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Flow-shop problems with transportation times and a single robot

- **maximal polynomially solvable:**

$F2\|\|C_{max}$	Johnson (1954) [4]
$F2;R1\|p_{ij}=1;t_i\|C_{max}$	Hurink & Knust (2001) [3]
$F2;R1\|p_{ij}=p;t_i\in\{T_1,T_2\}\|C_{max}$	Hurink & Knust (2001) [3]
$F3;R1\|p_{ij}=1;t_k;r_i\|C_{max}$	Baptiste et al. (2004) [1]
$F;R1\|n\geq m-1;p_{ij}=p;t_k\|C_{max}$	Hurink & Knust (2001) [3]
$F3;R1\|p_{ij}=1;t_k\|L_{max}$	Baptiste et al. (2004) [1]
$F\|p_{ij}=p;r_i\|\sum w_iC_i$	Single-machine problem
$F2;R1\|p_{ij}=p;t_{ik}=T;r_i\|\sum w_iC_i$	Knust (1999) [6]
$F\|p_{ij}=p;r_i\|\sum w_iU_i$	Single-machine problem
$F2;R1\|p_{ij}=p;t_{ik}=T;r_i\|\sum w_iU_i$	Knust (1999) [6]
$F\|p_{ij}=p;r_i\|\sum T_i$	Single-machine problem
$F2;R1\|p_{ij}=p;t_{ik}=T;r_i\|\sum T_i$	Knust (1999) [6]
$F\|p_{ij}=1;r_i\|\sum w_iT_i$	Single-machine problem
$F\|p_{ij}=p\|\sum w_iT_i$	Single-machine problem
$F2;R1\|p_{ij}=p;t_{ik}=T\|\sum w_iT_i$	Knust (1999) [6]

- **minimal NP-hard:**

*	$F2\|r_i\|C_{max}$	Lenstra et al. (1977) [7]
*	$F2;R1\|p_{ij}=p;t_i\|C_{max}$	Hurink & Knust (2001) [3]
*	$F2;R1\|t_{ik}=T\|C_{max}$	Kise (1991) [5], Hurink & Knust (2001) [3]
*	$F3\|\|C_{max}$	Garey et al. (1976) [2]
*	$F3;R1\|p_{ij}=p;t_{ik};r_i\|C_{max}$	Knust (1999) [6]
*	$F2\|\|L_{max}$	Lenstra et al. (1977) [7]
*	$F2;R1\|p_{ij}=1;t_i;r_i\|L_{max}$	Knust (1999) [6]
*	$F3;R1\|p_{ij}=1;t_{ik};r_i\|L_{max}$	Knust (1999) [6]
*	$F3;R1\|p_{ij}=p;t_{ik}\|L_{max}$	Knust (1999) [6]
*	$F2\|\|\sum C_i$	Garey et al. (1976) [2]
*	$F2;R1\|p_{ij}=1;t_i;r_i\|\sum C_i$	Knust (1999) [6]
*	$F3;R1\|p_{ij}=1;t_{ik};r_i\|\sum C_i$	Knust (1999) [6]
	$F2;R1\|p_{ij}=1;t_i\|\sum w_iU_i$	Knust (1999) [6]
	$F3;R1\|p_{ij}=1;t_{ik}\|\sum w_iU_i$	Knust (1999) [6]
	$F2;R1\|p_{ij}=1;t_i\|\sum T_i$	Knust (1999) [6]
	$F3;R1\|p_{ij}=1;t_{ik}\|\sum T_i$	Knust (1999) [6]
*	$F2;R1\|p_{ij}=1;t_i\|\sum w_iT_i$	Knust (1999) [6]
*	$F3;R1\|p_{ij}=1;t_{ik}\|\sum w_iT_i$	Knust (1999) [6]

- **minimal open:**

$F2;R1\|p_{ij}=1;t_i\in\{T_1,T_2\};r_i\|C_{max}$	$Fm;R1\|p_{ij}=1;t_{ik}=T\|L_{max}$
$F3;R1\|p_{ij}=1;t_i\in\{T_1,T_2\}\|C_{max}$	$F2;R1\|p_{ij}=1;t_i\in\{T_1,T_2\}\|\sum C_i$
$F3;R1\|p_{ij}=p;t_{ik}=T;r_i\|C_{max}$	$F3;R1\|p_{ij}=1;t_{ik}=T\|\sum C_i$
$Fm;R1\|p_{ij}=1;t_{ik}=T;r_i\|C_{max}$	$F3;R1\|p_{ij}=1;t_{ik}=T\|\sum U_i$
$F2;R1\|p_{ij}=1;t_i\in\{T_1,T_2\}\|L_{max}$	$F2\|p_{ij}=p;r_i\|\sum w_iT_i$
$F3;R1\|p_{ij}=1;t_{ik}=T;r_i\|L_{max}$	$F2;R1\|p_{ij}=1;t_{ik}=T;r_i\|\sum w_iT_i$
$F3;R1\|p_{ij}=p;t_{ik}=T\|L_{max}$	$F3\|p_{ij}=p;r_i\|\sum w_iT_i$

- **maximal open:**

$F3;R1\|p_{ij}=p;t_{ik}\|C_{max}$	$F;R1\|p_{ij}=p;t_i\in\{T_1,T_2\};r_i\|\sum w_iU_i$
$F;R1\|p_{ij}=1;t_{ik};r_i\|C_{max}$	$F;R1\|p_{ij}=p;t_k;r_i\|\sum w_iU_i$
$F;R1\|p_{ij}=p;t_{ik}\|\sum w_iC_i$	$F3;R1\|p_{ij}=p;t_i;r_i\|\sum w_iT_i$
$F;R1\|p_{ij}=1;t_{ik}\|\sum U_i$	$F;R1\|p_{ij}=p;t_i\in\{T_1,T_2\};r_i\|\sum w_iT_i$
$F3;R1\|p_{ij}=p;t_i;r_i\|\sum w_iU_i$	$F;R1\|p_{ij}=p;t_k;r_i\|\sum w_iT_i$

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