


29.2 Appendix 2 - Technical Routines
Technical Required Elements

Solo Elements	Element Name	DD
1a	Thrust Continuous Spin 720°	2.7
1b	Thrust Spinning 360°	2.1
2a	Combined Spin 1080° – Continuous Spin 1080°	3.0
2b	Combined Spin 720° – Continuous Spin 1080°	2.7
3	Swordfish Straight Leg – Knight	3.2
4a	Fishtail Half Twist – Continuous Spin 720°	2.9
4b	Fishtail – Continuous Spin 720°	2.6
5a	Rocket Split Bent Knee Joining 360°	2.4
5b	Rocket Split Bent Knee	2.1

Duet Elements	Element Name	DD
1a	Walkover Back Closing 360° – Continuous Spin 1080°	3.0
1b	Walkover Back Closing 180° – Continuous Spin 720°	2.5
2a	Rocket Split Alternating Legs – Spinning 180°	2.8
2b	Rocket Split – Spinning 180°	2.4
3	Beginning from a Ballet Leg Position – Flamingo Bent Knee rollback – Join to VP – Half Twist – 360° open to Split – Walkout	3.1
4a	Fishtail – Knight – Continuous Spin 1080°	3.2
4b	Fishtail – Knight – Continuous Spin 720°	2.7
5a	Thrust Bent Knee Twirl Spin 360°	2.3
5b	Thrust – Bent Knee Twirl	2.1

Mixed Duet Elements	Element Name	DD
1a	Rocket Split Twirl Spin 180°	2.7
1b	Rocket Split Twirl	2.5
2a	Front Pike – Vertical 360° Rotation – Full Twist to Bent Knee – Continuous Spin 720°	2.4
2b	Front Pike – Vertical 180° Rotation – 1/2 Twist to Bent Knee – Continuous Spin 720°	2.2
3	Manta Ray Half Twist	3.0

Team Elements	Element Name	DD
1a	Flying Fish Hybrid Spinning 180°	2.5
1b	Flying Fish Hybrid	2.3
2a	Vertical – Full Twist to Bent Knee – Full Twist to Vertical – Open 180° – Walkout	2.6
2b	Vertical – Half Twist to Bent Knee – Half Twist to Vertical – Split – Walkout	2.3
3a	Two Fouetté Rotations – Vertical – Continuous Spin 720°	2.6
3b	Two Fouetté Rotations – Vertical – Spinning 360°	2.3
4	Butterfly Hybrid	2.9
5a	Rocket Split Bent Knee Twirl Hybrid	2.4
5b	Rocket Split Bent Knee Hybrid	2.1


29.2.1 General Requirements

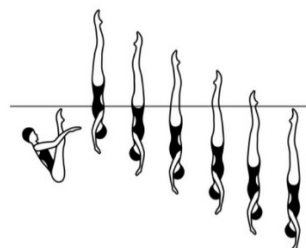
In Olympic Games, Olympic Games Qualifier, Artistic Swimming World Cup, World Aquatics Artistic Swimming Championships and World Aquatics Junior Artistic Swimming Championships and other World Aquatics competitions as designated, Required Elements are used.

- 1) Unless otherwise specified in the description all required elements must be executed according to the requirements described in the World Aquatics AS Manual for Judges, Coaches and Referees.
- 2) If 1 or more competitors omits all or part of an element or performs an incorrect action in an element, refer to 2022-2025 World Aquatics Competition Regulations for penalties regarding incorrect or omitted actions.
- 3) Required Elements #1 - #5 (Solo, Duet and Team), or #1-3 (Mixed Duet) can be performed in any order.
- 4) Required Elements #1 - #5 (Solo, Duet and Team), or #1-3 (Mixed Duet) - It is required that the elements and the degrees of difficulty for each element selected to be performed, and the order of performance selected, must be declared and submitted on the Coach Card for the Technical Routine. This form must be submitted prior to the Competition/Event.
- 5) Additional hybrids and the degrees of difficulty for each hybrid selected, and the order to be performed, must be declared and submitted on the Coach Card for the Technical Routine. This form must be submitted prior to the Competition/Event.
- 6) For Team and Women's Duet: With the exception of Deck Work and Entry into the water, getting into and out of the Circle (Team), and Acrobatics, Technical Required Elements, Free Hybrids and Transitions are to be performed simultaneously and facing the same direction by all duet or team members.
- 7) For Mixed Duets: Only Technical Required Elements must be performed simultaneously and facing the same direction. Deckwork and Entry into the water, Free Hybrid, Required Hybrid, Entry into or Exit out of Technical Required Elements, Transitions and Pair Acrobatics DO NOT have this restriction and MAY be performed freely (non-simultaneous and facing different directions).
- 8) Additional movements can be added immediately before and after (breath to breath) Required Elements #1 - #5 (Solo, Duet and Team), or #1-3 (Mixed Duet). These movements will not add any extra difficulty nor will be considered as the additional hybrids.
- 9) Time limits – refer to Part Seven - 14
- 10) Recommendation for all Technical Routines:

It is strongly recommended for clarity of judgment that Required Elements #1 - #5 (Solo, Duet and Team), or #1-3 (Mixed Duet) are separated by other content.

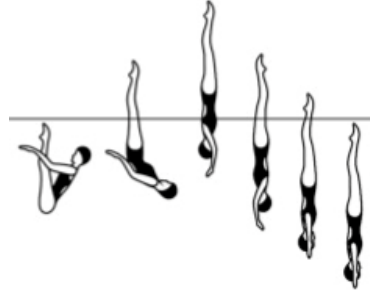
29.2.2 Solo Required Elements
Element 1
1A – Thrust Continuous Spin 720° / DD - 2.7

From a **Submerged Back Pike Position**, with the legs perpendicular to the surface, a *Thrust Continuous Spin 720°* (2 rotations) is executed.

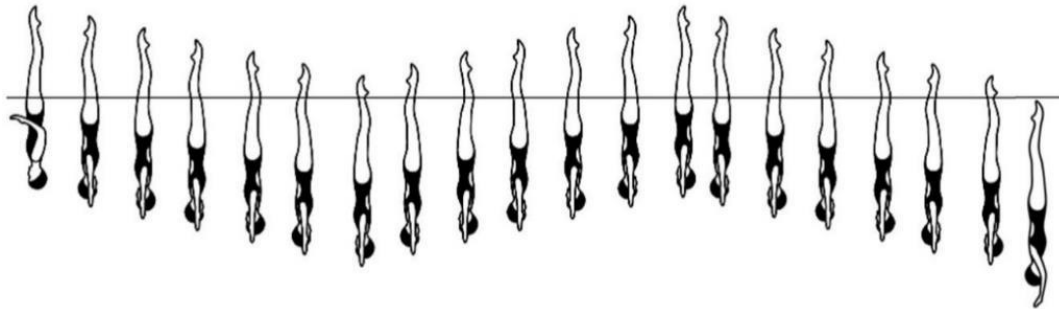



1B – Thrust Spinning 360° / DD - 2.1

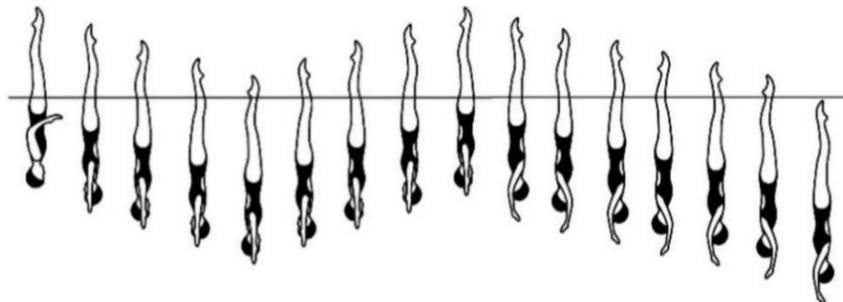
From a **Submerged Back Pike Position**, with the legs perpendicular to the surface, a *Thrust Spinning 360°* (1 rotation) is executed.

Element 2

2A – Combined Spin 1080° – Continuous Spin 1080° / DD - 3.0

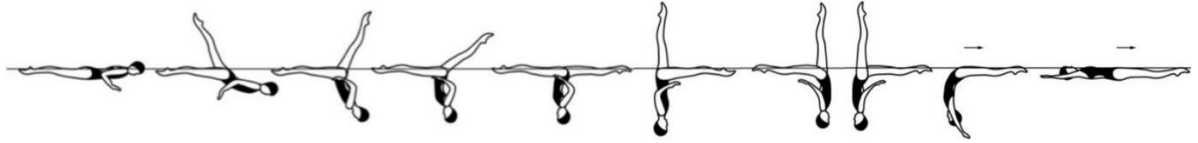
From a **Vertical Position** a *Combined Spin of 1080°* is executed (3 rotations + 3 rotations). Continuing in the same direction and without a pause a *Continuous Spin 1080°* (3 rotations) is executed.


2B – Combined Spin 720° – Continuous Spin 1080° / DD - 2.7

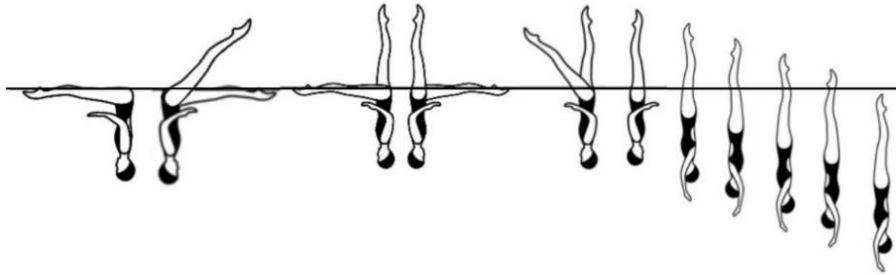
From a **Vertical Position** a *Combined Spin of 720°* is executed (2 rotations + 2 rotations). Continuing in the same direction and without a pause a *Continuous Spin 1080°* (3 rotations) is executed.


Element 3
3 – Swordfish Straight Leg – Knight / DD - 3.2

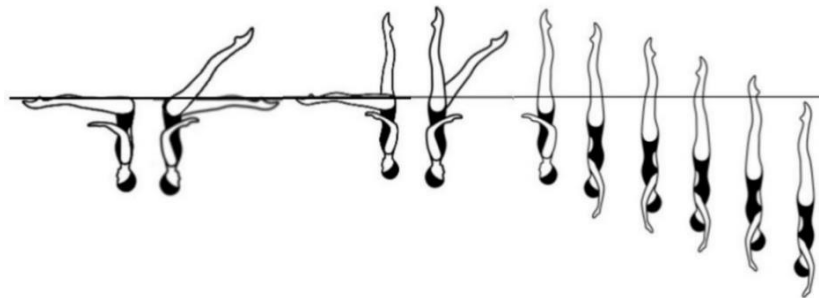
From a **Front Layout Position**, the back arches as one leg is lifted in a 180° arc over the surface to a **Split Position**. A hip rotation of 180° is executed as the front leg is rapidly raised to assume a **Fishtail Position**. Maintaining the vertical alignment of the body and with accelerating speed, the foot of the horizontal leg is moved in a horizontal arc of 180° at the surface to a **Knight Position** and with continuous motion and continuing in the same direction an additional 180° rotation is executed. The vertical leg is lowered to a **Surface Arch Position** and with continuous motion an Arch to *Back Layout Finish Action* is executed.


Element 4
4A – Fishtail Half Twist – Continuous Spin 720° / DD – 2.9

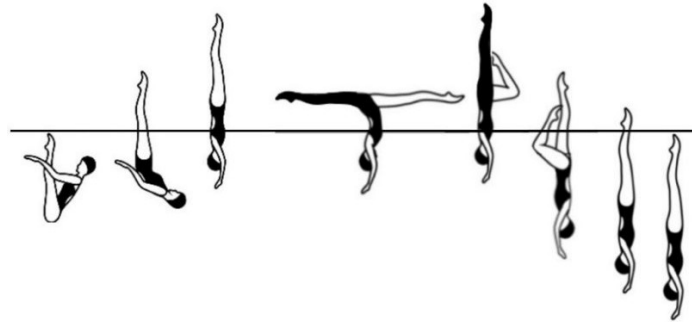
From a **Front Pike Position**, a rotation of 360° is executed as one leg is lifted to a **Fishtail Position**. Continuing in the same direction a *Half Twist* in a **Fishtail Position** is executed. Continuing in the same direction another rotation of 360° is executed, as the horizontal leg is lifted to a **Vertical Position**. Continuing in the same direction, a *Continuous Spin of 720°* (2 rotations) is executed.


4B – Fishtail – Continuous Spin 720° / DD – 2.6

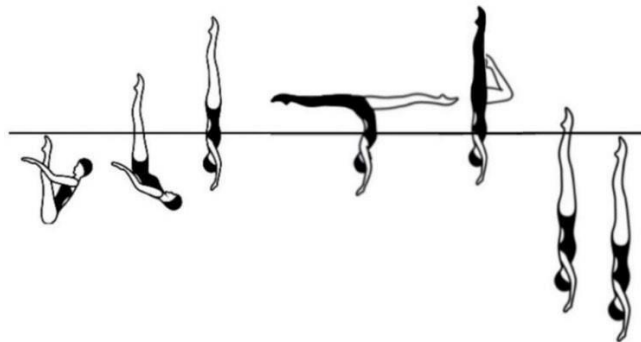
From a **Front Pike Position**, a rotation of 360° is executed as one leg is lifted to a **Fishtail Position**. Continuing in the same direction another rotation of 360° is executed, as the horizontal leg is lifted to a **Vertical Position**. Continuing in the same direction a *Continuous Spin of 720°* (2 rotations) is executed.


Element 5
5A – Rocket Split Bent Knee Joining 360° / DD - 2.4

From a **Submerged Back Pike Position**, with the legs perpendicular to the surface, a *Thrust* is executed to a **Vertical Position**. Maintaining maximum height, the legs are split rapidly to assume an **Airborne Split Position**. The back leg is rapidly lifted to vertical and the front leg bends to assume a **Bent Knee Vertical Position**. A rapid *360° Spin* is executed as the bent knee is extended to a **Vertical Position** completed as the ankles reach the surface of the water followed by a *Vertical Descent* at the same tempo as the *Thrust*.


5B – Rocket Split Bent Knee / DD - 2.1

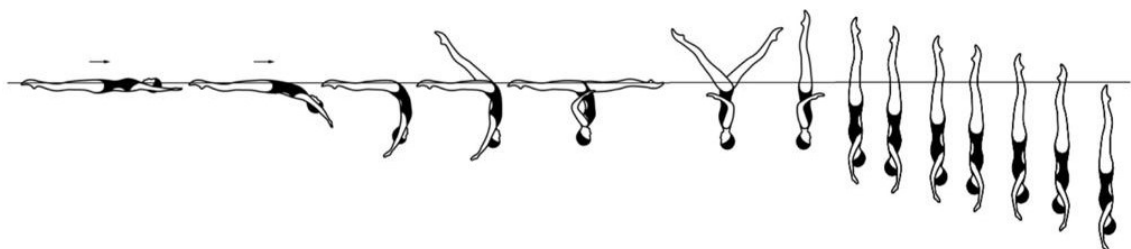
From a **Submerged Back Pike Position**, with the legs perpendicular to the surface, a *Thrust* is executed to a **Vertical Position**. Maintaining maximum height, the legs are split rapidly to assume an **Airborne Split Position**. The back leg is rapidly lifted to vertical and the forward leg bends to assume a **Bent Knee Vertical Position**. A *Vertical Descent* is executed with the bent knee extended to a **Vertical Position** completed as the ankles reach the surface of the water, followed by a *Vertical Descent* at the same tempo as the *Thrust*.


Solo Technical Routine Additional Requirements

6 – One (1) additional hybrid must be performed. It may be placed anywhere in the routine.

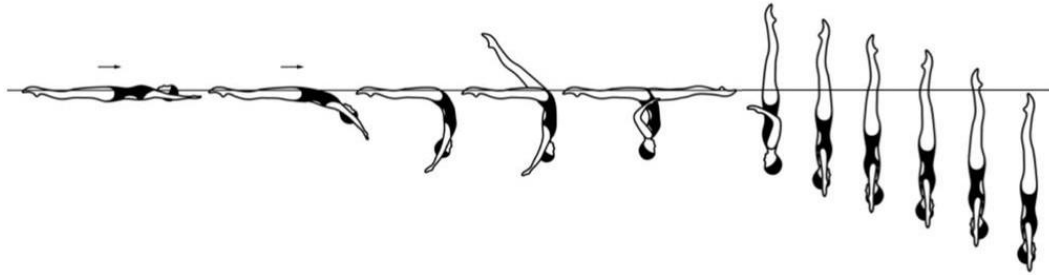
29.2.3
Duet Required Elements
Element 1
1A – Walkover Back Closing 360° – Continuous Spin 1080° / DD - 3.0

From a **Back Layout Position** a *Surface Arch Position* is assumed. One leg is lifted in a 180° arc over the surface to a **Split Position**. A rotation of 360° is executed, as the legs symmetrically close to a **Vertical Position**. Continuing in the same direction a *Continuous Spin of 1080°* (3 rotations) is executed.

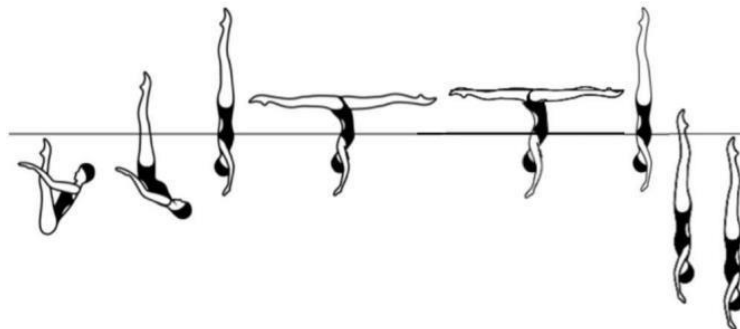



1B – Walkover Back Closing 180° – Continuous Spin 720° / DD - 2.5

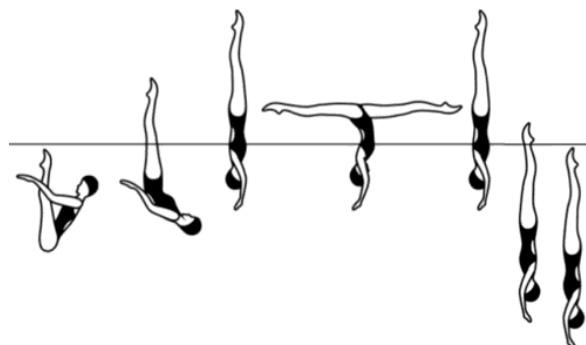
From a **Back Layout Position** a *Surface Arch Position* is assumed. One leg is lifted in a 180° arc over the surface to a **Split Position**. A rotation of 180° is executed, as the legs symmetrically close to a **Vertical Position**. Continuing in the same direction a *Continuous Spin of 720°* (2 rotations) is executed.

Element 2

2A – Rocket Split Alternating Legs – Spinning 180° / DD - 2.8

From a **Submerged Back Pike Position**, with the legs perpendicular to the surface, a *Thrust* is executed to a **Vertical Position**. Maintaining maximum height, the legs are split rapidly to assume two alternating **Airborne Split Positions**. The legs rapidly re-join to a **Vertical Position**. A rapid *180° Spin* is executed.


2B – Rocket Split – Spinning 180° / DD - 2.4

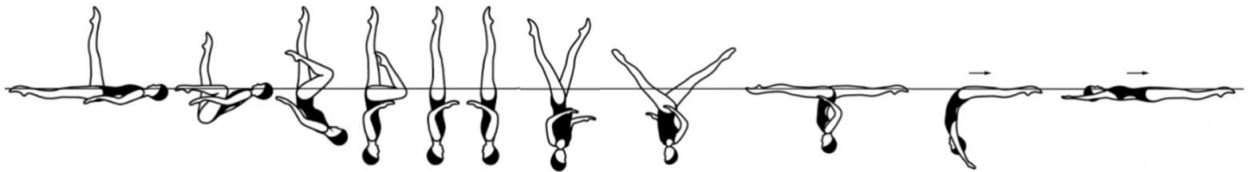
From a **Submerged Back Pike Position**, with the legs perpendicular to the surface, a *Thrust* is executed to a **Vertical Position**. Maintaining maximum height, the legs are split rapidly to assume an **Airborne Split Position**. The legs rapidly re-join to **Vertical Position**. A rapid *180° Spin* is executed.



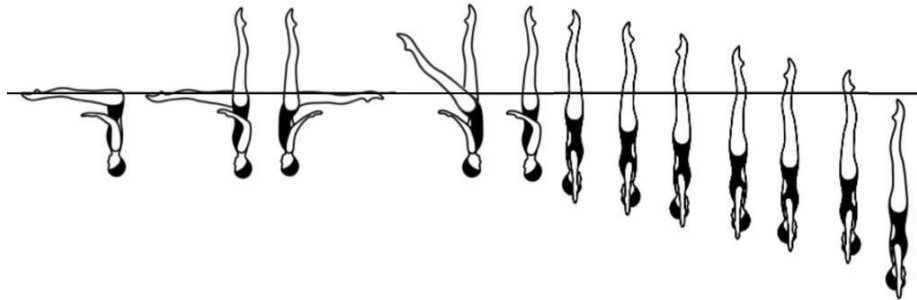



Element 3
3 – Beginning from a Ballet Leg Position - Flamingo Bent Knee rollback - Join to VP – Half Twist – 360° open to Split – Walkout / DD 3.1

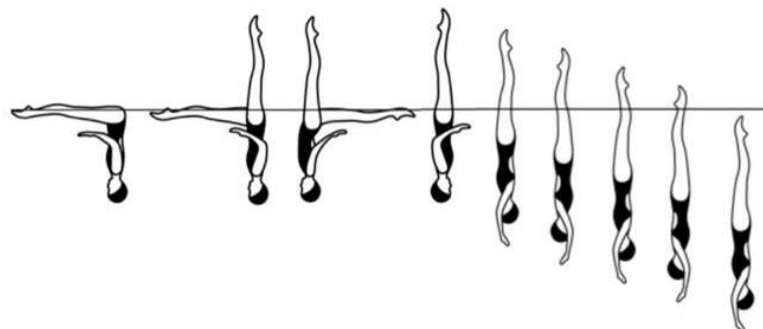
From a **Surface Ballet Leg Double Position**, the shin of the horizontal legs drawn along the surface of the water to assume a **Surface Flamingo Position**. With the ballet leg maintaining its vertical position, the hips are lifted as the trunk unrolls, while the bent leg moves to a **Bent Knee Vertical Position**. The bent leg is extended to a **Vertical Position**. A *Half Twist* is executed. Continuing in the same direction and without a pause, an additional rotation of 360° is executed as the legs are symmetrically opened to assume a **Split Position**. A *Walkout Front* is executed


Element 4
4A – Fishtail – Knight – Continuous Spin 1080° / DD - 3.2

A – From a **Front Pike Position** one leg is lifted to a **Fishtail Position**. The horizontal leg is rapidly lifted through an arc of 180° to assume a **Knight Position**. A rapid *Full Twist* is executed as the horizontal leg is lifted to a **Vertical Position**. Continuing in the same direction a *Continuous Spin 1080° (3 rotations)* is executed.

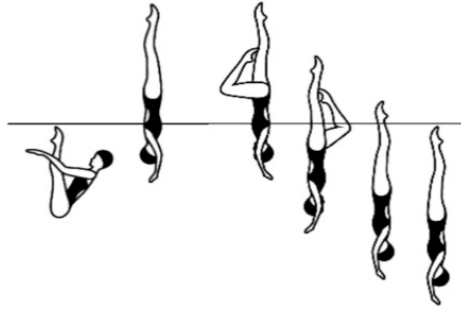

4B – Fishtail – Knight – Continuous Spin 720° / DD - 2.7

From a **Front Pike Position** one leg is lifted to a **Fishtail Position**. The horizontal leg is rapidly lifted through an arc of 180° to assume a **Knight Position**. A rapid *Half Twist* is executed as the horizontal leg is lifted to a **Vertical Position**. Continuing in the same direction a *Continuous Spin 720° (2 rotations)* is executed.

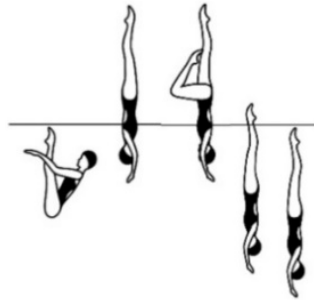



Element 5
5A – Thrust Bent Knee Twirl Spin 360° / DD – 2.3

From a **Submerged Back Pike Position**, with the legs perpendicular to the surface, a *Thrust* is executed to a **Vertical Position**. One leg is lowered to a **Bent Knee Vertical Position** as a *Twirl* is executed. Continuing in the same direction and without a pause a rapid *360° Spin* is executed as the bent knee is extended to join the vertical leg in a **Vertical Position** completed as the ankles reach the surface of the water, followed by a *Vertical Descent* at the same tempo as the *Thrust*.


5B – Thrust – Bent Knee Twirl / DD 2.1

From a **Submerged Back Pike Position**, with the legs perpendicular to the surface, a *Thrust* is executed to a **Vertical Position**. One leg is lowered to a **Bent Knee Vertical Position** as a *Twirl* is executed. Without a pause a *Vertical Descent* is executed as the bent knee is extended to join the vertical leg in a **Vertical Position** completed as the ankles reach the surface of the water, followed by a *Vertical Descent* at the same tempo as the *Thrust*.


Women's Duet Technical Routine Additional Requirements.

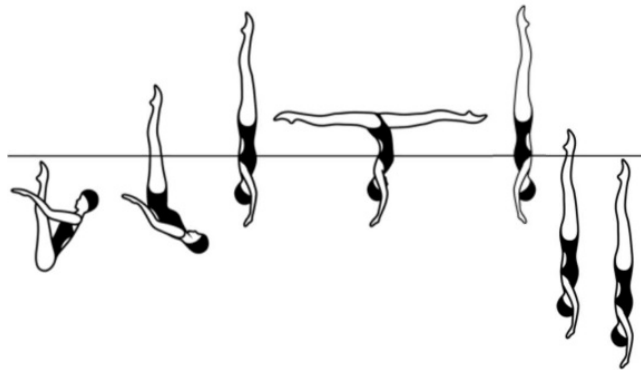
6 – One (1) additional hybrid must be performed. It may be placed anywhere in the routine.

7 – One (1) Pair Acrobatic must be performed. It may be placed anywhere in the routine.

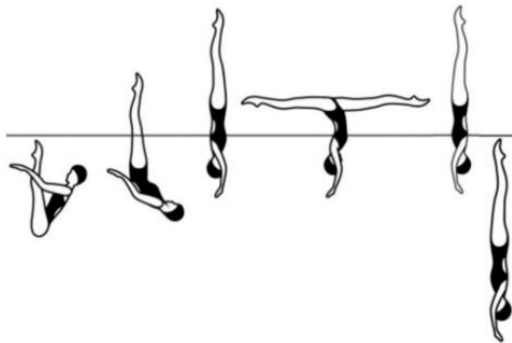

29.2.4 Mixed Duet Required Elements
Element 1
1A – Rocket Split Twirl Spin 180° / DD – 2.7

From a **Submerged Back Pike Position**, with the legs perpendicular to the surface, a *Thrust* is executed to a **Vertical Position**. Maintaining maximum height, the legs are split rapidly to assume an **Airborne Split Position**. A *Twirl* is executed, as the legs symmetrically close to a **Vertical Position**.

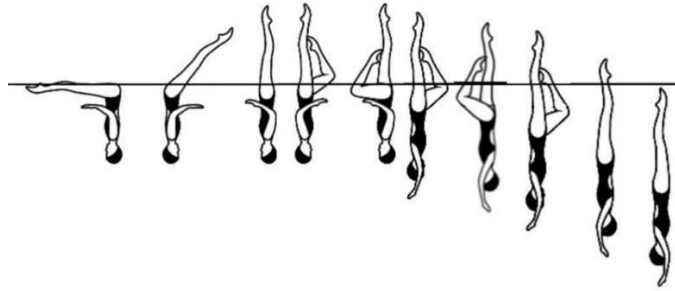
Continuing in the same direction a rapid *180° Spin* is executed.


1B – Rocket Split Twirl / DD – 2.5

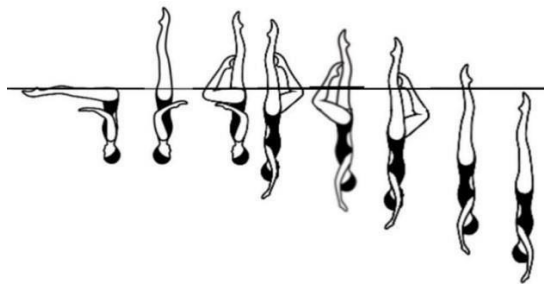
From a **Submerged Back Pike Position**, with the legs perpendicular to the surface, a *Thrust* is executed to a **Vertical Position**. Maintaining maximum height, the legs are split rapidly to assume an **Airborne Split Position**. A *Twirl* is executed, as the legs symmetrically close to a **Vertical Position**. A *Vertical Descent* is executed at the same tempo as the *Thrust*.


Element 2
2A – Front Pike – Vertical 360° Rotation – Full Twist to Bent Knee – Continuous Spin 720° / DD 2.4

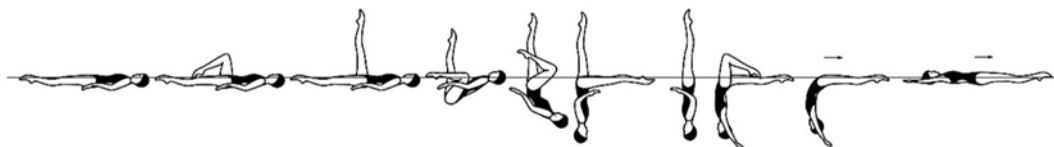
From a **Front Pike Position**, the legs are lifted to **Vertical Position** as a rotation of 360° is executed. Continuing in the same direction a *Full Twist* is executed as one leg is lowered to a **Bent Knee Vertical Position**. Continuing in the same direction a *Continuous Spin 720°* (2 rotations) is executed as the bent knee is extended to join the vertical leg to a **Vertical Position** completed as the ankles reach the surface of the water and continues through submergence.


2B – Front Pike – Vertical 180° Rotation – 1/2 Twist to Bent Knee – Continuous Spin 720° / DD 2.2

From a **Front Pike Position**, the legs are lifted to **Vertical Position** as a rotation of 180° is executed. Continuing in the same direction a *Half Twist* is executed as one leg is lowered to a Bent Knee **Vertical Position**. Continuing in the same direction a *Continuous Spin 720°* (2 rotations) is executed as the bent knee is extended to join the vertical leg to a **Vertical Position** completed as the ankles reach the surface of the water and continues through submergence.


Element 3
3 - Manta Ray Half Twist / DD 3.0

Starting from a **Back Layout Position** a *Ballet Leg* is assumed and the shin of the horizontal leg is drawn along the surface of the water to assume a **Surface Flamingo Position**, traveling head first. With the ballet leg maintaining its vertical position, the hips are lifted as the trunk unrolls while the bent leg straightens with the knee at the surface of the water to assume a **Fishtail Position**. The horizontal leg is lifted to a **Vertical Position**, as the body rotates 180°. The direction of the 180° rotation is closing externally the horizontal leg. (Note: A right flamingo start requires the left shoulder back during the 180° rotation and a left flamingo start requires the right shoulder back during the 180° rotation). The legs are lowered rapidly simultaneously to a **Bent Knee Surface Arch Position**. (Note: The Bent Knee Surface Arch Position can be assumed by using either leg). The bent knee is straightened to a **Surface Arch Position** and with continuous motion, an *Arch to Back Layout Finish Action* is executed.



**Mixed Duet - Technical Routine Additional Requirements**

4 – One (1) free hybrid

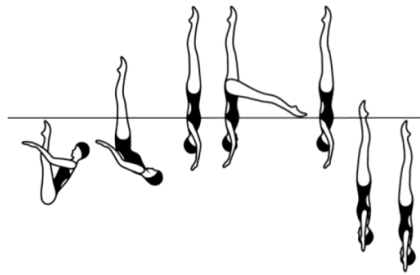
5 – One (1) required hybrid which must contain only one Thrust declaration and two (2) different Connection declarations

6 – Two (2) Pair Acrobatics of free choice but must not repeat the same acrobatic

7 – 3 declared Sustained Surface Connections (“SuCon”) with travel (1m or more) or rotation (180° or more)

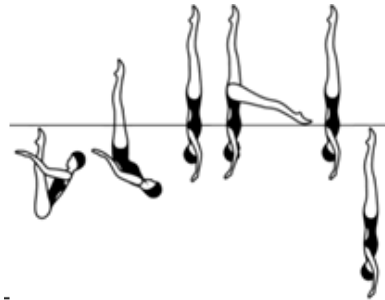
Team Required Elements**Element 1****1A – Flying Fish Hybrid Spinning 180° / DD - 2.5**

From a **Submerged Back Pike Position** with the legs perpendicular to the surface, a *Thrust* is executed to a **Vertical Position** and with no loss of height one leg is rapidly lowered to an airborne **Fishtail Position**. Without a pause the horizontal leg is rapidly lifted to a **Vertical Position**, followed by a rapid *180° Spin*.

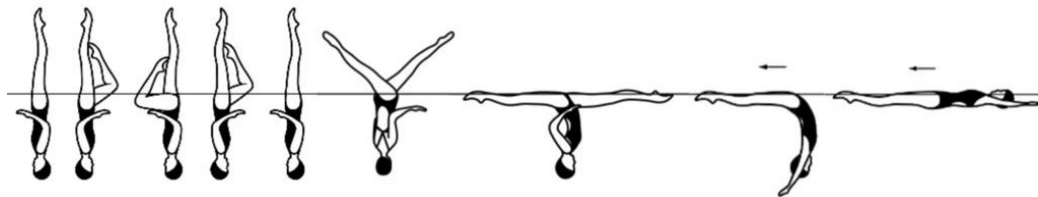



1B – Flying Fish Hybrid / DD - 2.3

From a **Submerged Back Pike Position** with the legs perpendicular to the surface, a *Thrust* is executed to a **Vertical Position** and with no loss of height one leg is rapidly lowered to an airborne **Fishtail Position**. Without a pause the horizontal leg is rapidly lifted to a **Vertical Position** followed by a *Vertical Descent*.


Element 2
2A – Vertical – Full Twist to Bent Knee – Full Twist to Vertical – Open 180° – Walkout / DD - 2.6

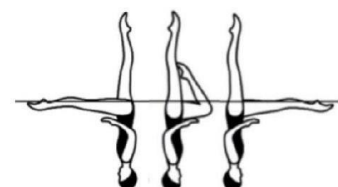
Starting in a **Vertical Position**, a *Full Twist* is executed as one leg is lowered to a **Bent Knee Vertical Position**. Continuing in the same direction another *Full Twist* is executed, as the bent knee is extended to a **Vertical Position**. Continuing in the same direction a *Half Twist* is executed as the legs are symmetrically lowered to a **Split Position**. A *Walkout Front* is executed.


2B – Vertical – Half Twist to Bent Knee – Half Twist to Vertical – Split – Walkout / DD - 2.3

Starting in a **Vertical Position**, a *Half Twist* is executed as one leg is lowered to a **Bent Knee Vertical Position**. Continuing in the same direction another *Half Twist* is executed, as the bent knee is extended to a **Vertical Position**. The legs are symmetrically lowered to a **Split Position**. A *Walkout Front* is executed.

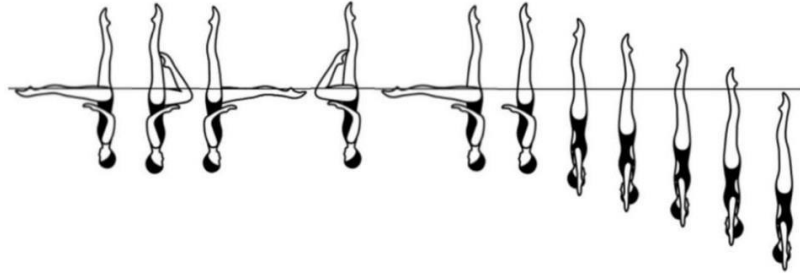

Fouetté Rotation - New movement

From a **Fishtail Position**, with the horizontal leg leading toward the vertical leg, a rapid 180° rotation is executed as the front leg bends to assume a **Bent Knee Vertical Position**. The bent leg rapidly extends to a **Fishtail Position**.

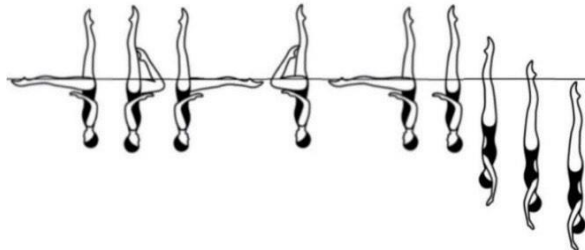



Element 3
3A – Two Fouetté Rotations – Vertical – Continuous Spin 720° / DD – 2.6

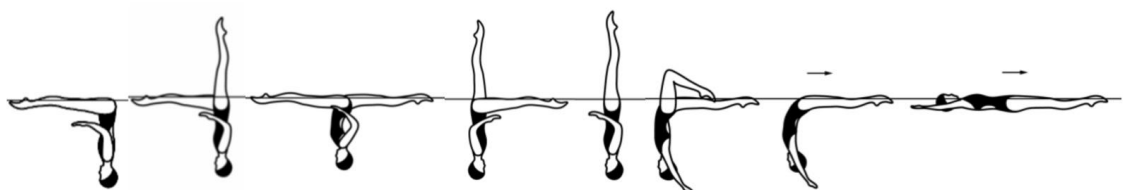
From a **Fishtail Position**, 2 *Fouetté rotations* (180°+180°) are executed. The horizontal leg is rapidly lifted to a **Vertical Position**. Continuing in the same direction a *Continuous Spin of 720°* (2 rotations) is executed.


3B – Two Fouetté Rotations – Vertical – Spinning 360° / DD - 2.3

From a **Fishtail Position**, 2 *Fouetté rotations* (180°+180°) are executed. The horizontal leg is rapidly lifted to a **Vertical Position**. Continuing in the same direction, a rapid *Spinning 360°* (1 rotation) is executed.

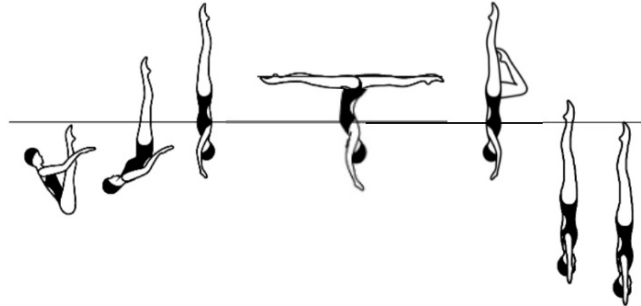

Element 4
4 – Butterfly Hybrid / DD - 2.9

The Butterfly Hybrid is to be performed rapidly. From a **Front Pike Position**, one leg is lifted to a **Fishtail Position**. The horizontal leg is lifted through an arc of 180° as the vertical leg is lowered to assume a **Split Position**. Without a pause a hip rotation of 180° is executed as the front leg is raised to assume a **Fishtail Position**. Continuing in the same direction a 180° rotation is executed as the horizontal leg is lifted to a **Vertical Position**. The legs are lowered simultaneously to a **Bent Knee Surface Arch Position**. (Note: The **Bent Knee Surface Arch Position** can be assumed by using either leg). The bent knee is straightened to a **Surface Arch Position** and with continuous motion an *Arch to Back Layout Finish Action* is executed.

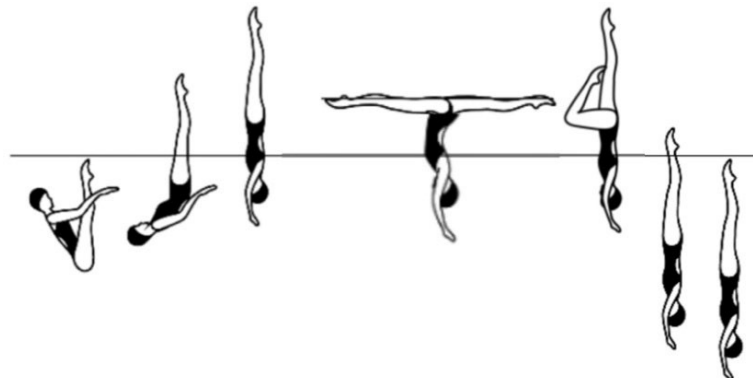



Element 5
5A – Rocket Split Bent Knee Twirl Hybrid / DD - 2.4

From a **Submerged Back Pike Position** with the legs perpendicular to the surface, a Thrust is executed to a **Vertical Position**. Maintaining maximum height, the legs are split rapidly to assume an **Airborne Split Position**, followed by a rapid rotation of 180° to assume an airborne **Bent Knee Vertical Position** with the front leg bent. A rapid *Vertical Descent* is executed as the bent knee is extended to join the vertical leg completed as the ankles reach the surface of the water followed by a *Vertical Descent*.


5B – Rocket Split Bent Knee Hybrid / DD - 2.1

From a **Submerged Back Pike Position** with the legs perpendicular to the surface, a Thrust is executed to a **Vertical Position**. Maintaining maximum height, the legs are split rapidly to assume an **Airborne Split Position** followed by the front leg rapidly bending and the back leg rapidly lifting to a vertical to assume an airborne **Bent Knee Vertical Position**. A *Vertical Descent* is executed as the bent knee is extended to join the vertical leg completed as the ankles reach the surface of the water followed by a *Vertical Descent*.


Team Technical Routine Additional Requirements. These may be placed anywhere in the routine.

6 - Two (2) additional hybrids, one of which must include a Cadence action,

7 - One (1) acrobatic movement must be performed by all team members. The DD for the acrobatic movement *must not exceed 3.0 inclusive of Base Mark value*.

Cadence Action: Identical movement(s) performed sequentially, one by one, by all team members. When more than one cadence action is performed, they must be consecutive and not separated by other optional or required elements. A second cadence action may begin before the first cadence action is completed by all team members but each team member must do the action of each cadence.



Acrobatic movements: A general term for jumps, throws, lifts, stacks, platforms, etc., which are performed as spectacular gymnastic feats and/or risky actions, and are mostly achieved with assistance from other swimmer(s). An acrobatic movement is considered when it starts and ends once all team members are in the water.

A routine may contain a maximum of one circle pattern.

The direction of propulsion may vary as long as all swimmers are facing the same direction.

Variations in propulsion and direction facing are permitted only during underwater pattern changes, underwater actions, and getting into and finishing a circle.