



**APRS  
HANDLING/SHIPPING  
PROCEDURE**

**ANCILLARY  
SPECIFICATION**

SECTION	V	
Prepared By	GJR	03/22/06
Approved Engineer	RJH	03/22/06
Approved Mgr. Engr	JJS	03/22/06
Approved GGM QA	GTF	03/22/06
<b>REVISION</b>	<b>002</b>	03/16/06

**SUBJECT: APRS HANDLING/SHIPPING PROCEDURE**

**1.0 SCOPE**

1.1 This document sets forth Hunting's procedure for the handling/shipping of APRS burst disc/rupture disc sub assemblies from land base storage locations to offshore rig locations and subsequent running of APRS assemblies down-hole.

**2.0 REFERENCE**

2.1 Approved customer Quality Process Plans

**3.0 DEFINITIONS**

3.1 APRS shall be defined as "Annular Pressure Relief System".

3.2 Burst disc/rupture disc shall be defined as an accessory item which, when properly installed into an APRS sub or ancillary equipment, compensates for differential pressures encountered down hole when wells are brought on-line. Should encountered pressures exceed the collapse/burst pressure ratings of the casing in question the burst disc/rupture disc is designed to act as an annular pressure relief mechanism. Burst disc/rupture disc trigger pressures are predetermined by the end user based on the down hole well requirements.

3.3 7/8" burst disc/rupture disc receptacle hole shall be defined as the hole ported into the APRS burst disc/rupture disc sub or ancillary equipment which receives either the 7/8" internal or external pressure burst disc/rupture disc.

3.4 Burst disc/rupture disc cap shall be defined as an accessory item which when properly installed into the burst disc/rupture disc exterior hex hole protects the burst disc/rupture disc membrane from the possible external introduction of contaminants/damage.

**4.0 EQUIPMENT**

4.1 The following list of equipment is required for the inspection of 7/8" internal/external burst disc/rupture disc installed in APRS burst disc/rupture disc assemblies shipped to offshore rig locations.

- 4.1.1 Magnifying glass.
- 4.1.2 ID inspection mirror.
- 4.1.3 Bright light source.

**5.0 SHIPPING PREPARATIONS**

5.1 Verify that APRS burst disc/rupture disc sub assemblies have been identified as per customer requirements. Specialized identification is incorporated to easily distinguish APRS burst disc/rupture disc sub assemblies from other equipment used offshore.

**NOTE: It is recommended that the APRS burst disc/rupture disc sub be painted a unique color that is distinguishable from all other equipment to be used by the end user offshore.**

5.2 Verify that after the installation and testing of burst disc/rupture disc, in accordance with customer requirements as stated in appropriate customer Quality Process Plans, protective materials were appropriately applied to APRS burst disc/rupture disc (i.e. shrink wrap or equivalent, wrapped over burst disc/rupture disc, see 5.3 and Fig.1)



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- 5.3 Apply shrink wrap or equivalent to burst disc/rupture disc sub after installation and hydrostatic pressure testing prior to shipment.
  - 5.3.1 Apply shrink wrap or equivalent over burst disc/rupture discs in a circumferential manner, See Fig. 1.
  - 5.3.2 Apply a minimum of four wraps around burst disc/rupture disc APRS sub assembly.
  - 5.3.3 Package burst disc/rupture disc APRS sub assembly in accordance with customer requirements as stated in appropriate Quality Process Plans/P. O.

**NOTE: Shrink wrap or equivalent serves to protect burst disc/rupture discs from introduction of contaminants and as a means to verify if burst disc/rupture discs have been tampered with prior to running down hole.**

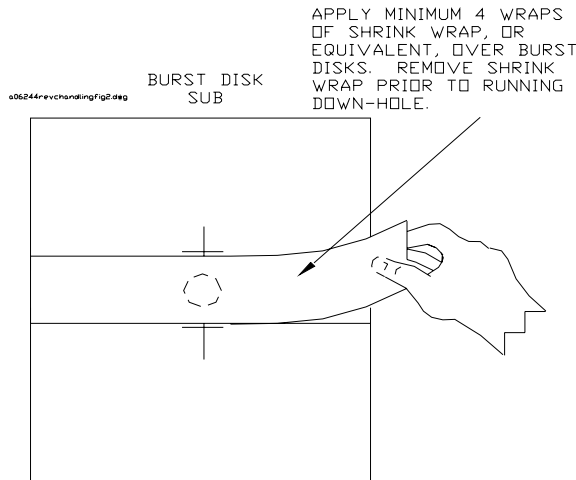


Fig. 1

**6.0 SHIPPING/RUNNING**

**NOTE: APRS burst disc/rupture disc sub assembly configurations vary from end user to end user based on down-hole requirements. Handling of said assemblies may vary from rig to rig (i.e. either from boat to deck or from the deck to the floor). REGARDLESS OF THE HANDLING METHOD, SLINGS OR GRIPPER ARMS SHALL NEVER COME INTO CONTACT WITH ANY OF THE BURST DISCS/RUPTURE DISCS THAT ARE INCORPORATED INTO THE APRS SUB ASSEMBLIES.**

- 6.1 At the rig location inspect the shrink wrap or equivalent wrapped around APRS burst disc/rupture disc sub assembly/assemblies and burst disc/rupture disc for evidence of damage/tampering. If the shrink wrap or equivalent is damaged over the burst disc/rupture disc area make a note as to the condition of the shrink wrap or equivalent in the daily running report. Immediately report findings to an authorized company representative.



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- 6.1.1 Remove the shrink wrap or equivalent. Using a magnifying glass visually inspect OD side of burst disc/rupture disc for possible tampering or damage (i.e. scratches, dents, dings, corrosion, plugged burst disc/rupture disc cap vent holes, etc.).
- 6.1.2 If a burst disc/rupture disc cap is loose do not attempt to reinstall it. Document and photograph any damage/irregularities then contact the Hunting Quality Assurance Department.

**NOTE: Any damage to a burst disc/rupture disc or burst disc/rupture disc membrane (i.e. scratches, dents, dings, corrosion, etc.) shall be cause for rejection. All rejects shall be identified by painting a red band around the APRS burst disc/rupture disc sub assembly. Should any damage/tampering be suspected immediately contact the Hunting Quality Assurance Department.**

**NOTE: Against appropriate statement of requirements verify the installation configuration including quantity, pressure/temperature rating, and burst direction (i.e. 4 burst discs/rupture discs to be installed on each burst disc/rupture disc sub - burst discs/rupture discs will be oriented 180° apart from each other. 2 discs will be internal pressure (Fike) burst discs/rupture discs. The other 2 discs will be external pressure (Fike) burst discs/rupture discs and configured 180° apart. Only specified burst discs/rupture discs of like description are to be oriented 180° diametrically opposed).**

**NOTE: If shrink wrap or equivalent is removed just prior to running down-hole do not allow shrink wrap to fall in open hole. Recommended practice is to inspect/remove shrink wrap or equivalent on inspection racks prior to running assemblies down-hole.**

- 6.1.3 Verify that burst discs/rupture discs are equipped with burst disc/rupture disc caps.
1. If burst discs/rupture discs are not equipped with burst disc/rupture disc protective caps notify the drilling engineer or an authorized company representative.
  2. If burst discs/rupture discs are equipped with burst disc/rupture disc protective caps do not tap burst disc/rupture disc caps with hammer or any blunt object.
  3. If burst discs/rupture discs are equipped with burst disc/rupture disc protective caps do not remove burst disc/rupture disc protective caps.

**NOTE: Look for possible evidence of tampering that may affect burst disc/rupture disc membrane integrity.**

- 6.1.4 If APRS burst disc/rupture disc sub assemblies are located on the end of the assembly inspect the burst disc/rupture disc membranes for damage or possible tampering from the ID using an ID inspection mirror and a bright light source.
1. If an APRS burst disc/rupture disc coupling is located in the center of the burst disc/rupture disc joint assembly then the burst disc/rupture disc membrane integrity cannot be verified from the burst disc/rupture disc sub ID with the equipment listed.



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**NOTE: Do not use ID inspection mirror and bright light source to inspect the burst disc/rupture disc membranes over open hole. Burst disc/rupture disc membranes should only be inspected on horizontal inspection racks prior to running burst disc/rupture disc subs down-hole. An inspection shroud shall be installed over and around rotary table to prevent any inspection/testing tools used for external inspection purposes from falling down the open hole area.**

**6.1.5 DO NOT PERFORM ANY OF THE FOLLOWING ACTS:**

1. Do not direct low pressure air or high pressure air sources directly towards burst disc/rupture disc membrane.
2. Do not insert any type of object (i.e. screwdriver, pocket knife, stick, etc.) into burst disc/rupture disc exterior hex hole or burst disc/rupture disc receptacle thru-bore hole located in ID of burst disc/rupture disc sub.
3. If burst disc/rupture discs are equipped with burst disc/rupture disc caps do not tap burst disc/rupture disc protective caps with hammers or any other blunt objects.
4. If burst disc/rupture disc caps are loose do not attempt to reinstall them.
5. If burst disc/rupture discs are equipped with burst disc/rupture disc caps do not remove burst disc/rupture disc protective caps.
6. Do not allow burst disc/rupture disc joints to come into contact with another joint or burst disc/rupture disc joint assembly on storage or inspection racks.

**NOTE: The installation of bumper rings around burst disc/rupture disc joint assembly pups is recommended to ensure that burst disc/rupture disc subs do not come into contact with another sub or joint.**

7. Do not replace questionable burst disc/rupture discs.
  - a. If a burst disc/rupture disc membrane is questionable or damaged flag the burst disc/rupture disc sub assembly as a reject and set it aside for shipment back to the company shore base.
  - b. Replace only complete APRS burst disc/rupture disc sub assemblies with back-up APRS sub assemblies.
    1. Utilize a spare back-up APRS burst disc/rupture disc sub assembly for replacement and repeat steps 6.1 - 6.1.4 with special reference to the **NOTE** of Section 6.1.4 and customer referenced Quality Process Plans.
8. Do not damage burst disc/rupture disc receptacle holes (ports) and adjacent areas with tong dies, buck-on dies, elevators, or slips.

**NOTE: Tong and/or buck-on dies must be kept off of these areas during connection make-up. Care must be taken by end user when racking back burst disc/rupture disc sub assemblies in the derrick. Never use slips on an APRS sub or APRS extended coupling.**

9. Do not use inspection equipment for ID inspection purposes over open-hole.
10. Do not remove shrink wrap or equivalent over open-hole if possible.



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11. Do not run burst disc/rupture disc APRS sub assemblies with questionable burst disc/rupture disc membrane integrity down-hole.
12. Do not run burst disc/rupture disc APRS sub assemblies down-hole without a release from an authorized company representative.

6.2 When loading or unloading for transportation move APRS burst disc/rupture disc sub assemblies one at a time.

**7.0 REJECTION**

- 7.1 If any damage to an APRS burst disc/rupture disc sub assembly is detected DO NOT run the APRS assembly down-hole and report any damage to Drilling Engineer.
- 7.2 If a burst disc/rupture disc membrane is questionable or damaged flag the APRS burst disc/rupture disc sub assembly as a reject and set it aside for shipment back to the company shore base.

**NOTE: All rejected APRS burst disc/rupture disc assemblies shall be identified as reject by painting a red band around the APRS burst disc/rupture disc sub assembly.**

**DO NOT RUN APRS BURST DISC/RUPTURE DISC  
SUB ASSEMBLIES WITH QUESTIONABLE  
BURST DISC/RUPTURE DISC MEMBERANE  
INTEGRITY DOWN-HOLE!!!!!!!!!!!!!!!!!!!!!!**