



TFB-C-9x90 Filter System, 7,956 gpm

**Series TFB** is Tower-Flo's most versatile filter system and it is the most frequently customized to meet specific situations and challenges. Here are just a few examples of Tower-Flo's experience in customizing **Series TFB** filter systems.

**Challenge:** Engineer and fabricate large flow-rate filter systems for field erected cooling towers such as those found at power plants, petro-chemical refineries, central chiller plants and industrial complexes.

**Solution:**

- a) multi-vessel filter system (as shown above) served by one pump and control panel, with either common or sequential backwash;
- b) multiple, stand-alone filter systems with special control interfaces (as shown below).



Five, TFB-66 Filter Systems, 475 gpm each, with backwash from static supply and backwash lockout by five

MULTI-VESSEL CHART				
TANK DIA.	NO. TANKS	SQ. FT. FILTER AREA	GPM FLOW RATE*	PIPE SIZE
42	1	9.62	192	3
48	1	12.57	251	4
54	1	15.90	318	4
42	2	19.24	385	4
60	1	19.63	294	4
66	1	23.76	475	6
48	2	25.14	503	6
72	1	28.27	565	6
54	2	31.80	636	6
78	1	33.18	664	6
84	1	38.48	770	6
60	2	39.26	785	6
90	1	44.18	884	8
66	2	47.52	950	8
54	3	47.70	954	8
96	1	50.26	1005	8
72	2	56.54	1131	8
102	1	56.70	1135	8
60	3	58.89	1178	8
108	1	63.61	1272	8
78	2	66.36	1327	8
114	1	70.88	1416	8
66	3	71.28	1426	8
84	2	76.96	1540	8
120	1	78.53	1571	10
72	3	84.81	1696	10
90	2	88.35	1767	10
78	3	99.54	1991	10
96	2	100.52	2011	10
102	2	113.40	2270	10
84	3	115.44	2309	10
108	2	127.22	2545	10
90	3	132.54	2651	10
114	2	141.75	2832	10
96	3	150.78	3016	12
120	2	157.06	3124	12
102	3	170.10	3405	12

\* CAPACITY @ 20 GPM/FT<sup>2</sup>

**Challenge:**

Engineer and fabricate a complete **Series TFB** filter system to be disassembled into smaller pieces for rigging through confined access or onto freight elevators for moves to basements, upper level mechanical rooms or roof tops, then reassembled.

**Solution:**

- a) split skid with control panel on either the pump skid or the vessel skid;
- b) flanged, 2-piece or 3-piece vessel, with or without shallow flanged and dished heads, short side sheet and other breakdown features such as removeable vessel legs, flanged skid, removable control panel bracket.



*TFB-C-66 , 393 gpm, separate pump skid, freshwater backwash from city water*



*TFB-C-54-Flanged, 318 gpm, with flanged vessel, removable legs, flanged skid and removable control panel bracket.*

*Assembly dimensions 58"W x 106"L x 78"H. Largest single component, rigged to fit through 36" doorway, 34-3/4"W x 60"H.*



*TFB-42-BA, 192 gpm filter rate , 400 gpm tower basin agitation rate*

**Challenge:** Create a **Series TFB** filter system to filter at one flow rate – determined by the volume of condenser water – while driving at basin sweeper piping system with nozzles at a higher flow rate – determined by the surface area of the cooling tower basin – with a single pump and controls.

**Solution:** engineer and fabricate a “bypass-agitation” filter system

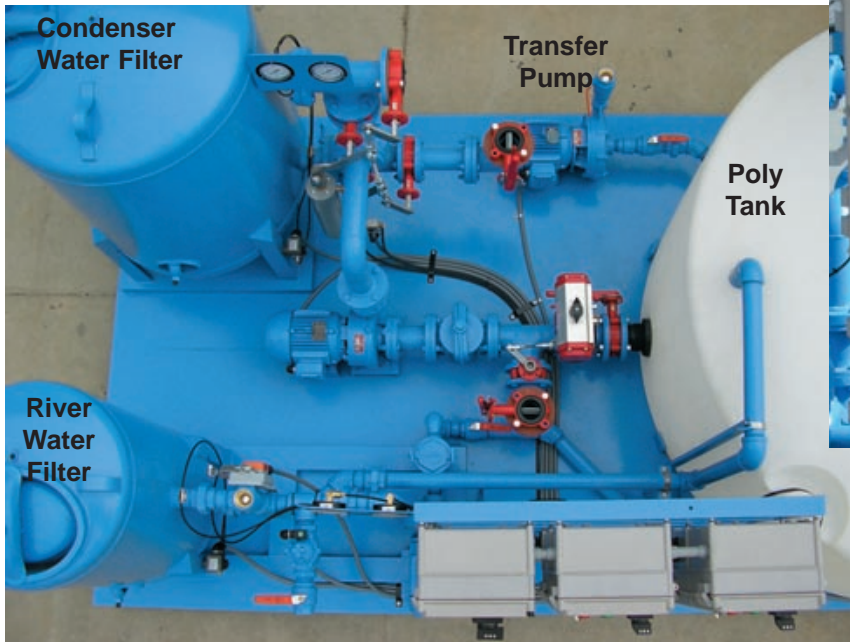
**Challenge:** Change **Series TFB** filter arrangement to accommodate field connections, access, and other physical properties at the point of installation.

**Solution:**

- a) rotate pump 90° or 180°;
- b) change control panel location to opposite side;
- c) “mirror” arrangement from standard; pump, control panel, actuator and linkage, manway, and hand-hole relocated to opposite position.



*TFB-90, 884 gpm, self-priming pump rotated 90°, control panel mounted on opposite side*



Perhaps the epitome of a custom engineered and built Tower-Flo Filter system is this multi-pupose system conceived and sold by Tower-Flo Representative Merion Pump and Equipment, Conshohoken, PA, for Mittal Steel, Steelton, PA.

The system automatically performs two filter functions and a water transfer function. Raw river water is filtered to fill a polyethylene storage tank; when filled liquid level controls signal that filter to continuously filter the water in the poly tank; and when dirty, it draws its backwash source water from the poly tank. Meanwhile, a separate filter is filtering a condenser water loop and draws its backwash source water from the poly tank. Finally, a transfer pump receives remote on/off signals from a separate make-up water treatment skid.

This custom filter system is one of five major components of a \$2.1M quench water treatment and temperature control system for Mittal Steel.