catheter with saline prior to each use. With each change in tubing connections, purge air from all the
INSERTION SITES:
resistance is encountered.

• Catheter is for Single Use Only.

• Use of single use device creates a potential risk of
infection and communicable disease. Contact your
local health officer, infection control, or the
manufacturer for more information.

• Re-processing or re-use of the catheter or device or any
part thereof is prohibited.

• Do not re-inflate the catheter or accessories by any
method.

• The manufacturer shall not be liable for any damages
caused by some re-use or re-certification of this catheter
or accessories.

• Contents sold in unopened, unmarked package.

STERILIZED BY ETHYLENE OXIDE
STERILE 60

• Do not use catheter or accessories if package is
opened.

• Do not use catheter or accessories if any sign of product
damage is visible.

CAUTION: Federal Law (USA) restricts the device
to sale to or on the order of physicians.

CENTROS® PRECAUTIONS:

1. Do not attempt the insertion of the catheter
with saline prior to each use. With each change in tubing
connections, purge air from all the resistance is encountered.

2. This catheter is for Single Use Only.

3. Use of single use device creates a potential risk of
infection and communicable disease. Contact your
local health officer, infection control, or the
manufacturer for more information.

4. Do not attempt to inflate the catheter to
maintain patency between treatments, a heparin or
saline flush should be used to maintain patency between
treatments.

5. Use standard hospital protocols when applicable.

6. Prevent nosocomial infection, observe the
care of all and bloodlines connections to prevent
leaks to prevent blood loss or air embolism.

7. CAUTION: Do not pull catheter extension tubing
out completely at any time due to the risk of
leaking from the catheter to enter the exit site, yet long
enough to allow the catheter to enter the exit site, yet long
enough to allow the catheter to remain stable.

8. Keep hands clean and wash with soap and
detergent before handling.

9. Use only latex-free gloves to perform
perform all procedures.

10. Use only latex (rubber) gloves to
Connect the catheter to anchors in the

11. CAUTION: Do not pull catheter extension tubing
out completely at any time due to the risk of
leaking from the catheter to enter the exit site, yet long
enough to allow the catheter to remain stable.

12. Use small hemostats, compress the cuff
and push through the exit site while pulling gently on
the catheter.

13. Attach syringes to both extensions and open
catheter. Blood should appear evenly from both and
without any air bubbles. If either extension
contains air bubbles or is not circulating blood,
it must be removed and replaced with an
adequate amount of blood.

Flush both extensions to maintain patency.

15. A small rolled towel may be inserted between
the shoulder blades to facilitate the extension of the
chest wall below the clavicle. Make the incision at
the junction of the right arm and the superior vena
cava.

16. The medical techniques and procedures described
in these instructions for use do not represent all
feasible, acceptable procedures, nor are they intended as a
substitution for the physician’s experience and judgment in
attaining any specific patient.

17. To maintain patency between treatments, an
anticoagulant or saline flush should be used to
maintain patency between treatments.

18. Do not re-sterilize the catheter or
Accessories by any method.

19. Do not use catheter or accessories if any sign of product
damage is visible.

20. CAUTION: Federal Law (USA) restricts the device
to sale to or on the order of physicians.

21. Do not attempt the insertion of the catheter
with saline prior to each use. With each change in tubing
connections, purge air from all the resistance is encountered.

22. This catheter is for Single Use Only.

23. Use of single use device creates a potential risk of
infection and communicable disease. Contact your
local health officer, infection control, or the
manufacturer for more information.

24. Do not attempt to inflate the catheter to
maintain patency between treatments, a heparin or
saline flush should be used to maintain patency between
treatments.

25. Use standard hospital protocols when applicable.

26. Prevent nosocomial infection, observe the
care of all and bloodlines connections to prevent
leaks to prevent blood loss or air embolism.

27. CAUTION: Do not pull catheter extension tubing
out completely at any time due to the risk of
leaking from the catheter to enter the exit site, yet long
enough to allow the catheter to remain stable.

28. Keep hands clean and wash with soap and
detergent before handling.

29. Use only latex-free gloves to perform
perform all procedures.

30. Use only latex (rubber) gloves to
Connect the catheter to anchors in the

31. CAUTION: Do not pull catheter extension tubing
out completely at any time due to the risk of
leaking from the catheter to enter the exit site, yet long
enough to allow the catheter to remain stable.

32. Use small hemostats, compress the cuff
and push through the exit site while pulling gently on
the catheter.

33. Attach syringes to both extensions and open
catheter. Blood should appear evenly from both and
without any air bubbles. If either extension
contains air bubbles or is not circulating blood,
it must be removed and replaced with an
adequate amount of blood.

34. Attach syringes with an anticoagulant solution.
Flush both extensions to maintain patency.

35. A small rolled towel may be inserted between
the shoulder blades to facilitate the extension of the
chest wall below the clavicle. Make the incision at
the junction of the right arm and the superior vena
cava.

36. The medical techniques and procedures described
in these instructions for use do not represent all
feasible, acceptable procedures, nor are they intended as a
substitution for the physician’s experience and judgment in
attaining any specific patient.

37. To maintain patency between treatments, an
anticoagulant or saline flush should be used to
maintain patency between treatments.

38. Do not re-sterilize the catheter or
Accessories by any method.

39. Do not use catheter or accessories if any sign of product
damage is visible.

40. CAUTION: Federal Law (USA) restricts the device
to sale to or on the order of physicians.

41. Do not attempt the insertion of the catheter
with saline prior to each use. With each change in tubing
connections, purge air from all the resistance is encountered.

42. This catheter is for Single Use Only.

43. Use of single use device creates a potential risk of
infection and communicable disease. Contact your
local health officer, infection control, or the
manufacturer for more information.

44. Do not attempt to inflate the catheter to
maintain patency between treatments, a heparin or
saline flush should be used to maintain patency between
treatments.

45. Use standard hospital protocols when applicable.

46. Prevent nosocomial infection, observe the
care of all and bloodlines connections to prevent
leaks to prevent blood loss or air embolism.

47. CAUTION: Do not pull catheter extension tubing
out completely at any time due to the risk of
leaking from the catheter to enter the exit site, yet long
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and push through the exit site while pulling gently on
the catheter.

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catheter. Blood should appear evenly from both and
without any air bubbles. If either extension
contains air bubbles or is not circulating blood,
it must be removed and replaced with an
adequate amount of blood.

50. Attach syringes with an anticoagulant solution.
Flush both extensions to maintain patency.

51. A small rolled towel may be inserted between
the shoulder blades to facilitate the extension of the
chest wall below the clavicle. Make the incision at
the junction of the right arm and the superior vena
cava.

52. The medical techniques and procedures described
in these instructions for use do not represent all
feasible, acceptable procedures, nor are they intended as a
substitution for the physician’s experience and judgment in
attaining any specific patient.

53. To maintain patency between treatments, an
anticoagulant or saline flush should be used to
maintain patency between treatments.
1. Draw solution into two syringes, corresponding to the amount designated on the arterial and venous extensions (as shown). Ensure that the syringes are free of air.

2. Ensure that the extension set clamps are closed.

3. Remove scaling caps from the extensions.

4. Attach a syringe containing anticoagulant solution to the femoral hole of each extension.

5. Open extension clamps.

6. Aspirate to ensure that air will be forced into the patient.

7. Inject heparin into each lumen using quick bolus technique.

8. Close extension clamps.

9. Insert guidewire into vein. Cardiac arrhythmia may result if guidewire is allowed to pass into the right atrium.

10. Continue with step 1 under SafeSheath D-Pro® insertion section.

### CATHETER REMOVAL

**WARNING:** Only a physician familiar with the appropriate techniques should attempt the following procedures.

1. Palpate the catheter exit tunnel to locate the cuff.
2. Administer sufficient local anesthetic to excise and cuff locations to completely anesthetize the area.
4. Make a 2 cm incision over the cuff, parallel to the catheter.
5. Massage the cuff using blunt and sharp dissection as indicated. Isolate catheter and surrounding tissue between cuff and jugular vein. Place loop of suture through subcutaneous and deep tissue surrounding the tunnel.
6. Cut cuff from surrounding tissue.
7. Cut tunnel just lateral and medial to cuff. Avoid cutting the catheter.
8. Allow to bleed. 10-15 minutes or until bleeding stops.

**NOTE:** DO NOT use acetone or PEG-containing agents on the exit site. Wound dressings must be kept clean and dry.

**CAUTION:** Over the wire placement should only be performed by a physician familiar with this technique. Only a physician familiar with the appropriate techniques should attempt the following procedures.

**SITE CARE**

**WARNING:** DO NOT use access or PEG-containing smears of any kind with this catheter.

- Clean skin around catheter. Cover the exit site with occlusive dressing and leave extensions, clamps, and caps exposed for access by staff.
- Remove dressings.
- Attach a sterile scaling cap to the femoral holes of the extensions.

**NOTE:** No further antiseptic solution is necessary between treatments provided the lumen are not being aspirated or flushed.

**OVER THE WALL TECHNIQUE**

**CAUTION:** When the wire placement should only be performed by a physician familiar with this technique. The site is not used with this placement.

1. Insert guidewire with forward motion through the introducer needle into the target vein.
2. Remove needle leaving the guidewire in the target vein.
3. Thread dilator(s) over guidewire into the vein (as light twisting motion may be used). Remove dilator(s) when vein is sufficiently dilated, leaving the guidewire in place. Apply pressure to incision where dilators are removed.
4. Thread the proximal end of the guidewire through the distal tip of the venous lumen and the dilater as shown in the figure:

![Guidewire Diagram](Image 609x248 to 655x395)

5. Thread the guidewire through the distal tip of the arterial lumen and through the catheter lumen until the proximal end of the guidewire exits the arterial lumen on the extension set.
6. Advance the catheter until the distal tip of the arterial lumen is within the primary incision.

**NOTE:** Ensure blood is coming out of the arterial lumen while advancing the catheter.

**Flow vs. Pressure Data**

<table>
<thead>
<tr>
<th>Catheter</th>
<th>Length (cm)</th>
<th>Pressure at Flow (mm Hg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Image 699x658 to 732x689]</td>
<td>[Image 698x740 to 732x776]</td>
<td>[Image 699x658 to 732x689]</td>
</tr>
<tr>
<td>34</td>
<td>20</td>
<td>1.7</td>
</tr>
<tr>
<td>22</td>
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<td>46</td>
<td>36</td>
<td>-93</td>
</tr>
<tr>
<td>52</td>
<td>46</td>
<td>-102</td>
</tr>
</tbody>
</table>

**NOTE:** FLOW TESTING REPRESENTS OPTIMUM LABORATORY CONDITIONS

### REFERENCES:


### AngioDynamics

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Fax: 518-798-1380

IC 041 Rev. B

AngioDynamics® and Centros® are registered trademarks of AngioDynamics, Inc.
SafeSheath D-Pro® is a registered trademark of Pressure Products Medical Supplies, Inc.

The SafeSheath D-Pro® introducer is covered under U.S. Patent Nos. 5,125,906, 5,312,407 and 5,409,463.

The Centros® catheter is covered under pending US and foreign patents.

Kit contents will include (1) Hemodialysis Catheter and accessories. For exact kit contents refer to the product label.