conductor, AWG27, Heavy build, Polyimide  
 Insulation, Natural Color, Epoxy Bond Coat



1.6 mm pins  
(Burdy)

Length: 1 m

**Notes:**

1. Used in BS, PR2, PR3, PRM, EXA, EYA suspensions.
2. Connects steppers in bottom or standard filter to breakpoint outside.
3. The 1/6 and 3/8 pairs should be twisted if it's easy, but it's not required.
4. Pins 3, 8, 4, 9 and 5 are unused. It's not important that they be physically disconnected from any ribbon cable conductors.

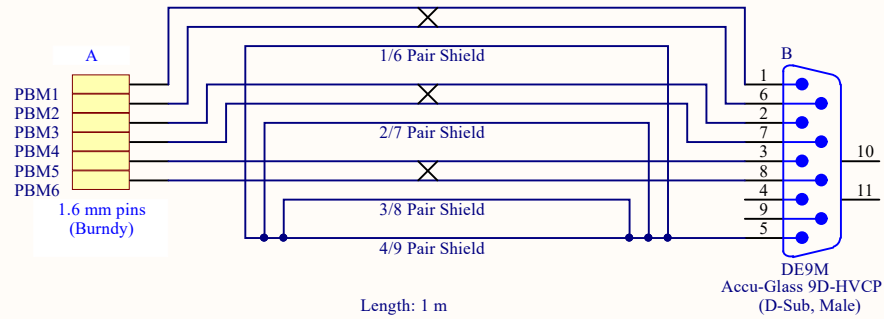
Title In-Vacuum Cable Detail - BF/SF Stepper Adapter		
Size A4	Number JGW-D1503901	Revision v2
Date:	2016/04/12	Sheet05 of 24
File:	\\.\05 BF&SF Stepper Adapter.SchDoc	Drawn By: Mark Barton

# JGW-D1503901 - In-Vacuum Cable Detail - Sheet 06

## Bottom/Standard Filter LVDT Adapter

Gore GSC-06-27305-00  
 Four AWG32 twisted pairs with individual shields, PTFE coated

Three of four twisted pairs used, plus shield of fourth.



**Notes:**

1. Used in BS, PR2, PR3, PRM, EXA, EYA suspensions.
2. Connects LVDTs in bottom filter and (except EXA/EYA) standard filter to breakpoint outside.
3. Pins 4 and 9 are unused.

Title In-Vacuum Cable Detail - BF/SF LVDT Adapter		
Size A4	Number JGW-D1503901	Revision v2
Date:	2016/04/12	Sheet06of 24
File:	\\..06 BF&SF LVDT Adapter.SchDoc	Drawn By: Mark Barton

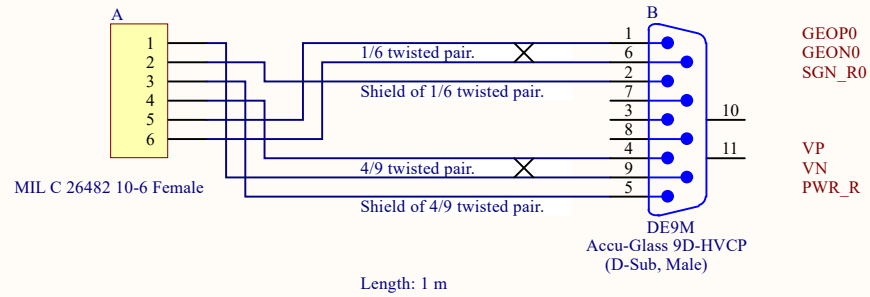
# JGW-D1503901 - In-Vacuum Cable Detail - Sheet 07

## Geophone Adapter

**Notes:**

1. Used in BS suspension.
2. Adapter for geophone canister to D-Sub at breakpoint on PI.

Gore GSC-06-27305-00  
 Four AWG32 twisted pairs with individual shields, PTFE coated  
 Two of four twisted pairs used.



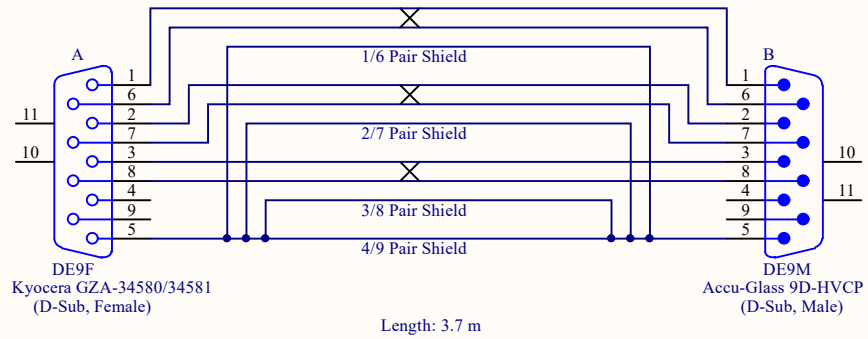
GEO\_P0  
 GEON\_0  
 SGN\_R0  
  
 VP  
 VN  
 PWR\_R

Title		
In-Vacuum Cable Detail - Geophone Adapter		
Size	Number	Revision
A4	JGW-D1503901	v2
Date:	2016/04/12	Sheet 07 of 24
File:	\\.\07 Geophone Adapter.SchDoc	Drawn By: Mark Barton

# JGW-D1503901 - In-Vacuum Cable Detail - Sheet 08

## Bottom Filter to Preisolator Signal Cable

Gore GSC-06-27305-00  
 Four AWG32 twisted pairs with individual shields, PTFE coated  
  
 Three of four twisted pairs used, plus shield of fourth.



**Notes:**

1. Used in BS suspension.
2. Takes sensitive signals (OSEM, LVDT) from breakpoint on BF to breakpoint on PI.
3. Pins 4 and 9 are unused.

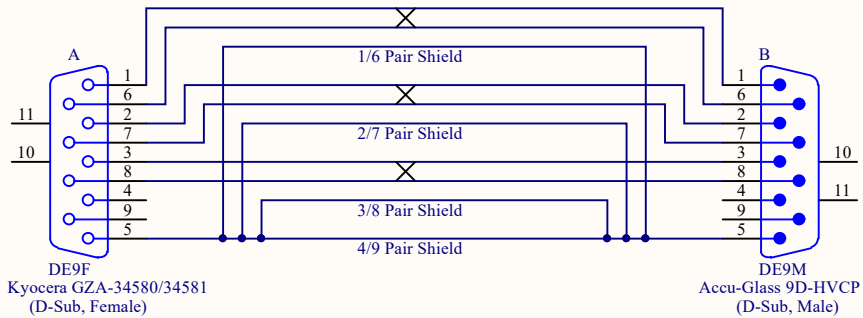
Title		
In-Vacuum Cable Detail - BF to PI Signal Cable		
Size	Number	Revision
A4	JGW-D1503901	v2
Date:	2016/04/12	Sheet08 of 24
File:	\\.\08 BF-PI Signal Cable.SchDoc	Drawn By: Mark Barton



# JGW-D1503901 - In-Vacuum Cable Detail - Sheet 09

## Standard Filter to Preisolator Signal Cable

Gore GSC-06-27305-00  
 Four AWG32 twisted pairs with individual shields, PTFE coated  
 Three of four twisted pairs used, plus shield of fourth.



Length: 2.5 m

**Notes:**

1. Used in BS suspension.
2. Takes sensitive LVDT signals from breakpoint on SF to breakpoint on PI.
3. Pins 4 and 9 are unused.

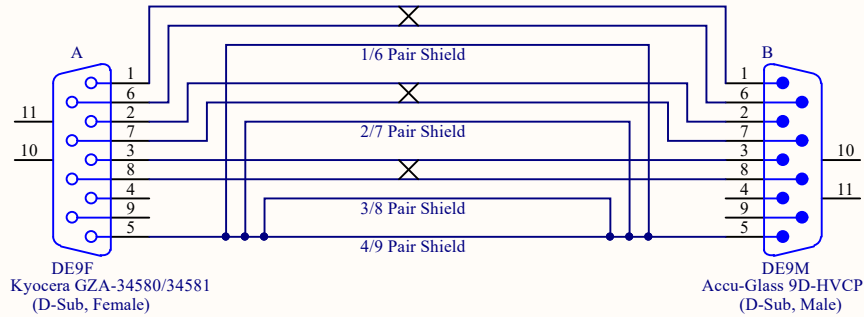
Title In-Vacuum Cable Detail - SF to PI Signal Cable		
Size A4	Number JGW-D1503901	Revision v2
Date:	2016/04/12	Sheet09 of 24
File:	\\.\09 SF-PI Signal Cable.SchDoc	Drawn By: Mark Barton

# JGW-D1503901 - In-Vacuum Cable Detail - Sheet 10

## Signal Cable Extension

Gore GSC-06-27305-00  
 Four AWG32 twisted pairs with individual shields, PTFE coated

Three of four twisted pairs used, plus shield of fourth.



Length: 1 m

**Notes:**

1. Designed for BS, PR2, PR3, PRM, EXA, EYA but currently unused.
2. Plan is for signal-type devices at top level (LVDTs etc) to be connected directly to the flange with "PI- Flange Signal Cable, Sheet 11" or the like. This cable (Sheet 16) can be used if the length is insufficient.
3. Pins 4 and 9 are unused.

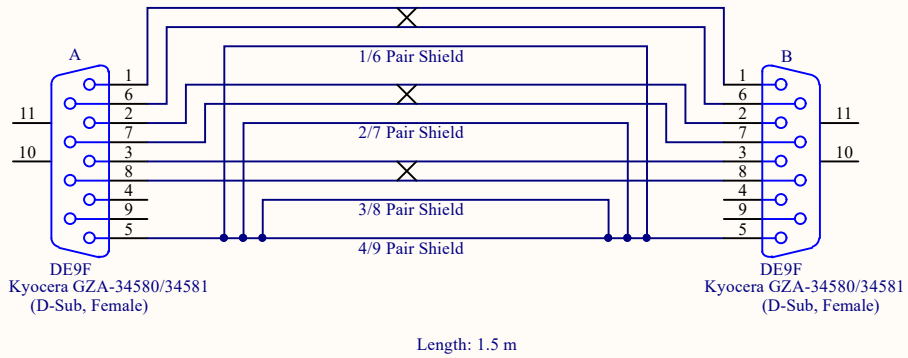
Title In-Vacuum Cable Detail - IP to PI Signal Cable		
Size A4	Number JGW-D1503901	Revision v2
Date: 2016/04/12	Sheet10of 24	
File: \\.\10 Signal Cable Extension.SchDoc	Drawn By: Mark Barton	

# JGW-D1503901 - In-Vacuum Cable Detail - Sheet 11

## Preisolator to Flange Signal Cable

**Obsolete! Replaced by Sheet 19 (same configuration but 2 m long).**

Gore GSC-06-27305-00  
 Four AWG32 twisted pairs with individual shields, PTFE coated  
 Three of four twisted pairs used, plus shield of fourth.



**Notes:**

1. Used in BS suspension.
2. Takes sensitive OSEM and LVDT signals from breakpoint on PI to feedthrough on flange.
3. A and B ends must be clearly labeled!!!
4. Pins 4 and 9 are unused.

Title In-Vacuum Cable Detail - PI to Flange Signal Cable		
Size A4	Number JGW-D1503901	Revision v2
Date:	2016/04/12	Sheet 11 of 24
File:	\\.\11 PI-Flange Signal Cable.SchDoc	Drawn By: Mark Barton

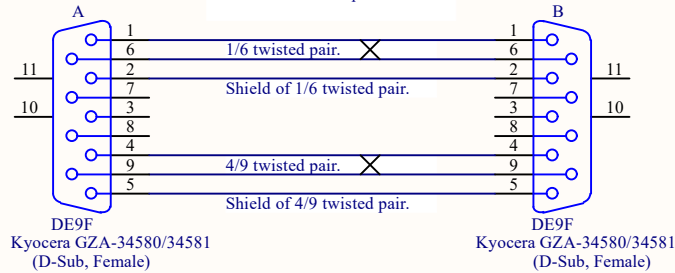
# JGW-D1503901 - In-Vacuum Cable Detail - Sheet 12

## Preisolator to Flange Geophone Cable

**Notes:**

1. Used in BS suspension.
2. Takes sensitive geophone signals from breakpoint on PI to feedthrough on flange.
3. Pins 3, 7 and 8 are unused.

Gore GSC-06-27305-00  
 Four AWG32 twisted pairs with individual shields, PTFE coated  
 Two of four twisted pairs used.



Title In-Vacuum Cable Detail - PI to Flange Geophone Cable		
Size A4	Number JGW-D1503901	Revision v2
Date: 2016/04/12	Sheet 12 of 24	
File: \\.\12 PI-Flange Geophone Cable.SchDwg Drawn By: Mark Barton		

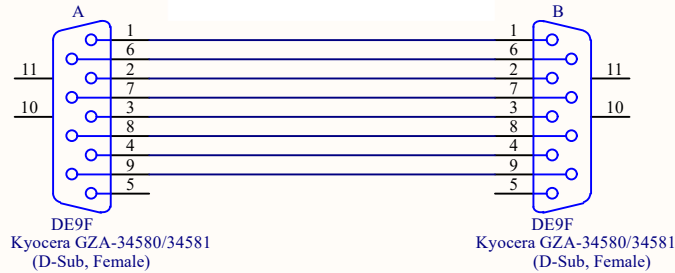
# JGW-D1503901 - In-Vacuum Cable Detail - Sheet 13

## Preisolator to Flange Motor Cable

Obsolete! Replaced by Sheet 20 (same configuration but 2 m long).

MWS ribbon cable type B6272803:  
 6 conductor, AWG27, Heavy build, Polyimide  
 Insulation, Natural Color, Epoxy Bond Coat

2 lengths, each cut down to 4 conductors.



**Notes:**

1. Used in BS suspension.
2. Takes non-sensitive motor signals from breakpoint on PI to feedthrough on flange.
3. Pin 5 is unused

Title In-Vacuum Cable Detail - PI to Flange Motor Cable		
Size A4	Number JGW-D1503901	Revision v2
Date:	2016/04/12	Sheet 13 of 24
File:	\\.\13 PI-Flange Motor Cable.SchDoc	Drawn By: Mark Barton

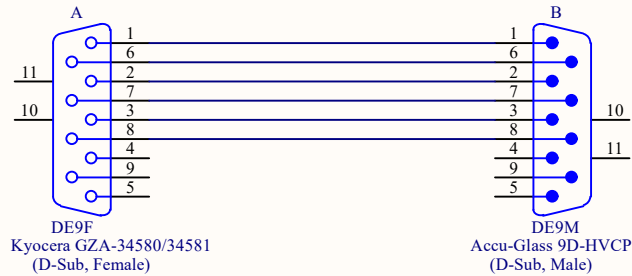
# JGW-D1503901 - In-Vacuum Cable Detail - Sheet 14

## Bottom Filter to Preisolator Motor Cable

**Notes:**

1. Used in BS suspension.
2. Takes non-sensitive motor signals from breakpoint on BF to breakpoint on PI.

MWS ribbon cable type B6272803:  
 6 conductor, AWG27, Heavy build, Polyimide  
 Insulation, Natural Color, Epoxy Bond Coat



Length: 3.7 m

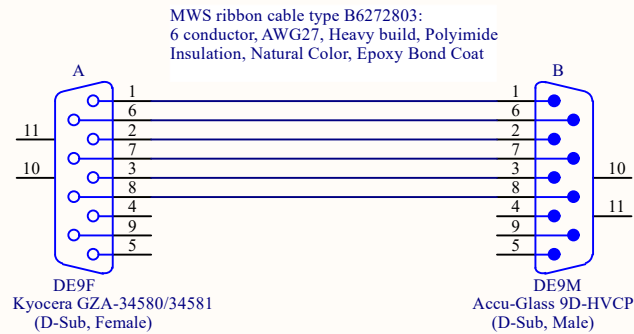
Title			
In-Vacuum Cable Detail - BF to PI Signal Cable			
Size	Number	Revision	
A4	JGW-D1503901	v2	
Date:	2016/04/12	Sheet14of	24
File:	\\.\14 BF-PI Motor Cable.SchDoc	Drawn By:	Mark Barton

# JGW-D1503901 - In-Vacuum Cable Detail - Sheet 15

## Standard Filter to Preisolator Motor Cable

**Notes:**

1. Used in BS suspension.
2. Takes non-sensitive motor signals from breakpoint on SF to breakpoint on PI.



Title		
In-Vacuum Cable Detail - SF to PI Motor Cable		
Size	Number	Revision
A4	JGW-D1503901	v2
Date:	2016/04/12	Sheet 15 of 24
File:	\\.\15 SF-PI Motor Cable.SchDoc	Drawn By: Mark Barton

# JGW-D1503901 - In-Vacuum Cable Detail - Sheet 16

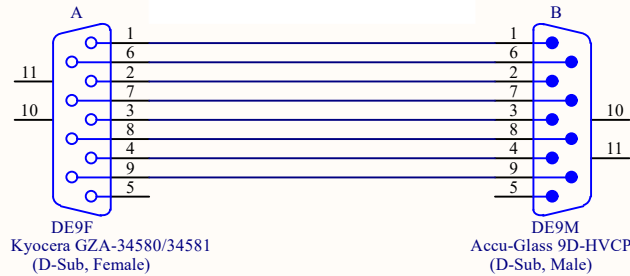
## Motor Cable Extension

**Notes:**

1. Designed for BS, PR2, PR3, PRM, EXA, EYA but currently unused.
2. Plan is for motor-type devices at top level to be connected directly to the flange with "PI- Flange Motor Cable, Sheet 13" or the like. This cable (Sheet 16) can be used if the length is insufficient.

MWS ribbon cable type B6272803:  
 6 conductor, AWG27, Heavy build, Polyimide  
 Insulation, Natural Color, Epoxy Bond Coat.

2 lengths, each cut down to 4 conductors.



Title In-Vacuum Cable Detail - Motor Cable Extension		
Size A4	Number JGW-D1503901	Revision v2
Date: 2016/04/12	Sheet 16 of 24	
File: \\..116 Motor Cable Extension.SchDoc	Drawn By: <a href="#">Mark Barton</a>	



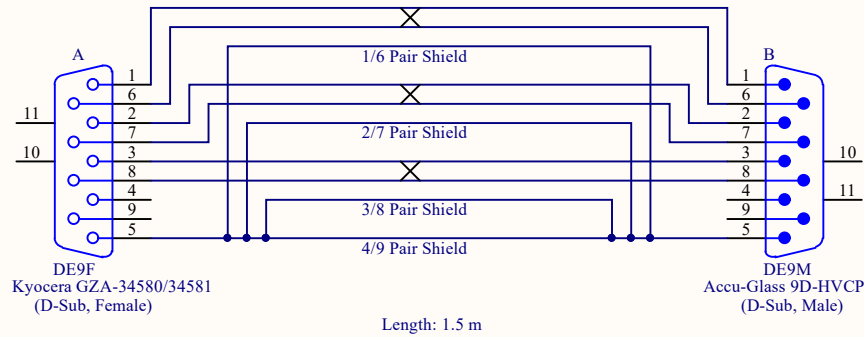
# JGW-D1503901 - In-Vacuum Cable Detail - Sheet 17

## Bottom Filter to Traverser Signal Cable

**Notes:**

1. Used in PR2, PR3, PRM suspensions.
2. Takes sensitive signals (OSEM, LVDT) from breakpoint on BF to breakpoint on TV
3. Pins 4 and 9 are unused.

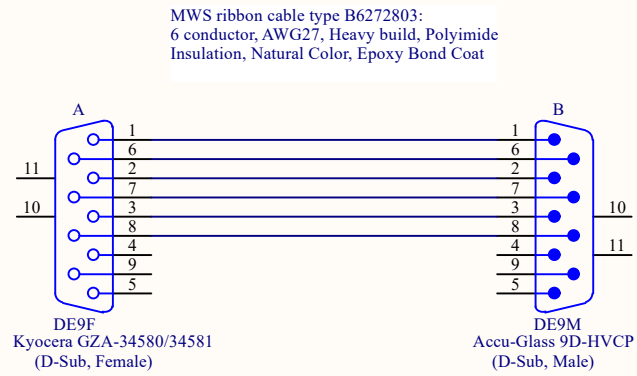
Gore GSC-06-27305-00  
 Four AWG32 twisted pairs with individual shields, PTFE coated  
  
 Three of four twisted pairs used, plus shield of fourth.



Title			
In-Vacuum Cable Detail - BF to TR Signal Cable			
Size	Number	Revision	
A4	JGW-D1503901	v2	
Date:	2016/04/12	Sheet 17 of	24
File:	\\.\17 BF-TR Signal Cable.SchDoc	Drawn By:	Mark Barton

# JGW-D1503901 - In-Vacuum Cable Detail - Sheet 18

## Bottom Filter to Traverser Motor Cable



**Notes:**

1. Used in PR2/PR3/PRM suspensions.
2. Takes non-sensitive motor signals from breakpoint on BF to breakpoint on TR.

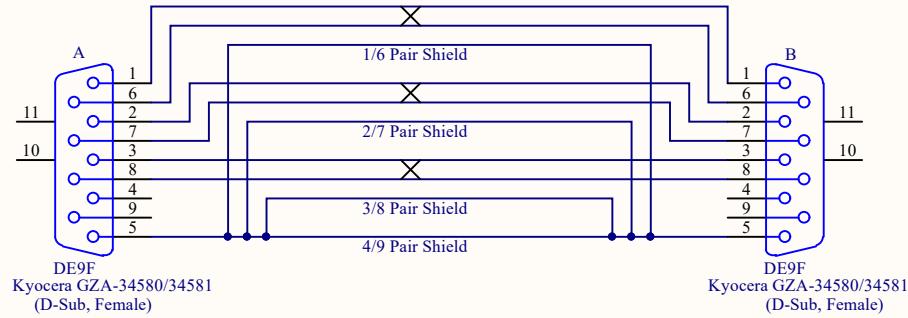
<b>Title</b> In-Vacuum Cable Detail - BF to TR Motor Cable		
<b>Size</b> A4	<b>Number</b> JGW-D1503901	<b>Revision</b> v2
<b>Date:</b> 2016/04/12	Sheet 18 of 24	
<b>File:</b> \\.\18 BF-TR Motor Cable.SchDoc	<b>Drawn By:</b> Mark Barton	

# JGW-D1503901 - In-Vacuum Cable Detail - Sheet 19

## TR to Flange Signal Cable

Gore GSC-06-27305-00  
 Four AWG32 twisted pairs with individual shields, PTFE coated

Three of four twisted pairs used, plus shield of fourth.



Length: 2 m

**Notes:**

1. Used in PR2, PR3 and PRM suspensions.
2. Takes sensitive signals (OSEM, LVDT) from breakpoint on TR to vacuum feedthrough.
3. Pins 4 and 9 are unused.
4. Also used instead of Sheet 11, 21 for BS, EXA/EYA.

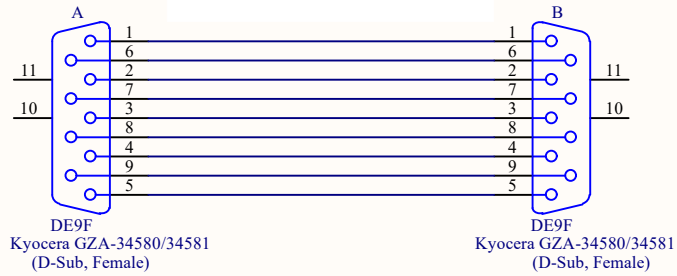
Title In-Vacuum Cable Detail - TR to Flange Signal Cable		
Size A4	Number JGW-D1503901	Revision v2
Date:	2016/04/12	Sheet 19 of 24
File:	\\.\19 TR-Flange Signal Cable.SchDoc Drawn By: Mark Barton	

# JGW-D1503901 - In-Vacuum Cable Detail - Sheet 20

## Traverser to Flange Motor Cable

MWS ribbon cable type B6272803:  
 6 conductor, AWG27, Heavy build, Polyimide  
 Insulation, Natural Color, Epoxy Bond Coat

2 lengths, cut down to 5 conductors plus 4  
 conductors.



**Notes:**

1. Used in PR2, PR3 and PRM suspensions.
2. Takes non-sensitive motor signals from breakpoint on TR to vacuum feedthrough.
3. Also used instead of Sheet 13, 22 for BS, EXA/EYA.

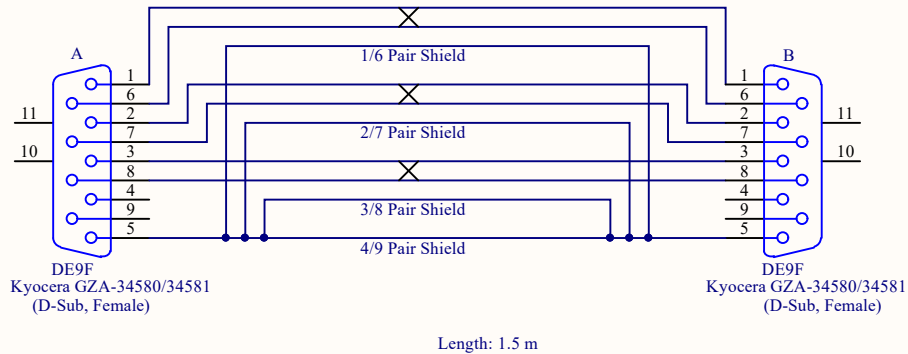
Title In-Vacuum Cable Detail - TR-Flange Motor Cable		
Size A4	Number JGW-D1503901	Revision v2
Date:	2016/04/12	Sheet20of 24
File:	\\.\20 TR-Flange Motor Cable.SchDoc	Drawn By: Mark Barton

# JGW-D1503901 - In-Vacuum Cable Detail - Sheet 21

## Bottom Filter to Flange Signal Cable

Obsolete! Replaced by Sheet 19 (same configuration but 2 m long).

Gore GSC-06-27305-00  
 Four AWG32 twisted pairs with individual shields, PTFE coated  
 Three of four twisted pairs used, plus shield of fourth.



**Notes:**

1. Used in EXA and EYA suspensions.
2. Takes sensitive signals (OSEM, LVDT) from breakpoint on BF to vacuum feedthrough.
3. A and B ends must be clearly labeled!
4. Pins 4 and 9 are unused.

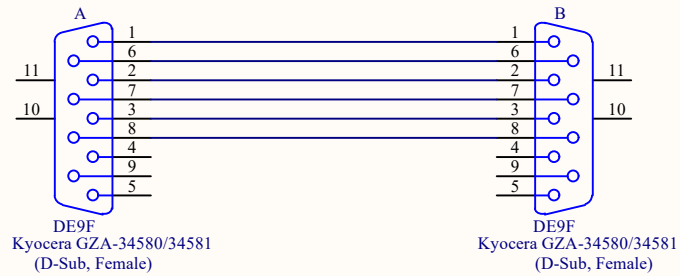
Title In-Vacuum Cable Detail - BF to Flange Signal Cable		
Size A4	Number JGW-D1503901	Revision v2
Date:	2016/04/12	Sheet21 of 24
File:	\\.\21 BF-Flange Signal Cable.SchDoc	Drawn By: Mark Barton

# JGW-D1503901 - In-Vacuum Cable Detail - Sheet 22

## Bottom Filter to Flange Motor Cable

Obsolete! Replaced by Sheet 20 (same configuration but 2 m long).

MWS ribbon cable type B6272803:  
6 conductor, AWG27, Heavy build, Polyimide  
Insulation, Natural Color, Epoxy Bond Coat



**Notes:**

1. Used in EXA and EYA suspensions.
2. Takes non-sensitive motor signals from breakpoint on BF to vacuum feedthrough.
3. Pins 4, 9 and 5 not used.

Title In-Vacuum Cable Detail - BF to Flange Motor Cable		
Size A4	Number JGW-D1503901	Revision v2
Date:	2016/04/12	Sheet22of 24
File:	\\.\22 BF-Flange Motor Cable.SchDoc	Drawn By: Mark Barton

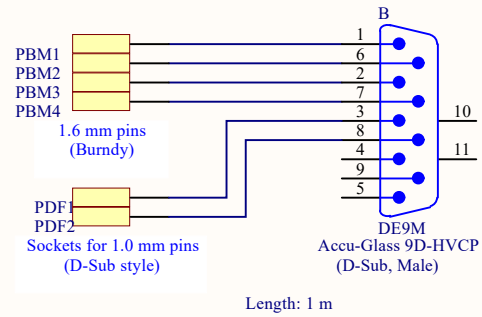
# JGW-D1503901 - In-Vacuum Cable Detail - Sheet 23

## Bottom/Standard Filter Stepper Adapter

MWS ribbon cable type B6272803:  
 6 conductor, AWG27, Heavy build, Polyimide  
 Insulation, Natural Color, Epoxy Bond Coat

**Notes:**

1. Used in EXA, EYA suspensions.
2. Connects steppers in bottom or standard filter to breakpoint outside.

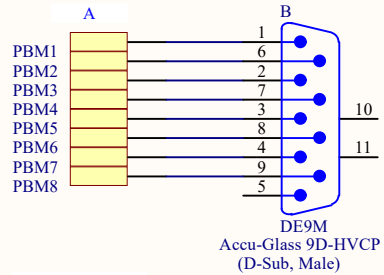


Title In-Vacuum Cable Detail - BF/SF Stepper Adapter		
Size A4	Number JGW-D1503901	Revision v2
Date: 2016/04/12	Sheet23 of 24	Drawn By: Mark Barton
File: \\.\23 BF Pico+Stepper Adapter.SchDoc		

# JGW-D1503901 - In-Vacuum Cable Detail - Sheet 24 PI Stepper Adapter

MWS ribbon cable type B6272803:  
6 conductor, AWG27, Heavy build, Polyimide  
Insulation, Natural Color, Epoxy Bond Coat

2 lengths, cut down to 4 conductors each



1.6 mm pins  
(Burndy) Length: 2 m

**Notes:**

1. Used in BS suspensions.
2. Connects steppers in top filter to breakpoint outside.
3. Pin 5 is unused.

Title In-Vacuum Cable Detail - PI Stepper Adapter		
Size A4	Number JGW-D1503901	Revision v2
Date: 2016/04/12	Sheet24of 24	Drawn By: Mark Barton
File: \\.\24 PI Stepper Adapter.SchDoc		